



Agropur Ingredients Improves Performance and Reduces Downtime by Deploying VMware Virtual SAN Solution

Agropur Ingredients operates a network of plants to make cheese and other ingredients for food-industry customers. Each plant operates its own data center to ensure that cheese and ingredient making continue around the clock. When an aging and out-of-capacity physical storage solution began to slow operations and hinder system maintenance, the company turned to the VMware Virtual SAN™ solution. The result: more capacity for less cost and improved system and application performance.

Agropur Ingredients started out in 1989 as Main Street Ingredients—serving the food industry first as a broker and later as a purveyor of high-quality ingredients. Over the years, the La Crosse, Wisconsin-based company expanded its products and services, extended its brand lines, and invested heavily in research and development. All of this caught the eye of a large Canadian dairy operation, Agropur Cooperative, which acquired the ingredients maker in 2011 and rebranded it as Agropur Ingredients in 2013.

The Challenge

With more than 8,000 employees, Agropur's U.S. operations focus on the cheese, beverage, and ingredient sectors and are located primarily in the Midwest. The La Crosse facility is home to the company's ingredient blend and contract manufacturing operations. It is also where the IT team first deployed VMware solutions to support highly automated, round-the-clock processes to manage cheese making and ingredient blending.

To ensure continuous operations across all of its plants, the company must depend on localized infrastructures. Caleb Holmstrom, network administrator at Agropur Ingredients, explains why: "Everyone is obsessed with the cloud these days, but it doesn't work for us. We have cheese plants—like the one in Luxemburg, Wisconsin—in outlying areas where you're lucky to get a 1 megabit Internet connection. We also have processes that absolutely cannot shut down, because if they do, we end up dumping milk—and money—down the drain. For these reasons, we simply cannot afford to be impacted by something like an Internet outage."

To keep its operations up and running, the company relies on data centers in each of its plants and a server environment that's 90 percent virtualized. Until a few years ago, however, it was still using direct-attached storage—including two Dell PowerEdge R710 servers with a Dell PowerVault MD1000 direct-attached storage array between them at its La Crosse headquarters—and it was quickly running out of capacity. With performance slowing, storage space at a premium, and system backup and restores becoming increasingly cumbersome, Holmstrom knew it was time to look into a newer, better approach to storage.

INDUSTRY

Dairy and food processing

LOCATION

La Crosse, Wisconsin

KEY CHALLENGES

- Replace Agropur Ingredients' aging and out-of-capacity storage solution
- Improve application performance and reduce downtime
- Reduce system maintenance and free up server team to work on other business priorities

SOLUTION

When Agropur Ingredients' traditional storage solution reached its limit, the company turned to VMware Virtual SAN storage to increase capacity and improve application performance to ensure that round-the-clock cheese and ingredient making could continue.

BUSINESS BENEFITS

- Gained more storage capacity for significantly lower cost
- Eliminated costly downtime and processing disruptions—ensuring further cost savings
- Eased system maintenance for distributed operating plants
- Experienced "no-glitch" boost in application performance for business-critical apps

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Caleb Holmstrom
Network Administrator,
Agropur Ingredients

The Solution

Although Agropur Ingredients looked at storage solutions from various SAN and converged infrastructure vendors, it didn't take long to settle on the VMware Virtual SAN solution as the best choice. Having already virtualized Agropur Ingredients' server environment with the VMware vSphere® solution, Holmstrom and colleagues knew that the Virtual SAN storage product would integrate seamlessly with the current environment, offer significant cost savings over a storage appliance, and deliver the redundancy the company requires.

“We're not huge fans of buying really big and overtly expensive disk solutions,” says Holmstrom. “I don't like the idea of spinning up a server to run another server. With VMware Virtual SAN, we get what I call a ‘belt with suspenders,’ which means we could lose a server and be completely fine. In contrast, if a storage device decides to have a bad day, you're out of luck unless you have another storage appliance, which is a cost we can't justify.”

Once the decision was made, deploying the Virtual SAN solution was a breeze. “The transition to Virtual SAN could not have been simpler,” says Holmstrom. “We had a brand-new instance of our VMware vCenter Server, and we were able to just attach our old infrastructure to the new and start migrating from there. We completed the entire process within an hour.”

With Virtual SAN storage up and running at three of the company's cheese plants and its La Crosse facility, Agropur's U.S.-based operations has three 200GB solid-state drives on each of its four Supermicro SuperStorage server hosts. And each of these hosts has 15 TB of storage capacity—leaving a lot of room for expansion. As for networking, each host has two 10Gb connections that feed into Hewlett-Packard 5500 H1 switches. And each of these switches has two power supplies to provide additional redundancy.

Today, just about all of Agropur Ingredients' core business applications are run from the Virtual SAN environment—including Microsoft Exchange (which was gobbling up an enormous amount of space in the old environment), Microsoft Dynamics NAV (used for enterprise resource planning), and the custom application that pulls from the company's SQL database to power its intranet.

Business Benefits

A year and a half after deploying the VMware Virtual SAN solution, Holmstrom and his Agropur colleagues couldn't be happier. “In the past, we had no ability to add storage or scale to meet our growing needs,” he says. “Today with the Virtual SAN, I can add more disk on the fly without even thinking about it, and memory upgrades have become a breeze. I did one recently, and I didn't have to plan anything. In fact, I was able to hang out with my family that night rather than come in to the plant to bring down the system. For a network administrator, it doesn't get much better than that.”

With gains in capacity have come gains in performance as well. Take, for example, the company's enterprise resource planning (ERP) software: In the days prior to the Virtual SAN deployment, the system would slow dramatically when employees created various ERP reports. Now, says Holmstrom, “a weekly report summarizing shipping and receiving doesn't even cause a glitch in performance, whereas in the past, the system was basically nonresponsive while that report was running.”

Not surprisingly, the Virtual SAN solution has also resulted in huge cost savings for Agropur—and not just because of its low sticker price. Explains Holmstrom, “We're making 650-pound blocks of cheese in these plants, so any time automation fails and processing ceases, we lose an enormous amount of money. For this reason, we can't afford any downtime. With Virtual SAN, we basically don't have any, since we can update firmware and hosts on the fly. Today, if a remote desktop server goes down, I can spin up a new server in 10 minutes or less. And if, God forbid, we do have to reboot, it's simply a matter of hitting a button, and we're up again in 2 seconds—a far cry from the situation with physical hosts.”

VMWARE FOOTPRINT

- VMware Virtual SAN
- VMware vSphere
- VMware vRealize™ Operations Insight™
- VMware vCenter Server™

APPLICATIONS VIRTUALIZED

- Microsoft Exchange
- Microsoft Dynamics NAV
- ERP applications
- SQL databases
- Custom applications, including corporate intranet

PLATFORM

- Supermicro SuperStorage servers
- Hewlett-Packard 5500 HI switches

Looking Ahead

Holmstrom and colleagues working out of the Agropur Ingredients' La Crosse facility are steadily deploying VMware Virtual SAN storage at Agropur's remaining U.S. cheese plants. In time, the company is planning to implement the solution in its Canadian plants as well. Meanwhile, Holmstrom continues to discover new capabilities of the hyperconverged storage environment and is also eager to reap the benefits of the recently deployed VMware vRealize™ Operations Insight™ unified management solution—particularly the advanced analytics that will enable Agropur to monitor the health of its infrastructure. Says Holmstrom, “VMware is very aggressive about improving their products and adding new features; we just want to keep pace with our own environment and take advantage of as many of these capabilities as possible.”

