

Supporting Remote Sites—and Remote Workers—with Nutanix HCI

by Simon Loiselle

It's 2020, and as businesses around the world have been forced to shutter their offices and ask employees to stay at home, many of us have had to change the way we work. Remote work was once the exception but has now become the rule for those who can telecommute. This is not only for their own safety, but to help enforce social distancing and protect workers whose jobs cannot be done remotely.

While telepresence tools are readily available, many businesses lack the IT infrastructure to ensure that the bulk of their workforce can access internal resources while working offsite. Organizations that rely on traditional data centre architecture are especially vulnerable. Companies that haven't adopted software-defined infrastructure, virtual machines, and cloud-based solutions have been caught off guard and are having difficulty pivoting to this new reality.

Bridging the Urban/Rural IT Gap

[Agropur](#) is a 3,161-member dairy co-operative headquartered in Quebec, Canada. Our products are sold across North America, and [our brands](#) include Natrel, Iögo, Sealtest, and our world-renowned Oka cheese. We employ some 10,000 people at our 50-plus plants, labs, offices, and distribution centres in Canada and the United States.

Companies that haven't adopted software-defined infrastructure, virtual machines, and cloud-based solutions are having difficulty pivoting to the new reality of work. #NutanixStories

As a solutions architect at Agropur, I help define and deploy IT infrastructure and solutions at our facilities all over North America. I'm based at our headquarters in the Montreal suburb of St-Hubert, but our operations are extremely decentralized. Because of this, one of my biggest challenges is supporting the number of rural sites we operate.

We're in the dairy business, and so production, distribution, and warehousing are done at plants and facilities outside urban areas. That often means we have fewer resources at our disposal. In some instances, we have limited internet access and reduced bandwidth. In other instances, we don't have IT staff on-site and must dispatch teams from urban offices to these remote areas.

Another issue—especially at our smaller plants—is the lack of room to grow. A processing facility in the American Midwest may have a server room the size of a broom closet. Space constraints can make it impossible to add new storage or computing capacity to meet increased demand, especially when using traditional data centre architecture.

Coming Home to Nutanix

About four years ago, Agropur embarked on an infrastructure modernization project. At the time, our facilities in Canada and the United States were running VMware compute nodes on traditional servers and hardware-based switches. Every time we needed to upgrade, we had to rip out the equipment at every site and start from scratch.

When you multiply the time, the effort, and the expense of replacing and provisioning hardware at more than 50 locations—and factor in the travel from site to site—you can understand why we needed a simplified, centralized solution. We talked to one of our value-added resellers (VARs) in Montreal and arranged demos—along with loaners—of some of the newest technologies on the market.

To keep costs down, we started by looking at HPE 3PAR flash-based storage. These solid-state drive arrays took up less space and reduced our I/O bottlenecks, but only represented a partial solution. We needed more.

Next, we looked at two hyperconverged infrastructure (HCI) solutions: Cisco HyperFlex and [Nutanix](#). Cisco offers an end-to-end solution that includes everything from network infrastructure to videoconference hardware, but their approach to hyperconvergence felt underdeveloped and overly complicated.

When we tried Nutanix, it felt like a homecoming. The platform was easy to use and instantly familiar. We could boot up our existing VMware tools on top of it and start provisioning servers right away. We had all the benefits of hyperconvergence with next-to-no learning curve, and were up and running with a simple deployment in less than a day.

To facilitate our decision, Nutanix sent a systems engineer to our St-Hubert headquarters to help us assess the platform and configure our storage and compute needs. Their people then worked with our VAR to ensure a successful transition.

Deploying Nutanix Company-Wide

It took six months to set up and deploy this new environment. We migrated our EPM and our virtual servers, shut down our old data centre, and powered up Nutanix. There was no downtime at all. When people came to work in the morning, everything worked. We knew there were differences under the hood and all our apps were faster, but there was no future shock. Instead, Nutanix just felt like a better version of our previous platform.

Need VDIs? There's a platform for that. #NutanixStories

Once we'd set up our primary data centre in Quebec, we started to re-equip our plants and offices across North America. We provided every remote site with a three-node Nutanix Block

running VMware Horizon, two Cisco 3850 switches, and a UPS.

Each of these satellite data centres is managed from St-Hubert using vSphere ROBO. We can provision virtual desktop infrastructure and manage it from this single location, and no longer have to dispatch IT teams to remote areas to perform simple configuration and maintenance.

Another key benefit of Nutanix is the acceleration of server provisioning. With traditional infrastructure, it took two weeks or more to configure and deploy a physical server. Now, we can spin up a virtual machine in less than a day, be it at our headquarters or at one of our remote facilities.

Doubling Up Our Primary Data Centre

The data centre at our headquarters is the beating heart of Agropur's IT infrastructure and is now home to a pair of Nutanix clusters. The first of these is our primary production environment, while the second cluster serves as a backup and has plenty of extra compute and storage power.

If our primary system fails, we can flip a switch and go to our recovery site in no time. We couldn't have done this with our old IBM SAN because it didn't perform real-time backups. Even if the capacity had existed, it would have been unaffordable to add a second storage array. However, Nutanix's hyperconverged hardware costs less than half of our IBM storage solution, and so we can double-up on our equipment and mirror our primary data centre.

Nutanix has also simplified tech support. In the past, we had to open one ticket with VMware if we had a virtual machine issue; another with Brocade for a problem with our IBM SAN; and a third to resolve a glitch with one of our HPE servers. Today, we can route all our support tickets to Nutanix. We have one maintenance contract instead of three, which saves us time and money.

Plus, the people at the other end know how all the pieces fit together. If you've ever had to work with two separate vendors to resolve an issue, you recognize the value of single touchpoint tech support.

Better Backups and Cloud-Based Infrastructure

In the four years since we first deployed Nutanix, we have gone from 400 to 1,200 virtual servers, but we've budgeted for expansion. While our core architecture remains the same, we added Nutanix blades and VMware licenses and will continue to increase capacity as needed.

As a next step, we may be reviewing our backup solution. We are currently using Commvault, which is overly complicated, lacks automation features, and needs extra hardware to run. We had to purchase a separate NVMe drive to speed it up so we could back up our database overnight.

Nutanix has partnered with Veeam to provide a seamless and purpose-built backup solution that works natively within the company's [Acropolis Hypervisor](#). We can manage backups from the same pane of glass we use to manage our entire Nutanix environment. We can recover servers and files with a push of a button without having to use a separate application.

We are also looking at using more cloud-based infrastructure, even though we'll never get rid of on-prem hardware for some mission-critical applications. We are already invested in PaaS, IaaS, and SaaS, but can become more efficient by moving more functionalities offsite.

Remote Work in Times of Crisis

Nutanix has also greatly enhanced Agropur's capacity for remote work. Telecommuting has always been vital to our corporate culture due to the location and limited IT resources at many of our sites. In such cases, it made more sense to allow office staff to stay at home. Employees could use their laptops or home computers to log in to our network and access fully-loaded virtual desktop environment with all the software they need to accomplish their tasks remotely.

The world can change overnight. Can your infrastructure handle the changes? #NutanixStories

We had hundreds of workers accessing our smaller sites from home at any given moment, but over the past few months, Agropur has added 500 employees to our pool of remote workers. Each of these staff members needs login credentials, apps, and a VDI at one of our data centres. To provision them with the tools they need to work from home, we are using the extra capacity of the backup Nutanix cluster at our headquarters.

We hadn't planned for this scenario, but changing regulations and social distancing protocols have changed the way we work. We're happy we have the extra storage and compute to handle the influx of new users while we continue to operate at full capacity in all other areas.

There are tremendous benefits to remote work for employees and employers. Workers can better balance their professional and family obligations while saving on commuting time and expenses. Employers can benefit by saving on equipment, energy, and real estate costs. Companies that failed to consider these advantages and were hesitant to try remote work for fear of lost productivity have been forced to consider its feasibility during the pandemic. At Agropur, we're simply expanding the scope of one of our best practices.

Navigating a Changing World

If I could reduce Nutanix to a single function, I would say that it simplifies the management of our IT infrastructure. We can manage our primary and satellite data centres, provision virtual servers and desktops, and add remote users from a single window. We also have a bird's-eye view of our storage and compute capacity and can allocate existing resources or add new ones

as needed.

The world can change overnight, without much warning. By focusing on the needs of our company and our workers, we were able to prepare ourselves for the future, even if we didn't know exactly what that future would bring. Nutanix has given Agropur the tools we need to adapt and to best serve our customers and our employees, regardless of whatever comes next.