

Cultivating the future of agriculture at the edge

Nature Fresh Farms



Agriculture | North America



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Keith Bradley

Vice President of Information Technology,
Nature Fresh Farms

Business needs

- Implement a modernized edge strategy to manage and act upon an increasing amount of real-time data
- Utilize AI and analytics to improve grower productivity, efficiency and overall yields
- Automate time-consuming tasks so growers can focus on growing and delivering the best products to market

Business results

- Increased grower’s productivity from managing 12 acres to 100 acres with virtualization and automation
- Cut upload times of plant images from 6-12 hours to within an hour
- Improved reaction times and supported expansion by running core greenhouse workloads on VxRail at the edge

Solutions at a glance

- [Dell VxRail](#)

Innovating fresh produce

Nature Fresh Farms is a family-owned and managed non-GMO greenhouse company. With close to 200 acres in Leamington, Ontario and Delta, Ohio, the company grows a variety of different bell peppers, tomatoes and cucumbers all year round.

Beginning in 1999, Nature Fresh Farms sought to build a state-of-the-art greenhouse operation that was both sustainable and innovative.

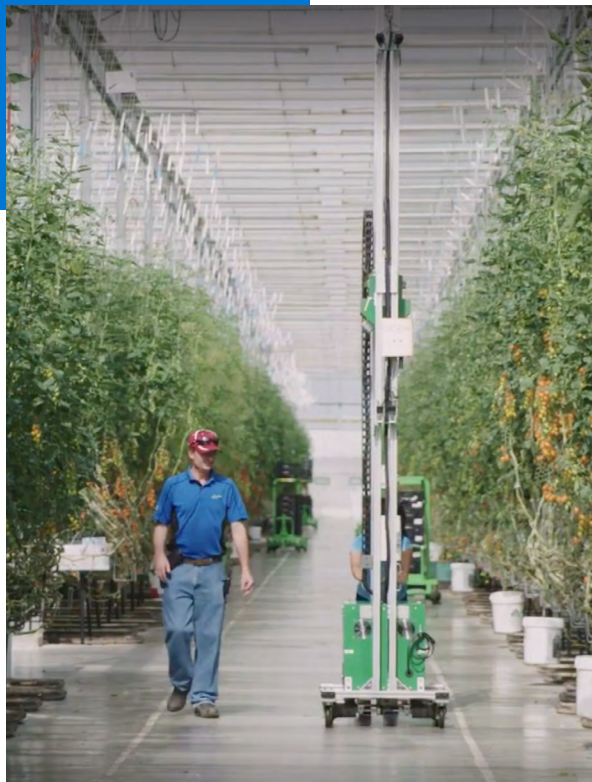
Keith Bradley, Vice President of Information Technology at Nature Fresh Farms, explains: “The inherent problem with most greenhouses is that they’re in in the middle of a field, where the internet is not readily available. So cloud solutions aren’t a viable option for us.”

It was this sentiment that led the company to seek out an effective edge solution to support growth, expansion and continue to deliver the quality, fresh produce its customers deserve.

Taking greenhouses to the edge

Nature Fresh Farms uses computer vision cameras and sensors to provide its growers with insights on plant growth and greenhouse conditions. To support greenhouse and distribution center expansion, the company required a powerful edge solution that could effectively manage large quantities of video and unstructured data.

Working in agriculture, time is of the essence. The agility to respond quickly to changes in growing conditions are critical for overall yield and ultimately, profits. With time as a factor, a scalable, low-latency and high-performance edge solution that could generate real-time insights on plants and growing conditions was crucial to support Nature Fresh Farms’ growth as a business. Bradley explains: “Our edge strategy is really getting the information as close as possible to the plants, so that everything’s done in real-time.”



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Real-time
analytics,
immediate
decisions

The solution behind the next generation of farming

After engaging with Dell Technologies, Nature Fresh Farms upgraded its existing data environment to Dell VxRail. This solution's flexibility to handle AI, automate data-centric workloads and generate real-time insights, stood out as the perfect match for the business's edge requirements.

By automating tasks with VxRail, Nature Fresh Farms has been able to drive new levels of grower productivity and efficiency. In the past, a single grower would be responsible for 12 acres of greenhouse, but now that same grower can now manage close to 100 acres. Bradley remarks: "We run all our core workloads on VxRail. It's made us a lot quicker to expand and react to things. It just continues to make my whole team happier each day."

Turning growers into data scientists

The company combines AI with computer visualization to manage different robotics used in the greenhouse. These automated robots handle everything from bio-scouting, pollination to picking and evaluating the produce.

Nature Fresh Farms saw significant performance advantages after processing its expanding data flows at the edge from multiple sensors and cameras. This provided real-time analytics for tracking temperatures, light, hourly growth, irrigation, moisture levels and power usage — enabling growers to make immediate decisions.

Previously, it would take between 6 to 12 hours for produce images to upload. Now, it's almost instantaneous, with growers able to access all the information they need in under an hour.

As labor is one of the company's largest costs, it required a solution that could improve operational and labor efficiencies in all aspects of the business. With the modernized edge strategy, it allows one grower to be able to control and analyze a larger area.

Being a non-GMO greenhouse, sustainability is a priority for Nature Fresh Farms. To aid its sustainability efforts, the company required an edge solution that could support AI and automation in temperature control, power management and water irrigation efficiency.



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With VxRail’s intrinsic security, Nature Fresh Farms’ growers and IT teams have the peace of mind knowing that all its growing data is secure at the edge.

Nature Fresh Farms’ success with VxRail has led the company to replicate the same model for all its greenhouses across North America.

Sowing the seeds of future growth

Moving forward, Nature Fresh Farms plans to further advance its edge strategy and continue to provide its customers with the freshest possible produce.

Bradley comments: “In the future, we’re looking at using 5G to monitor our trucks in real time and allowing that information to pass to our edge compute right away”. This will enable the company to track temperatures within the vans, harness real-time insights and understand the quality of its produce by the time it arrives in the customers’ hands.

By partnering with Dell Technologies, Nature Fresh Farms now has the edge technology to evolve its greenhouses into the future and scale up or down whenever it needs to.

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