

Florida School District Centralizes Its Data Center with a DataON & Microsoft Azure Stack HCI Solution

Lake County School District increases QoS and eliminates expensive service and maintenance contracts



The Challenge



- Replace its traditional SAN infrastructure with a new solution that utilizes industry-standard servers
- Eliminate expensive annual service and maintenance contracts
- Improving QoS for SIS, HR management and ERP application workloads
- Reducing backup times and Active Directory server syncs
- Finding a solution that would not negatively impact its existing Hyper-V workloads

The Solution



- DataON solution for Microsoft Azure Stack HCI
- DataON S2D-5212, optimized for performance and capacity
- Three-tier hybrid storage with Intel® NVMe flash cache, SSDs and HDDs
- DataON MUST monitoring and management software tool with Windows Admin Center

Company Overview

Lake County School District is a K-12 school district in the metro Orlando, Florida area, with 59 learning sites and over 41,000 students. It is the 19th largest public school district in the state of Florida. The district employs approximately 6,000 people.

IT Challenge: Replace two aging SANs with a hyper-converged solution, centralize its data center, increase quality of service (QoS) to meet increased application workloads, and eliminate expensive storage vendor maintenance contracts

Lake County School District's 8Gb Fibre Channel (FC) SAN infrastructure, consisting of a two OEM blade system and storage node solutions spread across two data centers, was over six years old and ready for a refresh. It needed a solution that could handle the increasing student data demands, and improve the quality of service (QoS) for several applications, including HR management, enterprise resource planning (ERP), and its student information services (SIS)—an online system that allows teachers and administrators to record, manage and distribute essential student information such as grades, attendance, records, and homework assignments.

It was also becoming more time-consuming to synchronize Lake County School District's Active Directory to its online cloud-based educational services. Backup times were increasingly sluggish, too.

For school districts and universities, budget is a key factor in the decision-making process. Lake County School District was locked into an expensive and mandatory OEM service and maintenance contract for its SANs. It did not want to be forced into another contract of this type with a new infrastructure vendor. Nor did they want to be required to purchase expensive OEM-only replacement components rather than affordable commodity-based hardware.

David Parisoe, Digital Content Systems Architect, Lake County School District and Robert Yasko, Network Administrator, Lake County School District also planned to gradually phase out their onsite servers located in many of the schools and centralize them in their primary data centers.

Lake County School District's goals in updating its infrastructure included:

- Replace its traditional SAN infrastructure with a new solution that utilizes industry-standard servers
- Eliminate expensive annual service and maintenance contracts
- Improving QoS for SIS, HR management and ERP application workloads
- Reducing backup times and Active Directory server syncs
- Finding a solution that would not negatively impact its existing Hyper-V workloads

The Solution: A DataON 4-node solution for Microsoft Azure Stack HCI with Windows Server 2016 and Storage Spaces Direct

Lake County School District' distributor suggested a Nutanix hyper-converged infrastructure (HCI) solution. However, Yasko and Parisoe were concerned about adding complexity to their Hyper-V workloads and they had received negative feedback from other school districts about Nutanix's data access speeds.

They started to investigate a Microsoft solution since they were already using Hyper-V. In addition to already having a Microsoft environment, they already had Windows Server Datacenter licenses and receive heavy educational discounts for those licenses. They also liked the feature set of Microsoft's solutions in comparison to Nutanix.

The Result



- Saved money on commodity-based hardware now and on future upgrade and replacement components
- Eliminated expensive vendor service and maintenance contracts and avoided additional annual software fees
- Reduced core count by half, considerably reducing Microsoft licensing fees
- Improved QoS for SIS, HR management and ERP application workloads
- Decreased backups from two hours to thirty-two minutes and server syncing from Active Directory (AD) to the cloud from forty to seven minutes
- Easily created a two click software-defined network (SDN)
- Did not complicate existing Hyper-V deployments
- Gradually eliminated on-site school servers and centralizing on new DataON solution

Yasko and Parisoe reached out to the large server OEMs but they had limited Microsoft-based offerings and tried to steer them away from Microsoft. They remembered DataON from presentations they had seen online from Microsoft Ignite and went to the DataON website.

"We found their customer story with Cherokee County School District. It was similar in scope to what we wanted to do so we called them to hear directly about their experience with DataON and Windows Server Storage Spaces Direct. We asked a lot of questions and they gave glowing reviews."

With DataON, Lake County School District was able to get the turnkey Microsoft HCI solution it needed, purchasing a six-node DataON S2D-5212 solution with Intel® NVMe flash cache, Intel® SSDs and Western Digital HDDs for its first cluster and a similarly configured four-node DataON S2D-5212 solution for its other data center.

"We liked the DataON hardware build because it's all industry-standard parts with Intel processors and motherboards. If we need to replace a defective part, we won't have to pay a premium for a replacement."

*Robert Yasko, Network Administrator,
Lake County School District*

"With our previous SANs," Yasko added, "we needed to buy an annual service and maintenance contract and our OEM required us to buy a certified replacement parts, regardless of the age of the original purchase. We liked DataON's hardware build because it's all industry-standard parts with Intel processors and motherboards. If we need to replace a defective part, we won't have to pay a premium for a replacement."

The Results

Lake County School District has seen considerable performance increases after deploying the DataON and Microsoft HCI.

"It's definitely faster than what we had before. Backup jobs that previously took two hours now take thirty-two minutes," Parisoe said. "Server syncing from Active Directory to the cloud went from forty minutes to seven minutes, because of the newer processors. In fact, the increased processor speeds have saved us money. Our SANs were underpowered, requiring more cores. But with the new DataON infrastructure, we've reduced the core count by more than half and saved several thousand dollars in software licensing. In addition, we no longer have to pay an OEM service contract and saved a lot in annual fees."

"With the new DataON infrastructure, we've reduced the core count by more than half and saved several thousand dollars in software licensing. In addition, we no longer have to pay an OEM service contract and saved a lot in annual fees."

*David Parisoe, Digital Content Systems Architect,
Lake County School District*

Lake County School District also simplified its data center management with DataON's MUST monitoring and management tool and Microsoft's Windows Admin Center.

"With MUST," Yasko said, "we can drill down and figure out what's going with our clusters. We like its ability to notify our team by e-mail when something goes wrong in the cluster, improving our response time to fix and resolve any issues." In addition, the Lake County School District team was easily able to use Window Admin Center to establish a software-defined network using VLAN and their existing Cisco networking hardware in a simplified two-click process.

With its new DataON and Microsoft solution, Lake County School District is systematically eliminating servers at each school location and centralizing its infrastructure. Currently, its primary cluster runs seventy-three VMs, including Lake County School District's SIS using 96Gb memory and 1TB of storage backup.



"We've never had this kind of support from a vendor. Other vendors wouldn't touch supporting a Microsoft solution but DataON really took care of us, and we love the deployment scripts that they provided. We're thankful for the solution they have, and it's provided us not only significant cost savings but also peace of mind."

David Parisoe
Digital Content System Architect
Lake County Schools

Deployment Tips from Lake County School District

1. Make sure to use DataON MUST and enable the alert function to quickly alert IT teams when issues arise.
2. Drives are not hot-swappable in Storage Spaces Direct. Retire the drive first before removing it.
3. Go for it! The DataON and Microsoft solution provides great performance and is cost effective.

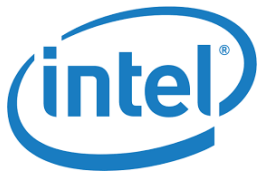
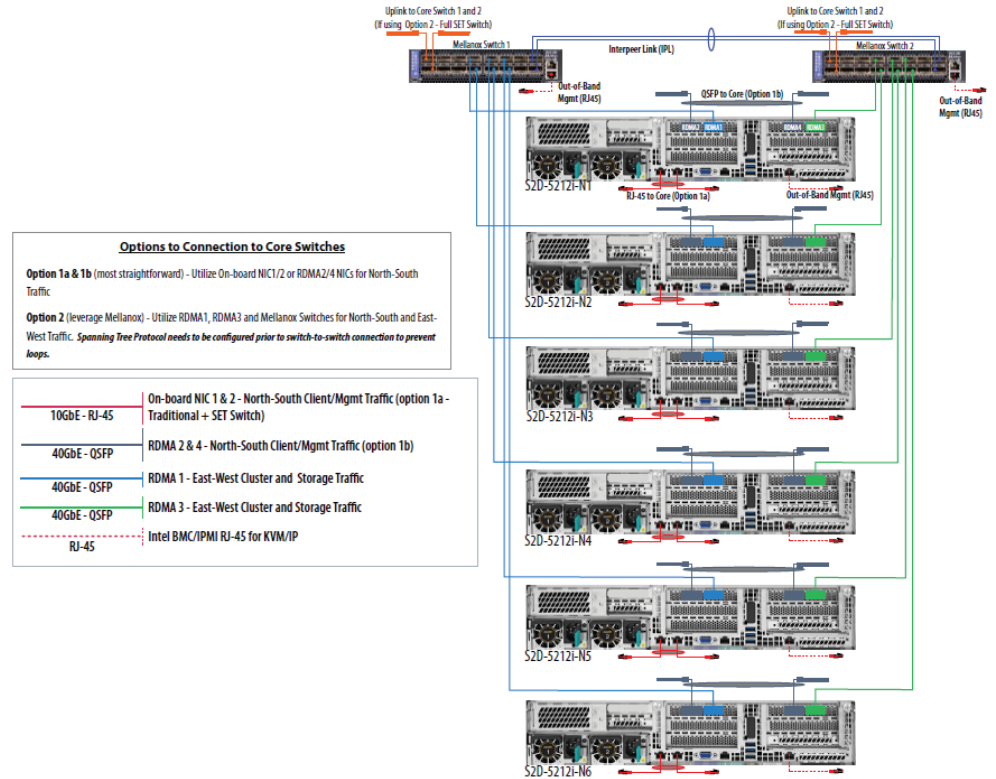
"We've never had this kind of support from a vendor," said Parisoe. "Other vendors wouldn't touch supporting a Microsoft solution but DataON really took care of us, and we love the deployment scripts that they provided. We're thankful for the solution they have, and it's provided us not only significant cost savings but also peace of mind."

Deployment Tips

Yasko and Parisoe offered a few tips to others looking to deploy solutions for Azure Stack HCI. The two reiterated how much DataON MUST has helped them. "Make sure you use DataON MUST and enable the alert function. It's a great tool," they said.

"Another thing. Don't pull out a drive. Drives in a SAN are hot-swappable. Drives in Storage Spaces Direct are not. Make sure you retire the drive in Storage Spaces Direct first."

Lastly, Yasko and Parisoe said, "Go for it!" Our DataON and Microsoft solution has provided great performance. It's really cost effective and we like the all-Microsoft environment. PowerShell makes it super easy."



www.dataonstorage.com

sales@dataonstorage.com

1.714.441.8820

Copyright © 2019 DataON. All Rights Reserved. Specifications may change without notice. DataON is not responsible for photographic or typographical errors. DataON, the DataON logo, MUST, and the MUST logo are trademarks of DataON in the United States and certain other countries. Other company, product, or services names may be trademarks or service marks of others.

About DataON

DataON is the industry-leading provider of solutions for Microsoft Azure Stack HCI, and hyper-converged infrastructure and storage systems optimized for Microsoft Windows Server environments. It has been named to CIO Review's '20 Most Promising Microsoft Solution Providers 2018.' Our company is focused on customers who have made the "Microsoft choice" to deploy Microsoft applications, virtualization, data protection, and hybrid cloud services. Our enterprise-level solutions, delivered as a complete, turnkey experience, are designed to provide the highest level of performance, manageability, and security offered.