Leading Backup, Recovery, and Data Center Management Provider Boosts Customer Service with Storage Spaces Direct

Commvault consolidates its infrastructure and increases storage capacity and performance

The Challenge

- Reduce virtualization build times, which could take over two hours
- Expand storage capacity
- Consolidate existing virtualization and storage infrastructure

The Solution

- Highly scalable Windows Server 2016 Storage Spaces Direct hyper-converged infrastructure
- DataON S2D series with three-tiered hybrid storage for capacity and performance optimized for performance & cost

The Result

- Consolidated infrastructure with Storage Spaces Direct solution
- Increased performance and storage capacity
- Reduced virtualization build times, enabling the technical support team to help more customers and improve customer satisfaction

Company Overview

Commvault is a global leader in enterprise backup, recovery, and data management across any hybrid environment. In the 20 years since, Commvault has experienced tremendous growth, pioneered numerous industry-shaping innovations; its data management solution has been recognized as a leader in the Gartner Magic Quadrant for Data Center Backup and Recovery Software. Founded in 1996, Commvault has over 2,500 employees and is headquartered in Tinton Falls, New Jersey.

IT Challenge: Consolidate its existing customer support system into a hyper-converged infrastructure, expand storage capacity, and improve virtualization performance with Windows Server 2016 Storage Spaces Direct

As the leader in Gartner's Magic Quadrant for enterprise backup and recovery solutions for seven straight years, customer support is paramount for Commvault. Analyzing customer issues in an accelerated, but secure manner is critical to Commvault's support success. To view and troubleshoot sensitive data, the Customer Support team creates isolated sandbox environments for each customer. When the problem is solved, these environments are automatically destroyed. As demand grew, as many as 100 new environments were being created each day. With that demand, the system's old Dell EqualLogic SAN degraded in performance. Creation times would take upwards of two hours – something that was not acceptable. Adding spinning disks wouldn't help and EqualLogic flash solutions were just too expensive.

To solve the problem, Commvault engaged DataON to inquire about Storage Spaces Direct, a new feature still being tested in Windows Server 2016 technical previews. Ernie Costa, Virtualization Engineer at Commvault, said "Our unique requirements seemed to fit in with what Storage Spaces Direct was advertising – incredible read and write speeds with a ton of deep cold storage." DataON discussed the scalability, resiliency, one-time affordable licensing fees, and cost-savings that a hyper-converged infrastructure could provide compared to the benefits of a traditional SAN. The features were appealing and Commvault was interested.

Commvault goals in updating its customer support infrastructure included:

- Increasing performance, reducing virtualization load times, and improving overall customer satisfaction
- Expanding storage capacity
- Consolidating existing virtualization and storage infrastructure

The Solution: DataON S2D series hyper-converged infrastructure with Windows Server 2016 Storage Spaces Direct

Commvault was drawn to Storage Spaces Direct and the hyper-converged solution because of its scalability and cost. Commvault investigated potential vendors, but didn't feel the others had DataON's same level of dedicated Microsoft and Storage Spaces Direct expertise.

Commvault chose DataON and purchased a DataON S2D series, four-node, three-tiered solution consisting of NVMe flash, solid-state drives (SSDs), and spinning disks. This allowed Costa to configure an environment capable of hosting over 2000 virtual machines (VMs), each available to handle Commvault's support team's customer cases and sandbox test environments.

Costa, interested in the new Storage Spaces Direct technology, began additional testing, looking to push the limits and stability. He and his team discovered a few, previously unknown bugs within the emerging technology. DataON and Microsoft worked closely with Costa to resolve the issues and ultimately came away impressed with Microsoft and Storage Spaces Direct.

Deployment Tips from Ernie Costa

1. Know your networking before choosing between iWARP and RoCE.
2. Choose the right ratio of SSDs to HDDs for your environment and budget.
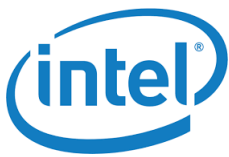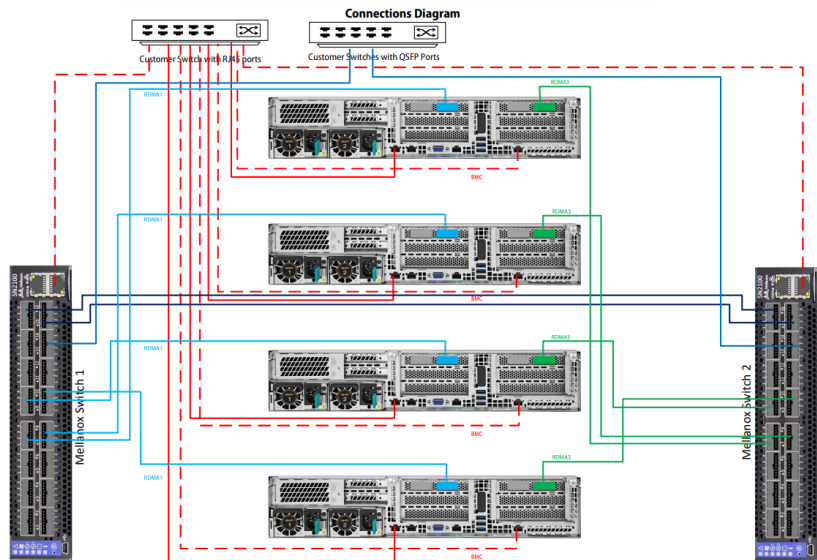3. Learn as much as you can about Storage Spaces Direct.

Now a big advocate of Storage Spaces Direct, Commvault purchased an additional four nodes from DataON to handle additional scale. Storage Spaces Direct made it easy to connect the new nodes to Commvault's existing hyper-converged infrastructure via the RDMA networking already in place.

The Results

With the Microsoft and DataON hyper-converged solution, Commvault was able to reduce customer virtualization build time from nearly two hours to fifteen minutes. Costa said, "I received a call from one of our Customer Support engineers, and he thanked me and my team for saving them so much time. However, one thing happened that I hadn't anticipated. With the quicker creation times, daily VM usage increased by about 150%. But that's a good thing – anything to make our employees' and customers' lives better is a win for us!"

Costa offered a few suggestions for designing a hyper-converged solution. "With Windows Server 2016, networking can be an issue. I recommend using iWARP, not RoCE. Unless you have a dedicated network engineer, RoCE can be difficult to manage," he said. "It's also important to consider how much and what type of storage to use. Don't be cheap and use spinning disks only. Go with as much SSD and NVMe as you can." Costa concluded, "I recommend that potential Storage Spaces Direct users do their research and learn as much as possible about the features and what potential pitfalls to avoid. I think it's a good idea to join the S2D Slack channel and ask and discuss with industry professionals, vendors, like DataON, Microsoft MVPs, and other IT professionals who have deployed Storage Spaces Direct about the latest developments, known bugs, etc. I've found it helpful and offered help and tips to many other members."

After the positive experience with DataON and Storage Space Direct, Commvault plans to upgrade its existing clusters to Windows Server 2019 once it fully tested and vetted on the hardware. He looks forward to many of the new Windows Server 2019 features, especially data deduplication (now compatible with ReFS), which optimizes free space on a volume, removes duplicated data, and increases performance.

Connections Diagram

Customer Switches with RJ45 ports   Customer Switches with QSFP Ports

Mellanox Switch 1   Mellanox Switch 2

About DataON

DataON™ is the leader in Microsoft® Windows Server software-defined solutions. 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. DataON is a division of Area Electronics Systems, Inc.