

## Fiberglass Manufacturer Enhances Data Center Efficiency

Molded Fiber Glass Companies implements a flexible, efficient, and secure hyper-converged infrastructure



### The Challenge



- Refresh SAN and NAS infrastructure with a cost-effective highly available, high performance solution
- Eliminate IT bottlenecks, increase IOPS, and ensure 24/7 uptimes
- Overhaul IT infrastructure security and backup strategy to protect against ransomware attacks
- Implement a flexible, highly scalable solution that could be repurposed easily to fit changing IT demands
- Simplify on-premises and cloud management
- Find a vendor offering world class support

### Organization

Molded Fiber Glass Companies (MFG) is a leader in the composites industry with one of the largest full-service networks of custom molding and assembly facilities in North America. With headquarters outside of Cleveland, OH, it has fourteen locations across the United States and employs over 2000 people.



### Challenge

MFG planned to refresh its SAN and NAS infrastructure in its primary data center and manufacturing facilities. To prevent ransomware attacks, recover quickly without downtime, and meet today's challenging security requirements. MFG needed to update its backup strategy.

The solution needed to be highly available and resilient to hardware failures and could ensure 24/7 uptimes. MFG also wanted to eliminate network bottlenecks, increase IOPS and overall application performance.

The new infrastructure had to be agile and easily be scaled up, scaled out and repurposed, depending on the various workload demands of each of its fourteen facilities.

For MFG, overall IT infrastructure efficiency was important. It needed to easily integrate its on-premises and Azure cloud management into one location and ensure that IT admins could manage both, as it currently required a separate on-premises and cloud specialist. Because of the scale, MFG was cost-conscious but did not want to sacrifice performance or cut corners. It also demanded 24/7 support for both the infrastructure hardware and software.

## The Solution



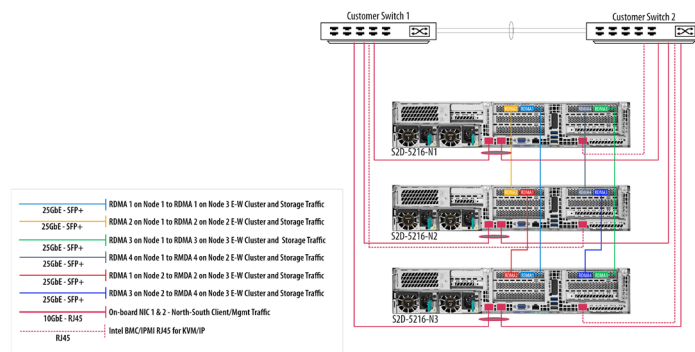
- **Primary data center:** DataON HCI-208 and DataON HCI-224 three and four-node clusters with all-NVMe Intel® P4510 flash, each attached to S2D-5212 converged hybrid storage
- **Manufacturing facilities:** DataON K2N-208 two-nodes solutions equipped with all-NVMe Intel® P4510 flash, each attached to S2D-5212 converged hybrid storage
- NVIDIA Mellanox ConnectX 25GbE networking and NVIDIA Mellanox Spectrum switches
- Veeam Backup and Replication
- Microsoft Windows Admin Center
- Microsoft Azure Services
- DataON MUST

## Solution

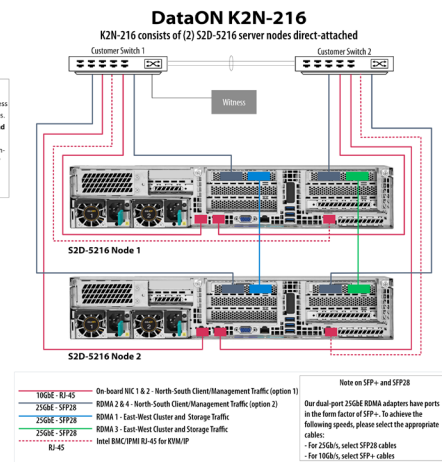
As veteran Microsoft MVPs, John O'Neill Sr., CTO, MFG and Dave Kawula, Principal Consultant, TriCon Elite Consulting, knew what they wanted. Both had worked with DataON in the past and implemented many Microsoft Azure Stack HCI hyper-converged infrastructures. DataON has an excellent reputation in the Microsoft community and is known to be one of the go-to Azure Stack HCI providers. For O'Neill and Kawula, DataON wasn't just a hardware provider, it offered a complete Microsoft validated Azure Stack HCI solution with the expertise to deliver responsive 24/7 support for both the software and hardware. Because DataON uses industry-standard hardware, they could get the best solution without having to pay expensive OEM hardware taxes. This helped them meet their budget.

For its primary data center, O'Neill and Kawula selected DataON HCI-208 and DataON HCI-216 three and four-node all-NVMe flash solutions each with an attached converged scale-out DataON S2D-5212 hybrid storage server node using Storage Spaces. These clusters would run its enterprise resource planning (ERP), finance, customer software, security, virtualization, general applications, and backup.

**DataON K3N-216**  
K3N-216 consists of (3) S2D-5216 server nodes direct-attached



MFG uses Veeam Backup and Replication, a robust backup and disaster recovery application. Veeam empowers administrators backing up the virtualization layer as well as the physical machine to on-premises backup and the cloud. Veeam helped provide an additional layer of ransomware protection for MFG and made it easy to quickly restore lost data and get back up and running in the event of a catastrophic event.



O'Neill and Kawula implemented a secure fabric design using Azure Stack HCI in which they could create a restrictive layer of provisioning underneath the production domain, making it extremely difficult for a ransomware attack to spread throughout its infrastructure.



## The Result



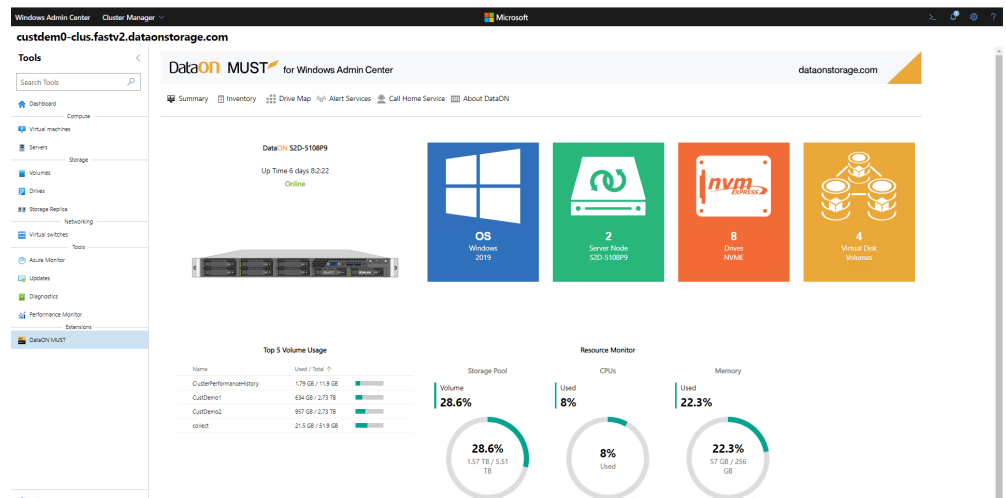
- Refreshed SAN and NAS infrastructure with a cost-effective highly available, high performance Azure Stack HCI solution
- Eliminated IT bottlenecks, increased IOPS and backup times, and ensured 24/7 uptimes
- Implemented a secure infrastructure and backup strategy that offered ransomware protection enabling MFG to quickly restore operations in minutes rather than weeks
- Provided the agility to repurpose Azure Stack HCI infrastructure and “lift and shift” from four to two-node solutions when need be
- Simplified on-premises and cloud management, enabling admins to manage both on-premises and cloud deployments instead of using specialists for each
- Found a vendor offering 24/7 world class support for both software and hardware

The two also setup a non-connected fabric design between its new on-premises DataON infrastructure and Microsoft Azure, furthering security. If needed, they could easily bring Azure-based virtual machine (VM) templates to better microsegment tasks for individuals. Using Azure Privileged Identity Management (PIM), MFG could issue privileges expiring within a set allotted time.

In MFG’s manufacturing facilities, O’Neill and Kawula deployed DataON K2N-208 all-flash NVMe solutions each with an attached converged scale-out DataON S2D-5212 hybrid storage server node using Storage Spaces for backup. Each K2N “Kepler” solution could be directly attached eliminating the need for a switch, reducing costs, and simplifying deployments. They also air-gapped each manufacturing facility DataON K2N solution from the primary data center, ensuring that manufacturing would continue uninterrupted if there was a ransomware attack or any kind of disruption of service at the primary data center.

Taking advantage of Azure Stack HCI’s native high availability was accomplished by configuring three-way mirroring in their three- and four-node solutions, which enabled the deployments to safely tolerate at least two hardware problems (drive or server) at a time. In its two-node solutions, the team configured two-way mirroring, which provided fault tolerance for one drive or server failure. With a converged storage backup attached to each cluster, MFG was able to further increase resiliency and better protect against ransomware attacks.

With Azure Stack HCI’s OS-integrated Azure services, O’Neill and Kawula used Windows Admin Center, a management tool enabling administrators to manage Azure, Windows servers, clusters, hyper-converged infrastructure, virtualization, security and more in one centralized location. It used DataON MUST (Management, Utility Software Tool), which provides a high level of infrastructure visibility, monitoring, management, and alerts for Azure Stack HCI and Windows Server environments



MFG configured all its deployments with NVIDIA Mellanox ConnectX 25Gb/s RDMA adapters and NVIDIA Mellanox Spectrum switches.

## Results

MFG replaced its legacy SAN and NAS deployments in its fourteen locations consolidating their infrastructure with a cost-efficient and flexible Azure Stack HCI ecosystem. With all-NVMe flash and hybrid storage, MFG increased IOPS and improved performance across all applications, including backup and restore times. NVIDIA Mellanox RDMA networking improved throughput and eliminated previous bottlenecks it encountered with its legacy systems.

## Tips

- Choose Azure Stack HCI for a highly scalable, secure solution, in which the components can easily be repurposed for other applications.
- Find a partner that supports Azure Stack HCI software and hardware. DataON is one of the few vendors supporting both and offering 24-hour support.

Because Microsoft invests more on R&D, it can deliver Azure Stack HCI solutions with better security than any other hyper-converged offering. This gave MFG peace of mind. Along with the secure fabric design and Veeam Backup and Replication, MFG's data is now better protected against ransomware attacks. If attacked, MFG can rebuild and restore their data without weeks of downtime or disruption, getting back up and running quickly.

Azure Stack HCI gave MFG the high-availability and resiliency it needed with two and three-way mirroring. O'Neill said, "Microsoft Azure Stack HCI is the first real platform that has the same level of resiliency as hardware. It requires very little maintenance. If there is an issue with Azure Stack HCI, it 'heals itself.'" MFG can quickly repurpose Azure Stack HCI nodes to "lift and shift" clusters from the main data center when needed. Because of the modular Azure Stack HCI design, MFG can easily break down a four-node cluster into a two-node and deploy it in any one of its manufacturing facilities.

With Windows Admin Center and integrated Azure Services, Azure Stack HCI simplified both on-premises and public cloud management for the MFG team. This enables an MFG administrator to manage both on-premises and cloud infrastructures without requiring an additional cloud specialist.

As a third-party extension in Windows Admin Center, if there were any issues with the cluster(s) or hardware failures, DataON MUST delivered automated alerts to the MFG admin team helping them increase response and resolution times.

## Tips

When asked to provide suggestions to IT professionals, O'Neill and Kawula recommended Azure Stack HCI because it's a highly scalable, secure solution. The components can easily be repurposed for other scenarios. It's important to find a partner like DataON that supports both the hardware and software offering twenty-four-hour support as few vendors do this.



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## About DataON

DataON is a hybrid cloud computing company focused on delivering Microsoft Azure Stack HCI, on-premises storage systems, intelligent edge appliances, and cloud-based Microsoft Azure Services. Our company is helping enterprises and customers who have made the "Microsoft choice" to modernize their IT with Microsoft applications, virtualizations, and data protection through a complete and turnkey experience. With over 850 HCI clusters and 150PB of storage deployed, DataON enterprise-level solutions are designed to provide the highest level of performance, manageability, and security offered. DataON is a Microsoft Gold Partner, Microsoft Cloud Service Provider (CSP), and an Intel Platinum Partner.