

Virtual Workload Migration
Simplifies Management, Stream-
lines Governance and Eliminates
Hypervisor Licensing Costs

Pi Upgrades to the Acropolis Hypervisor



COMPANY BACKGROUND

Pi is a UK-based global data services company that blends technical, analytical and innovative thinking to help public and private organizations put their data to work. Pi delivers big data, machine learning and decision automation systems to clients in a wide range of data-reliant industries, including financial services, procurement, retail, travel and healthcare. The SaaS provider's embedded intelligence and data visualization technology enables organizations to automatically and continuously drive cost savings, operational efficiencies and revenue growth via its Decision Automation Platform.

IT CHALLENGES

Pi migrated all of its virtual workloads from a legacy 3-tier server and storage environment to the Nutanix Xtreme Computing platform in 2014. "Things have changed a lot since last year," noted Kevin Thorpe, VP of Enterprise Platforms at Pi. "We have shifted our business focus further towards machine learning and decision support, rather than standard 'data wrangling'. We now have 63 staff members, our US office is fully operational and we're launching a new development and research office in Madrid to take advantage of the skilled workforce. We wouldn't have been able to support all that growth if we hadn't migrated to the Nutanix technology platform."

THE NUTANIX ENVIRONMENT

Pi deployed the Nutanix XCP systems at two off-site data center locations. "We are currently running a 4-node 3000 series cluster at one location and a 6-node 3000 series at our second site," Thorpe shared. "We also have a stack of commodity Dell R410 servers running KVM as more cost effective compute nodes utilizing the Nutanix clusters for storage. In addition, we deployed Nutanix on some of our older Dell 510 servers using Nutanix's free Community version. This enables our development team to cost-effectively use the same environment as our production servers."

Pi virtualized all of its workloads using the KVM hypervisor. "We started off with VMware vSphere but realized quickly the costs were going to become prohibitive," said Thorpe. "We never considered Hyper-V because we are a LINUX shop. That's why we chose KVM, because it's open source-based, it uses industry standard protocols and we had seen the roadmap towards Acropolis."

EASIER MANAGEMENT

"Management simplicity is a very important thing, especially for a company like ours that's growing quickly," noted Thorpe. "As a SaaS provider, we don't just have one product, we create different solutions for each client. Having a flexible infrastructure is a necessity because we can't cost-effectively gear-up and build an entirely new infrastructure just to run one application. We need a flexible infrastructure so that we can tailor our solutions for each customer project."

"With the Acropolis Hypervisor, we're now able to reproduce in-house most of the capabilities that Amazon Web services or Google provides. As a high-growth startup Nutanix allows us to achieve this easily. Acropolis gives us cloud-like flexibility, without the perceived risk of public clouds."

– Kevin Thorpe,
VP of Enterprise Platforms, Pi



Pi is using Nutanix Prism to manage the XCP systems. “When you look at the total cost of ownership of our new solution, it’s not just the cost of the nodes but the reduction in management expense,” Thorpe explained. “The Nutanix platform is very solid and it has eliminated the time our team was spending on infrastructure management. In spite of having a small IT team, we can now explore emerging technologies and practices, including containers and DevOps because our team isn’t bogged down with constant infrastructure upkeep. Nutanix frees up their time to focus on innovation.”

ELIMINATING INFRASTRUCTURE SILOS

“The days are long gone where we had one big machine, with a very large high-speed RAID array that ran our database, and another machine with a large slower RAID array that ran all of our data storage,” Thorpe explained. “If you want to be successful, you can’t run everything in silos anymore. That’s why we’re migrating everything to Nutanix.”

EASY SCALABILITY

Pi is now running around 200 virtual machines on its first two Nutanix clusters. “The number of VMs on Nutanix will increase considerably over the next few months,” Thorpe continued. “The easy scalability of the Nutanix platform has allowed us to grow rapidly.”

6:1 REDUCTION IN DATACENTER FOOTPRINT

The compact Nutanix Xtreme Computing systems have enabled Pi to reduce data-center footprint and power. “The Nutanix systems fit in just one rack,” said Thorpe. “We would have needed approximately six racks of infrastructure if we were on standard hardware plus all the physical maintenance overhead the 3-tier environment would introduce. With Nutanix’s small form factor and simple management interface, we are now able to support a larger number of clients in the same amount of data-center space with a smaller IT team.

MOVING TO THE ACROPOLIS HYPERVISOR (AHV)

Pi recently made the decision to move from KVM to the built-in Nutanix Acropolis Hypervisor. AHV is built upon the proven open-source software foundation of KVM and extends its base functionality to include valuable features like high availability and live migration. AHV ensures support for all popular workloads and is hardened to meet the most stringent enterprise security requirements. The converged storage and virtualization stack eliminates the bloat of legacy standalone hypervisors and makes virtualization invisible.

“We upgraded from KVM to AHV just a few months ago,” noted Thorpe. “The newest version of the Nutanix software gives us the ability to use Nutanix Prism to centrally manage all five clusters and greatly simplifies HA across our two physical locations. We are using the comprehensive REST API provided by the platform to automate infrastructure management workflows. Other useful Acropolis features that we didn’t have in KVM include protection domains and metro availability. Before we moved to AHV, we had to do all of that by hand with custom scripts. The Acropolis Hypervisor has taken a huge workload off of our IT team. None of this would have been possible if we were still using KVM and traditional hardware.”



ENABLING ENCRYPTION AND STREAMLINING COMPLIANCE

Nutanix XCP provides strong data protection by encrypting user and application data to a level of FIPS 140-2 Level 2 compliance. Data at rest encryption is delivered through self-encrypting drives (SED) that are factory-installed in the Nutanix hyper-converged appliance. “We recently ordered another four NX-3000 nodes with encryption to help us comply with the new European Union (EU) data protection laws,” Thorpe reported. “We will be adding two additional Nutanix clusters with the encrypted systems, giving us at each location a 3-node encrypted cluster for client data and a 4-node unencrypted cluster for non-sensitive or internal information, including our websites. We will then have four Nutanix clusters running our production workloads and an additional community edition cluster for the development team to test on.”

Since virtualizing its environment with Acropolis, Pi has gone from a shared, multi-tenant service architecture, to deploying single tenant environments. “We are now serving global clients, including several large banks and other multinational corporations. Their security teams are asking a lot of challenging questions. But now when they ask if all of their data is encrypted, we can say, ‘Yes, the Nutanix platform uses FIPS 140-2 Level 2 compliance drives,’ to quickly address their concerns. Nutanix makes governance so much easier to explain and document.”

Having a single-tenant environment also enables Pi’s IT team to easily destroy VMs at the end of their lifecycle. “When you have one server with 20 clients on it, it’s very difficult to destroy all of the client’s data,” Thorpe explained. “You have to locate all of the files and delete them one by one. With single tenancy, we can easily sign-off that we have destroyed every VM that held their data. That capability makes governance issues a lot easier.”

ACROPOLIS VS THE PUBLIC CLOUD

“A lot of organizations are using Amazon or Rackspace public clouds,” Thorpe explained. “You can do that, but the costs start adding up very quickly. The bigger issue for us is governance. The client data we work with is quite sensitive. It’s not website clicks but rather business-oriented travel data, medical, financial information and other types of confidential information. There are some smaller cloud providers that do have EU and government certification, but they aren’t mainstream solutions. We would have to tailor our approach to whatever they did and those solutions are also quite expensive.”

Pi has chosen not to use public clouds because of the EU information governance requirements. “With the Acropolis Hypervisor, we are now able to reproduce in-house most of the capabilities that Amazon Web services or Google provides. Acropolis gives us cloud-like flexibility, without the risk and governance challenges of public clouds. It enables us to maintain client security in a locked room in a protected data center. You just can’t do that with a public cloud.”



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Industry

Software-as-a-Service Provider

Business Needs

Wanted to simplify management of virtual environment and reduce TCO

Solution

- › Nutanix Xtreme Computing Platform with NX-3000-Series systems
- › Nutanix Acropolis with the Acropolis Hypervisor (AHV)
- › Nutanix Prism management solution

Benefits

- › Reduced TCO with centralized storage, server, network and virtualization management
- › Improved security with native encryption
- › Reduced datacenter footprint and power by 6X

Nutanix delivers invisible infrastructure for next-generation enterprise computing, elevating IT to focus on the applications and services that power their business. The company’s software-driven Xtreme Computing Platform natively converges compute, virtualization and storage into a single solution to drive simplicity in the datacenter. Using Nutanix, customers benefit from predictable performance, linear scalability and cloud-like infrastructure consumption. Learn more at www.nutanix.com or follow us on [Twitter@nutanix](https://twitter.com/nutanix).

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