Leading Automobile Marketing Services Provider Trades in its SAN for a New Hyper-Converged Infrastructure

APC chooses Storage Spaces Direct to power compute & storage

The Challenge

- Replace its SAN with a Storage Spaces Direct HCI solution
- Increase performance and capacity
- Update Windows Server 2008 R2 and 2012 R2 with Windows Server 2016
- Maintain its Cisco networking infrastructure

The Solution

- Windows Server 2016 with Storage Spaces Direct
- DataON six-node S2D-5212i with NVMe, SSD and HDD three-tier storage

The Result

- Increased performance and storage capacity
- Integrated Mellanox RDMA networking with its original Cisco networking infrastructure
- Received comprehensive customer support from DataON for successful deployment of its DataON S2D server nodes

Company Overview

Automotive Product Consultants (APC) Integrated Services Group, equipped with sophisticated data modeling, analytics and extensive product marketing experience, creates highly targeted campaigns for companies in the automotive industry. It also operates a full-service mail facility and call center, employing one-hundred and twenty-five people in Chesterfield, MO and Orange County, CA.

IT Challenge: Replace an aging SAN running Windows Server 2008 R2 and 2012 R2 with a Windows Server 2016 Storage Spaces Direct hyper-converged infrastructure solution

Running seven-year-old Dell PowerEdge servers and EMC VNX5300 SAN storage, APC needed to refresh its data center. Shopping for a new SAN, Matt Lehmann, IT Manager, APC, said, "Initially my mentality was to get the newer, bigger, better version of what we have now. But I decided that I didn't want to stick with a disaggregated model because it would be hard to expand storage, be more complex to manage, and expensive to purchase." He had previously researched the new trend towards hyper-converged infrastructure (HCI) for a few years and was interested in the technology. Early on he felt it was not tested enough for him to feel comfortable purchasing and using it as the company's primary storage. He said, "I like to be on the cutting edge, not the bleeding edge."

APC's goals in updating its infrastructure included:

- Replacing its aging SAN with a hyper-converged solution
- Increasing performance and storage capacity
- Finding a vendor it could trust
- Keeping its Cisco networking infrastructure

The Solution: DataON S2D-5212 solution supporting Microsoft Azure Stack HCI

As Lehman continued to monitor the adoption of HCI, he saw that other IT professionals were having positive experiences with Window Server 2016 Storage Spaces Direct and thought that perhaps HCI was more accepted and mainstream now. He liked that Storage Spaces Direct was already included in his Windows Server Datacenter license, so he wouldn't need to pay extra for Storage Spaces Direct. In addition, he was already a Hyper-V user, so the Storage Spaces Direct interface would be similar.

When Microsoft introduced Azure Stack HCI solutions, this gave Lehmann more confidence in his decision to choose a Microsoft solution. Featuring the same Hyper-V based software-defined compute, storage, and networking as Azure Stack, Azure Stack HCI solutions provide customers with a tested and validated on-premises HCI solution that enables them to extend quickly and easily to Azure as business and IT needs change.

On Microsoft's website, Reddit forums and in blogs, Lehmann saw DataON mentioned consistently as Storage Spaces Direct authorities. But still, he didn't have enough confidence to choose DataON for a vendor.

"I'm always a bit skeptical." Lehmann said, "If I choose the wrong technology or the wrong vendor, that would negatively impact the company and the services we provide to our customers. While visiting APC's Orange County, CA facility, he decided to visit DataON to meet with its technical team.

"Vendors are always going to tell you everything will work perfectly, but that's usually not what actually happens. By talking with the technical team, I was able to work through some of the questions I had about Storage Spaces Direct and DataON. Over the course of several conversations, it became apparent to me that DataON had the expertise and commitment to making sure APC would have a successful deployment."

Deployment Tips from Matt Lehmann

1. Learn PowerShell for ease in deployment and managing your cluster
2. Understand your networking
3. Use VM Fleet to benchmark changes in configuration and settings and compare against DataON's factory benchmarks

Lehmann and DataON worked together on a design build, selecting the DataON S2D-5212i configured with three-tiered storage. He wanted to keep his existing Cisco networking equipment, but accepted DataON's recommendations to use Mellanox switches and adapters for RDMA networking. However, he wanted to keep his existing Cisco network fabric outside the hyper-converged infrastructure.

For most customers, DataON provides turnkey, out-of-the-box solutions, with customized deployment scripts for quick and simple deployment. Lehmann said, "The included scripts were good, but I wanted to dig deeper and better understand what they did. This allowed me to create my own customized scripts, run different scenarios, and test them with VM Fleet. DataON was very helpful answering questions and resolving issues I had with my scripts."

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Matt Lehmann, IT Manager, APC

The Results

After the new system deployed, Lehmann said, "We haven't had any problems. There's a lot more RAM, nodes and CPU per core than there was in our old 2011-era infrastructure. Performance is great." He has migrated most of his applications, except the SQL servers. Currently, he has forty-five virtual machines (VMs), which include file share, print, DNS, Linux (for load balancing), Microsoft Exchange, in-house application utility servers, and Windows 7. He also has allocated 7TB of storage for DVR media. "The Storage Spaces Direct and DataON HCI solution has performed well for us and it's been easy to solve problems with DataON's support team. Their level of support has been much better than what I've gotten from other vendors," Lehmann said.
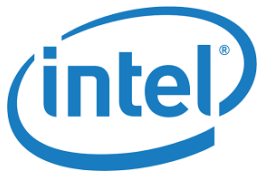
Through his experiences, Lehmann offered a few tips for other IT professionals who are thinking about choosing a Storage Spaces Direct for their hyper-converged infrastructure. "They should know PowerShell and understand the scripts they are running," he said. "Eighty percent of the networking configurations are done using PowerShell."

"It's important to understand implementation and performance in your system," he continued. "Storage Spaces Direct adopters should learn how to use VM Fleet and benchmark performance before and after changing configurations and settings and compare them to DataON's original benchmarks."

Lehmann is in the process of setting up DataON MUST with Windows Admin Center, to help him monitor and manage his new Storage Spaces Direct cluster. He is looking to deploy Windows Server 2019 in the future and is excited about its deduplication feature, and some of the new performance increases. He also plans to add more DataON Kepler two-node hyper-converged appliances in the next year.

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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.