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Industry

Agriculture

Strategic Priorities

- Anywhere Workspace

VMware footprint

- VMware® Carbon Black Cloud™
- VMware Edge Network Intelligence™
- VMware Horizon®
- VMware SD-WAN™
- VMware vSphere®
- VMware Workspace ONE® Unified Endpoint Management™ Essentials

Nature Fresh Farms Uses Technology to Improve Farm-to-Fork Time

Greenhouse farming is an increasingly digital enterprise, with everything from sowing to shipping enriched by a bounty of data. To grow tastier products at scale, Canada's Nature Fresh Farms employs a suite of VMware solutions to deliver a networked, anywhere workspace IT environment that enables secure distributed work and harnesses technology to improve the yield and flavor of its produce.

Lending nature a helping hand

A family-owned and operated company, Nature Fresh Farms is one of the largest vertically integrated leaders in greenhouse-grown produce in North America, which means the company builds its greenhouses, grows its produce and markets produce of partner growers.

Understanding the pivotal role the company plays in helping people nourish themselves, Nature Fresh Farms is committed to advancing greenhouse innovation and sustainable food security to provide healthy, quality, environmentally friendly produce.

Using technology to optimize every square meter of its operations, Nature Fresh Farms sets the green standard for sustainable, climate-controlled indoor farming. The company's modern greenhouses employ various innovative agricultural methods, from lit crop solutions to vertical growing, precision irrigation, water recycling and CO₂ recapture and fertilization, and even beneficial insects—bumbees, ladybugs and lacewings—to replace pesticides. The company also minimizes its carbon footprint by siting its greenhouses as close as possible to retail points of sale.

“With these technologies, we have improved our farm-to-fork time and given the customer a pepper that tastes better and lasts longer. We want to push the envelope in terms of how technology can improve agriculture and be seen as a business that values the impact of technology.”

Keith Bradley, Vice President of IT and Security, Nature Fresh Farms



Harvesting a bounty of data

How can information technology yield tastier produce? “We want to provide the customer the best tasting peppers, tomatoes, cucumbers and berries as quickly as possible,” says Keith Bradley, vice president of IT and security, Nature Fresh Farms. “We use technology to know exactly where and when that produce is picked, when it hits the box inside our facility, and how quickly we can get it to your store. From the time we pick it from the vine to the time we get it to the store, it must be quick.”

Intelligent greenhouse growing demands an extraordinary array of solutions, from vertical farming infrastructure to green heating solutions to water recycling systems. And the infrastructure solutions extend well beyond the physical plant. At Nature Fresh Farms, smart climate-controlled farming yields—and consumes—a bumper crop of data created by more than 1.7 million plants. To keep this vast growing estate healthy and thriving, the company digitized every part of its operations, from cultivation and production to sales and logistics.

Aside from IT solutions one would expect to encounter in any business operation—from customer relationship management to sales to finance—Nature Fresh Farms also infuses its growing side with digital technology, from Internet of things (IoT) sensors used to manage the microclimate of plants in the greenhouse, to photographic sensors that monitor the condition of produce gathered by robotic harvesters, to bar code sensors that track the location of every tomato, pepper or cucumber journeying from garden to grocer.

Cultivating operational consistency

The company uses technology to help growers grow better. “Technology allows our growers to spend more time with the plants. Robots do an increasing amount of manual labor,” says Bradley.

With every part of the business infused with intelligence designed to produce a better product, Nature Fresh Farms needed to streamline its complex digital landscape, and in turn, centralize operational management. With greenhouses located in different places—across different countries—the company needed to run all its facilities as one.

“We wanted operational consistency to get the produce to the customer as consistently as possible across every plant, every row, every greenhouse and every farm that we grow,” says Bradley. “We always look at how we can increase yield per meter squared. On average, across the variety of products we sell, we usually get 10 times the volume compared to a conventional field farmer. We can grow that tomato until it’s 50 feet long, then side-plant it and have another start right behind it. It allows us to grow 12 months a year for our tomato crop. That gives us multiple picks.”

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Growing a unified estate

“We’re a large company with multiple facilities, and we want to drive efficiencies,” says Bradley. To streamline its operations, Nature Fresh Farms needed to ensure each location could share its business and operational processes. Bradley recognized that the company would need a more flexible, robust and secure IT infrastructure. “Above all, we want our approach to be scalable and cookie-cutter.”



Nature Fresh Farms turned to VMware Professional Services to help it gain visibility into its network operations, deliver robust protection for valuable data moving across the business, and launch a virtual workspace environment to give employees the power to work from any location. A suite of solutions helped the company unify operations, turning growers, pickers and packers into collaborators. This allowed Nature Fresh Farms to create a consistent style, one consistent way of growing a bell pepper, and one consistent way of planting, picking, packaging and shipping it. “Instead of one facility doing it one way, another a different way, we were able to make everything interchangeable at every point in our process,” Bradley says.

Nature Fresh Farms started with a single data center, and instead of single silos of operation, the company gained visibility across all its locations and operations. “We started with Dell VxRail, which was core to our infrastructure,” says Bradley. “It allowed us to expand and grow as we needed to, and we found it gave us a redundancy we never had before.”

From there, the company expanded into VMware SD-WAN. “That really started to break down the borders,” says Bradley. Nature Fresh Farms could move from inefficient email and other information sharing to allow data to flow across all its sites, integrating Leamington, Ontario with Delta, Ohio and the company’s sites in Mexico.

Nature Fresh Farms adopted VMware Horizon to enable growers to log in securely and access and control greenhouse systems from anywhere. Remote access became especially important during the COVID-19 pandemic, enabling employees to work safely and effectively. And VMware Workspace ONE UEM gave truck drivers the capability to process contactless loading and delivery, keeping Nature Fresh Farms employees safe and logistics more efficient. “The drivers pull up, sign in, send the text that they’re here, we load, and they’re on their way,” says Bradley. For security, Nature Fresh Farms uses VMware Carbon Black Endpoint and VMware Edge Network Intelligence to protect end users and endpoints every moment of the day.

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Improving farm-to-fork time

Ever the agricultural innovator, Nature Fresh Farms defines the competitive edge for intelligent, connected greenhouse growing. “With these technologies, we have improved our farm-to-fork time and given the customer a pepper that tastes better and lasts longer,” says Bradley. “We want to push the envelope in terms of how technology can improve agriculture and be seen as a business that values the impact of technology.”