# Doing More with Less: Kicking Downtime to the Curb with Nutanix

*by Devin Costa*

When you manage enterprise IT, you get used to being pulled in many different directions. One day, you're updating Microsoft Office applications on your CEO's laptop, and the next, you're sitting down with vendors and engineers to plan your new data center. Your inbox is overflowing, your smartphone never stops pinging, and you have to find a balance between responding to immediate emergencies and planning for the future.

Managing this complexity is difficult, but the best place to begin is to stay with your company, its needs, and its limitations.

## Member-Driven Power

Jones-Onslow Electric Membership Corporation (JOEMC) is a private, member-owned power cooperative headquartered in Jacksonville, North Carolina, with a district office in Sneads Ferry. Our company was founded in 1939 with a $284,000 loan to build 227 miles of line for 1,288 customers. Today, we operate 2,400 miles of line and serve 75,000 homes and businesses in Jones, Onslow, Pender, Duplin, Craven, and Lenoir counties. JOEMC is one of the fastest- growing and most innovative cooperatives in the country, and continues to embrace the neighbor-helping-neighbor philosophy as the foundation of customer service.

Hurricanes are a recurring reality in the eastern part of North Carolina and because we operate in so many coastal communities, we need robust physical and IT infrastructure to keep our customers connected. When disaster strikes, subscribers depend on our website for outage updates on their mobile devices.

Our teams depend on our data center and our WAN to power the apps that help us monitor our power grid, route and reroute electricity, and dispatch our work crews. We need capacity and redundancy that can weather any storm.

## Hitting the Wall with Three-Tiered Architecture

I've been with Jones-Onslow for more than five years and am currently the company's senior network administrator. When I started, there were only two of us working in IT, but the team has since

quadrupled to eight people, and we've made a lot of changes over those five years.

> **The first step to #hyperconverged infrastructure is moving away from a siloed approach to IT and building a team of generalists who can handle every aspect of network and data center management. #NutanixStories**

The biggest of these was our transition from traditional three-tiered architecture to hyperconverged infrastructure (HCI) in 2018. We'd hit a wall with three-tiered architecture. Our primary roadblock was dealing with multiple vendors and systems to see what was happening on our network. What's more, we're a small company, and Jacksonville has a population of 70,000 people. We don't have the budget or the talent pool to hire people specializing in one specific aspect of IT, or who have five or six certifications in the technologies we use.

To work within our means, we had to step away from a siloed approach to IT and build a team of generalists who can handle every aspect of network and data center management. The only way to achieve this was to rethink and rebuild our network and data centers from the ground up, and that meant moving to HCI.

## A Partner That Knows Our History

Collaboration is baked into Jones-Onslow's DNA and extends beyond the way we treat our members and employees. Collaboration also defines our relationships, such as the relationship with our primary IT partner, eGroup.

When eGroup recommends a solution, we know that they do so with the knowledge of where we've been and where we're going. Our eGroup rep, Daniel Navarro, is familiar with our existing equipment and our pain points, and makes suggestions based on our needs and our shared history. I always feel their team has our best interests in mind, and they help us evaluate different solutions so we can make an informed purchase tailored to our business and IT needs.

Another thing eGroup has in their favor: they are based in the Carolinas and understand how we do business here. Suppliers from other parts of the country don't always understand the role we occupy in the community or how weather impacts our operations. It helps to work with a local partner who can distill the essence of technology and adapt it to our regional needs.

They help us with infrastructure management, support, and deployments, and we knew they'd be able to advise us well on our HCI journey.

## Standout Features Make for Easy Decision-Making

When we made the decision to move to HCI in 2018, our data center was architected on Dell EMC VNX technology that was reaching end-of-life status. We looked at renewing our infrastructure with the latest version of that platform, but it was hideously expensive. The search was on for an alternative solution.

We knew we needed a solution scaled to the needs of a small cooperative utility that serves a coastal clientele. We already knew about the benefits of HCI and the options from various vendors, including Dell, Cisco, and HPE, but we had to take a step back and allow all the different manufacturers to have an opportunity to share their value. After going through the features and benefits of multiple HCI platforms with Daniel from eGroup, Nutanix emerged as a leader in the HCI space within the context of our operations. From there, the decision was pretty straightforward: we chose to go with Nutanix.

Our decision rested heavily on two features. The first is hardware independence. Nutanix manufactures high-performance HCI appliances, but we can also run their software on the platform of our choosing. That gives us flexibility when it comes to integrations with our existing systems and anything we might choose in the future. The second feature that stood out for us was its single-pane-of-glass interface. We can see and manage our entire network and our data center hardware from one place. That saves us a lot of time when troubleshooting problems.

Nutanix also simplifies data center and network administration. I don't need separate employees to handle storage, compute, and network architecture. In a couple of hours, somebody with a general IT background can learn how to configure, troubleshoot, backup, and restore a file, a server, or an entire data center using the Nutanix dashboard-based interface.

This means that I can train new hires in less time. Our entire IT team has become familiar with Nutanix, and any one of us can spring into action when necessary, giving me peace of mind that if anything unexpected happens, anyone can handle the issue.

### Rack, Stack, and Go

We began deployment by replacing our Dell EMC bare-metal hardware with Cisco UCS C240-M5SX blade servers. My team racked, stacked, and cabled six hosts at both our Jacksonville and Sneads Ferry locations, and then eGroup's Dave Strum came in to help us migrate our servers to this new infrastructure. We'd booked him for five days, but we spent the first two days smoothing out some hiccups with our new Cisco gear. We needn't have worried, though; Dave migrated all our old servers to the new infrastructure in the remaining three days.

### Painless Data Security and Backup

We are also using Nutanix Prism Central and Prism Element to manage both of our data centers from a single location. We have separate instances of Prism Central for Jacksonville and Sneads Ferry and can

go back and forth to monitor our infrastructure's health.

Prism Central is intuitive and granular. It allows us to drill down from a bird's eye view to a single component. We can view our CPU utilization and monitor our memory and storage. We can also create and move VMs and manage our virtual infrastructure in Prism Element without launching vSphere. Prism streamlines the process by doing all of this using a single interface.

And then there's automation. Nutanix Prism is like having a repairman at your beck and call 24/7. One day, I got an email that read, "Your replacement drive has shipped and will be arriving within two days." I didn't know that we needed a new drive, let alone ordered one. But Nutanix had detected the disc failure, rerouted traffic to a backup drive, and placed an order for a warranty replacement with Cisco.

We'd encountered situations like this with our Dell EMC VNX hardware, so I booked an engineer to replace the drive. He came in, swapped out the old drive for the new one, and that was that. I was stunned; I had never experienced such a seamless replacement process. Unconvinced, I popped into Prism Central and watched Nutanix restore the drive to its previous state automatically, without needing any further attention. I became a believer.

> **When dealing with the unpredictable nature of hurricanes, there's no such thing as too much backup. #NutanixStories**

We also use Nutanix Files to monitor and optimize our storage and file distribution. We can look for storage irregularities and anomalies and have an audit trail that allows us to locate and recover deleted or renamed files.

On top of mirroring our primary Jacksonville data center at our Sneads Ferry DR site, we have also integrated Rubrik's cloud-based solution for seamless hot-swappable backups in the event of a catastrophic failure that takes out both of these facilities. To further safeguard our data, we repurposed some of our old Dell hardware to create an on-prem archive of our off-site Rubrik backup.

It may sound like overkill, but when you're dealing with a yearly hurricane season, you can't be too careful.

### Enabling Remote Work for a Non-Remote Company

Like everyone else, Jones-Onslow has had to adjust to the realities of the global pandemic. As a utility, we were not set up for remote work, but once again, Dave Strum from eGroup came to the rescue. He suggested that we spin up some VDIs for our team, and that's what we did.

We cloned virtual desktops in our Nutanix environment and gave our employees laptops with VPN software and VMware Horizon clients. We saved a lot of time by not having to configure individual machines. As a bonus, there's no risk of losing data or having a security breach because somebody lost their laptop or visited a website that installed malware on their system.

We also used Nutanix to create VDIs for our customer service reps working from home on desktops. Again, I worked with Dave to set up their call software on VDIs to replicate the call center experience. It took two weeks to migrate our administrative offices and our call center to a work-from-home setup. We are grateful for our frontline repair crews and technicians who still go out in the field to maintain the grid, but our office teams are sheltering in place to help curb the spread of COVID-19.

### The Capacity to Keep Growing

Nutanix has given JOEMC the tools we need to grow our business and improve our quality of service. My IT team no longer has to scramble to find and correct infrastructure issues. All we have to do is log into Prism, where everything is laid out for us in easy-to-understand visual dashboards. What's more, we have also started using the built-in capacity planner to build out our infrastructure without adding a dedicated network architect to our team.

> **The cost of adding more capacity outweighs the cost of having insufficient resources down the line. #NutanixStories**

We recently had to replace some of our core systems but had underestimated our needs. When we plugged our requirements into Nutanix Capacity Planner, we discovered we needed to add more compute and storage or risk overwhelming our existing infrastructure within 30 days. We ended up spending more on new equipment, but it's well worth it to avoid the costs of insufficient capacity.

Downtime is no longer an issue. We have on-prem hot-swappable backups at our secondary data center in Sneads Ferry, and a cloud-based hot site in Rubrik. Upgrades are seamless. We can move everything over to our new Nutanix nodes and then decommission our deprecated hardware with a single click.

Nutanix has helped Jones-Onslow streamline our IT operations. It has made my life easier and empowered my team to do more with less. Two years after our switch to HCI, I am still discovering its potential. We've excited to begin exploring the built-in AHV hypervisor, and I can't wait to do even more by expanding my knowledge of the platform. With Nutanix and the fine folks at eGroup, we've got everything we need.