pi Implements Software-Defined Datacenter with KVM on Nutanix

Background

Headquartered in UK and operating in South Africa, Australia, and USA, pi was created with the purpose of putting big data to work for their pioneering clients in the public and private sectors.

Rapid Growth

Responding to rapid organizational growth over the past few years, Kevin Thorpe, pi's CTO, recognized the need to address the inefficiencies of the traditional server environment and thus pushed the move to virtualize the datacenter. This move to virtual machines (VMs) would help the team at pi streamline management and improve performance of increasingly large, complex workloads that were already straining the existing infrastructure.

Thorpe and his team support a wide range of different global clients with demanding workloads, and have traditionally struggled to deploy infrastructure with enough horsepower and capacity to support their growing client base. "We have to deal with very heavy-duty workloads with very large datasets and queries. One of the problems we had was collateral damage with our clients' databases. In the past it was common when one process either ran out of disk space or broke another process that belongs to another client. We wanted to separate out these heavy workloads, but it was going to be very expensive to keep buying lots and lots of machines for the job. Virtualization became an obvious choice," Thorpe explained. It also provided the option of using hybrid cloud services.

Considering a Converged Approach to Virtualization

Initially working with a consultant to design a new infrastructure solution including a shared storage array, networking components and separate server nodes, Thorpe and his team quickly realized how challenging and expensive the migration would be. Additionally, the SAN-based infrastructure implied a steep learning curve and would require high operational expenses to manage and scale over time.

Seeking an alternative approach, Thorpe and his team discovered Nutanix, and the concept of incremental, linear scale-out with quick and easy deployment immediately resonated with them. Thorpe explained, "With SAN, we were going to have to oversize the infrastructure purchase to allow for growth. If we didn't, at some point we'd have to get a bigger one and pull the old one out. We're talking about a disruptive forklift upgrade. However, with Nutanix we saw that we can scale as our customer base grows. We can factor the cost of buying extra nodes to scale-out into the new business instead of buying expensive new shared storage every few years. So we can save a lot on incremental CAPEX."

The innovation, strong growth and loyal and happy customer base that Nutanix brought aligned neatly with pi's vision. Thorpe added, "Nutanix's background gave us the confidence in Nutanix as the right partner to help us virtualize and grow."

> " We decided to try a Nutanix box and didn't look back from that point. You just plug the system in and start building VMs on it. It is very, very quick. Now it takes less than fifteen minutes to stand up new machines for our clients and we've even minimized downtime for them in areas where we had challenges in the past. "
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> -Kevin Thorpe, CTO, pi

Industry

Software-as-a-service Provider

Business Needs

An easy-to-manage, scale-out compute and storage infrastructure. Compatible with KVM hypervisor and should be able to handle large datasets and heavy database workloads.

Solution

The Nutanix Virtual Computing Platform (NX-3000 Series) with KVM Hypervisor

Benefits

- 3 times higher performance
- Predictable growth and "pay-as-you-go" scalability leveraging KVM
- Enhanced technical demonstration and quick on-boarding of clients
- Reduced operational expenditure
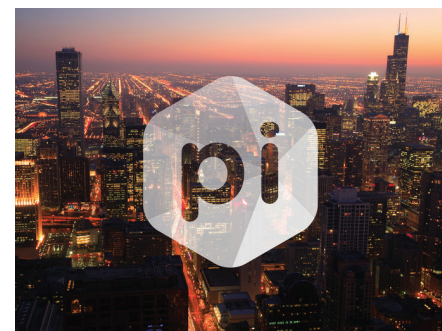
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Agile and Flexible Environment

In addition to operational savings and simple scale-out, one of the major factors to consider Nutanix for Thorpe's team was the Nutanix platform's ability to support KVM as a hypervisor. "All our servers are CentOS and the fact that it uses CentOS with KVM right into the VMs, seems to suit us quite well. KVM is a much more scriptable approach, so it would be a very shallow learning curve for us with Nutanix and we would be able to preserve the end-to-end Linux heritage with KVM. The combination of KVM on Nutanix supports agility and much better speed to provision VMs," Thorpe said.

After conducting a trial run with the Nutanix Virtual Computing Platform NX-3000 Series, Thorpe decided to move forward and migrate all of the company's core workloads onto Nutanix with KVM. While other infrastructure solutions have long factory lead times and complex installation procedures that can take well over a month to complete, the NX-3000 Series was on site in less than a week and was running in under an hour. With help from the Nutanix team, Thorpe's team was able to start provisioning VMs and migrating workloads onto the new environment in less than an hour.

 "We decided to try a Nutanix box and didn't look back from that point. You just plug the system in and start building VMs on it. It is very, very quick. One of the things we worried about when considering a SAN was the time investment required to set it up and plan for growth or change. Now, it takes less than fifteen minutes to stand up new machines for our clients and we've even minimized downtime for them in areas where we had challenges in the past. From our clients' perspective, maintenance downtime has disappeared. It's far, far easier for us."

Additionally, the team is fascinated by the storage performance of the Nutanix solution. "Read speeds on the test side were at least three times faster, so it's not just that Nutanix is easy to use, but it's also providing phenomenal performance in a very small box," added Thorpe.

Expansion into the Future

Since originally deploying their Nutanix cluster, Thorpe and his team have continued to migrate more core database workloads onto Nutanix and will soon be migrating their MySQL databases on Nutanix. Experiencing tremendous success with the platform, pi decided to purchase another Nutanix system within just three months of deploying the first block. "It's a lot easier to support this infrastructure, and we now have a coherent backup policy over many servers in different locations. Remote disaster recovery is going to save us a huge amount of time when we eventually move datacenters," Thorpe said.

Looking forward to further success in 2014, pi will continue to rely on Nutanix to be the foundation for its next-generation datacenter. "The flexibility offered by budgeting for additional nodes every few months, rather for huge capital upgrades, permits pi to be nimble and creative in supporting client data growth," Thorpe concludes.

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About pi:

pi is a global data services company, which blends technical, analytical and innovative thinking to help organizations in the public and private sectors put big data to work. pi is headquartered in London, UK and has several offices throughout the world. pi is inspired by data possibility and their expertise allows teams to envision new services and solutions that transform the value of data across an organization. For more information visit www.p-i.net

About Nutanix

Nutanix provides datacenter infrastructure solutions that are hyper-efficient, massively scalable and elegantly simple. The award-winning Nutanix Virtual Computing Platform has disrupted the market by seamlessly and natively converging compute and storage in a single appliance. Headquartered in San Jose, Calif. with offices and authorized solution providers throughout the world, Nutanix is privately held and backed by top-tier VC firms. For more information, visit www.nutanix.com.

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