



IT as a Utility: The Compounding Benefits of Hyperconverged Infrastructure

by Jose Bellas

Frontline workers are the heroes of our time—and of all time, really. We see their dedication as they work long hours in varying conditions to provide the best possible care to their patients. What we don't see is the underlying IT infrastructure that makes that work possible. Today, technology has become another utility, like water or electricity. You can't survive without it, especially in the healthcare sector.

Based in the heart of Miami, [University Health Care](#) is a private medical provider dedicated to comprehensive, dependable care for our community. I joined [University Health Care](#) in 2013 as an IT director, then became CIO in 2017. We are acutely aware of our role within the organization: without IT, we can't function. We have our hands in pretty much everything, and anything technical falls within my wheelhouse.

Moving But Getting Nowhere

Back in 2013, University Health Care was at an impasse. From the minute I came through the door, I knew we could no longer grow with our existing infrastructure. We had a lot of disparate solutions from various vendors, including a bunch of different bare metal servers and appliances. That led to multiple rounds of the blame game: Whenever a problem arises, every vendor says the problem is due to another vendor's solution. It's very time-consuming and frustrating to work through that chaos and confusion, especially if a vendor has outsourced their support.

It's time-consuming and frustrating for an #IT team to work through the chaos and confusion of multiple vendors and solutions. #NutanixStories

Coming to work felt like walking underwater: constantly moving but not getting anywhere. Our telephony and networking problems, compounded on top of day-to-day IT issues, were a barrier to progress. Not only that, but it's demoralizing and exhausting for an IT team to deal with these issues day in and day out.

My mandate was to help alleviate these issues. I first identified the need to upgrade our server infrastructure and consolidate everything under one vendor. Having one point of contact instead of multiple would make the job easier, especially for a lean workforce. I thought the best way to accomplish this would be through hyperconverged infrastructure (HCI).

A Missed Chance Becomes a Great Opportunity

I started by looking at virtualization infrastructure and initially we settled on a traditional three-tier storage solution from HP and EMC. Soon after deployment, however, we realized that EMC could not deliver what we needed without substantial further investment. A few months after we adopted HP's EMC solution, we learned about [Nutanix](#), and I was devastated by the timing.

When you look at Nutanix as a holistic infrastructure, it just makes sense as the next logical step in the evolution of the data center. Several years earlier, I had begun to think about the flaws of putting all storage in one bucket, because that device then becomes the single point of failure. I thought to myself, why not spread the storage across multiple locations? I had zero idea how to make this a reality, but I knew someone would come up with the solution—it turned out to be Nutanix.

After discovering Nutanix, all I could think was how our lives would be different if we had that solution instead of three-tier EMC. If we had implemented Nutanix in 2013, we would have been one of their first customers. Instead, we kept our eye on the technology, having decided we would make the switch as soon as possible.

In just under three years, we exercised an early refresh, moving away from the traditional three-tier HP/EMC/VMware entirely and moving to Nutanix HCI with [Nutanix AHV](#). As it happened, being forced to wait until 2016 meant the AHV hypervisor had matured and was ready to take on all of our workloads.

Today, many Nutanix customers use [Nutanix Move](#) to help with migration. One click and boom, it's done. I even saw one migration that copied the entire virtual machine over and then allowed it to keep running on the old infrastructure. It's mind-blowing stuff—but none of that existed in 2016.

Instead, the Nutanix team stuck with us after hours, creating data stores, attaching ESX hosts, performing storage migrations, writing script commands, and then spinning up that VM in Nutanix. It's cumbersome compared to the migration process today, but the Nutanix team held our hand the entire way. We had all the VMS done within two months, and we're now running 80 VMs on Nutanix. We've seen the same level of support over the years as we did when we first became a customer.

Taking a Chance on a New Backup Solution

After we had Nutanix secured, a backup solution was next on our to-do list. Just a couple of years ago, AHV was a challenge for a lot of solutions providers that specialized in data protection. Price was also a barrier. We looked at Rubrik, but it would've cost more than we paid for our initial Nutanix cluster. It was like buying a car and spending twice as much money on the tires—I couldn't do it.

I went to [.NEXT](#) in 2017 seeking a data protection solution. Not only did I love what I saw from [HYCU](#), but I was also impressed that they made such a huge gamble in going all-in with Nutanix as their partner. That deep integration gave them a huge advantage over the competition as far as I was concerned. At this point, [HYCU](#) hadn't officially launched yet, but I knew they had potential, and the [HYCU](#) team was very eager to work with us.

That willingness from both sides resulted in some great collaboration early in our relationship. At the time, HYCU didn't yet have encryption for the data at rest, and I told them that as a medical provider, we needed to encrypt the data for HIPAA compliance. They got right to work on our request. Once that had been done, we planned a proof of concept for the end of August.

For those who don't know, the end of August happens to be smack in the middle of hurricane season here in Florida. That year, Hurricane Irma was barreling down on us at the end of August, and we were put under a hurricane warning. In the middle of this, we managed to get the entire infrastructure backed up, thanks to the dedication from HYCU's team.

Since then, both HYCU and Nutanix have evolved ten-fold. HYCU is hypervisor-agnostic and if used as part of your DR strategy, it can spin up the server in the cloud in case there's a problem with your on-prem infrastructure. Similarly, Nutanix matches us every step of the way.

University Health Care tends to grow by acquisition. A lot of the smaller organizations we acquire have less sophisticated on-prem electronic medical records or practice management solutions, so there is a fairly steady migration of these machines to Nutanix. They run on our infrastructure until we migrate them to our cloud solution. We also run our pharmacy and dental systems on Nutanix full time.

The Benefits of the Pay-as-You-Grow Model

Since we moved to Nutanix, we haven't looked back. Nutanix is the most cost-effective solution available because it doesn't force you to predict how big you will get. With other solutions, you might save money by not buying all the drives upfront, but you still have to buy the footprint to accommodate future growth, regardless of whether or not you realize it.

Nutanix, on the other hand, makes it easy to scale through their pay-as-you-grow model. Anytime you need more storage or compute, just buy another node, which will always be the latest-and-greatest version. You aren't stuck buying previous-generation hardware, and it eliminates the need for a forklift upgrade in five years' time.

To stay competitive, a lean workforce needs a solution that allows them to perform enterprise-level IT tasks in a fraction of the time and operational cost.

#NutanixStories

The other benefit to this pay-as-you-grow model is eliminating enormous maintenance windows and reducing overheads. Back in the days of the traditional three-tier architecture, if we wanted to upgrade the storage backend for any of our SQL appliances, for example, we had to schedule a lot of time to do so. Increasing storage also required the help of a subject matter expert, who would command more money to keep on staff.

All these factors compound to make the cost of doing business that much higher. Nutanix empowers my department to perform big, enterprise-level IT operations with a lean workforce at a fraction of the time and operational cost. This allows us to stay competitive.

Even though we have a lean workforce, we kept everyone on board throughout our move to Nutanix. IT people can be resistant to change, but to be honest, I didn't have to do much convincing. I just told them, "I want you to think outside the box instead of knowing that your box is going to break."

With hyperconverged infrastructure, #IT teams can think outside the box without worrying that the box is going to break. #HCI #NutanixStories

When people see what Nutanix can do, they get excited by the possibilities. Freeing up technicians' time meant they could do things they never did before, like going out into the field and meeting the people who depend on this infrastructure. Seeing how users interact with the technology gives them the opportunity to demonstrate how users can shave 20 seconds off a particular process. Twenty seconds might not sound like a lot, but it adds up over the course of a day. It's hard to put a monetary value on all the ways your work gets that much easier.

A Seamless Solution for Caregivers

I'm now looking into a few other Nutanix solutions to deploy. We've used [Prism Pro](#) since the beginning for management and operations, but I'd like to move to Prism Ultimate to access features like cost

analysis. We like the look of [Nutanix Frame](#), a state-of-the-art desktop-as-a-service solution, and we also want to explore [Xi Leap](#) for disaster recovery.

Nutanix is the foundation for the road that allows caregivers to do their jobs swiftly.

Patients don't care about the infrastructure; they just want good service. Nutanix might be invisible to that patient, but it's the lifeblood of all that we do here. Without it, we wouldn't be able to provide the robust, resilient services and get the patients the care they deserve.