

EVGA® – The First in Gaming Graphics The First to Windows Server 2016

DataON™ deploy next generation Hyper-Converged Cluster Platform with Intel® All-Flash NVMe SSD achieving **2.4 Million IOPs**



Customer Background

EVGA® (www.evga.com), based in a Brea, CA, is the #1 hardware provider of high end NVIDIA® video cards and Intel based motherboards for gaming and video enthusiasts. EVGA® built their business on the philosophy of intelligent innovation, market knowledge, and real time operations. This lead EVGA® to be the #1 NVIDIA authorized partner in channel sales for North America and the United Kingdom. EVGA® differentiates their solutions by offering the best technology, 24/7 tech support, a 90 day setup program for gamers, and video connoisseurs.

IT Challenge – Deploy Hyper-Converged Infrastructure, Deliver High Availability Cluster with more VMs, Remove expensive SAN Storage

As with many companies, EVGA's growth and success had begun to out-strip the performance of their IT infrastructure. With EVGA's international growth and dedication to 24/7 support, it became apparent that a new structure was needed to keep up with growth, provide continuous availability to files with simple migration and deploy at a reasonable cost. Their current IT deployment consists of VMware ESXi and NetApp SAN running Windows services and applications. EVGA® highlighted these key goals for their new IT infrastructure:

- Meet the performance demand of their users and IT enterprise applications
- Leverage their existing investments in the Windows Server Platform
- Reduce VMWare software licensing cost and maintenance cost with proprietary SAN
- Migrate to SQL 2016, Exchange, and DNS servers to a HCI platform
- Simplify IT Infrastructure with ease of deployment and migration
- Provide data level protection and future storage replication capabilities

Why Did EVGA® chose DataON™, Microsoft, and Intel for their next generation Hyper-Converged Cluster Platform Deployment?

EVGA® understand the importance of working with industry leaders such as Microsoft, Intel, and DataON. DataON™ provides a Windows Server 2016 certified Hyper-Converged Cluster Appliance (HCCA) platform with high performance Intel® NVMe SSD to meet EVGA's need:

- DataON's S2D-3000 HCCA platform provides a high availability, easy to deploy system, certified for Windows Server 2016, reducing deployment time and configuration.
- Windows Server 2016 with Software Defined Storage (SDS) delivers feature rich cloud scale storage and economic built on industry standard hardware, reducing EVGA® dependence on VMWare.
- With Storage Spaces Direct (S2D) on Windows Server 2016, EVGA® can build highly available and scalable HA storage cluster systems using local storage, allowing for the retirement of their SAN.
- Intel's latest enterprise NVMe SSD offering empowers high IO performance for EVGA's IOP intensive enterprise applications.

The Challenge



- Lower CAPX and OPEX Cost
- Reduce Infrastructure Complexity
- Achieve Application Performance with leading technologies
- Leverage the Cloud

The Solution



- DataON™ S2D-3110, Windows Server 2016 Hyper-Converged Cluster Platform
- Microsoft Windows Server 2016 Storage Spaces Direct (S2D)
- Intel® Xeon® Processor E5-2600 V4 Family
- Intel® Solid State Drive Data Center Family

The Result



- Reduce space, power, and other costs from 26U to 7U
- Eliminate expensive VMWare licensing costs moving to Hyper-V with more VMs
- Simplify deployment with end-to-end Windows compute, networking and storage stack
- Meeting application performance requirements with all flash NVMe based SSD

EVGA Quote:

"Building on our mission to use the latest technology, EVGA continues to invest in its IT Data infrastructure using faster hardware with the latest Microsoft software. These new Hyper-Converged systems offer additional features and functions and most importantly increase reliability at an affordable cost," said **Joe Darwin, Chief Branding Officer for EVGA Corporation**, "Working with companies like Microsoft, Intel and DataON, gives our IT team a good foundation to provide a solid infrastructure for future growth planning."

DataON S2D-3110 Windows Server 2016 Hyper-Converged Cluster

The new S2D-3000 family of Hyper-Converged Cluster Appliances™ (HCCA) are built and certified by Microsoft to seamlessly deploy with Microsoft's Windows 2016. The DataON™ S2D-3000 family provides both performance optimized solutions and capacity focused appliances to meet the needs of Microsoft Windows services and enterprise applications.

The S2D-3110 HCCA is built to optimize the full stack of Microsoft S2D in the Hyper-Converged platform. From Scale-Out File Server (SoFS) to Software Storage Bus to Storage and Networking hardware, this appliance runs on the cluster Shared Volumes Resilient file system (ReFS) and uses high performance NVMe SSDs with SMB 3.0 networking to maximize performance and IOPS.

Windows Server 2016 Storage Space Direct (S2D)

Storage Spaces Direct (S2D) is designed to help create continuously available scale-out clustered storage systems. S2D adds support for new classes of storage devices, such as NVDIMM, SATA and NVMe disk devices. S2D has added Multi-Resilient Virtual Disks (MVRD), a virtual disk which is mirrored and erasure coded (parity), and Real-Time Tiering (ReFS), creating next generation resiliency and performance.

Built On Intel® Technologies- Processor and NVMe SSD

The Intel® Xeon® processor E5-2600 v4 family extends the data center class storage features of previous generations. Intel adds updated features to items supported by Windows Server 2016, such as increased memory bandwidth. Intel® SSD Data Center family of drives and PCIe® NVMe storage devices offer full end-to-end data protection, consistent performance, low latencies, high write endurance, and scalability for growing storage needs.

Mellanox End-to-End Ethernet Interconnect Solution

The Mellanox 25/50/100G ConnectX-4 Ethernet adapters and Spectrum Ethernet switches provide highest performance, lowest latency, and most flexible and reliable interconnect for hyper-converged platforms. With RDMA/RoCE offload in the ConnectX-4 adapters and predictable high performance by the Spectrum switches, the Mellanox Ethernet solution accelerates Microsoft SMB 3.0, unleashes the power of faster storage devices such as NVMe SSDs, and greatly improves server CPU and application efficiency.

How did DataON™ solve EVGA® problem?

DataON™ delivered Hyper-Converged Cluster Appliances™ built and certified by Microsoft to seamlessly deploy with Windows Server 2016. EVGA will now have a scale out Hyper-Converged cluster with integrated software-defined services (compute, networking, and storage) and complete visibility and management of the infrastructure. Also this is an all flash NVME architecture that can help scale the I/O intensive enterprise applications.


- Hyper-V Virtualization Hosting – Each S2D-3110 HCCA can support up to 40+ Hyper-V virtual machines per node, significantly increasing EVGA's VM deployment.
- Industry Leading Application Performance – The S2D-3110 HCCA with four (4x) cluster nodes is capable of providing over 2.4 million IOPS (running VMFleet) using the latest all flash NVMe based SSD technology to scale I/O intensive workloads.
- Windows Server 2016's Storage Spaces Direct allows EVGA to eliminate their SAN including costs and footprint.
- Hyper-Converged Scalability: Incremental compute, networking, and storage resources provides near-linear scalability.
- Automated Deployment – Automated out-of-box workflow accelerates time to deployment for Windows Server 2016, Storage Spaces Direct, and Storage Replica environments.

About DataON™

DataON™ is the industry leading provider for Hyper-Converged Cluster Appliances (HCCA) and storage systems optimized for Microsoft® Windows Server environments. Our solutions are built with the single purpose of rapidly and seamlessly deploying Microsoft applications, virtualization, data protection, and hybrid cloud services. Our company is focused on customers who have made the "Microsoft Choice" and we provide the ultimate platform for the Microsoft Software-Defined Data Center (SDDC). DataON™ is a division of Area Electronics Systems, Inc.

Hyper-Converged Storage & compute with Storage Spaces Direct

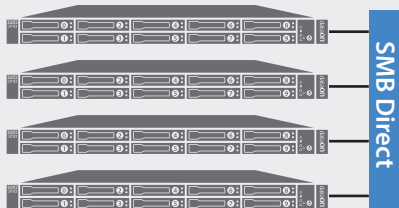
Hyper-V VMs 





Cluster share volumes
ReFS file system 

Virtual Disks 

Storage Pools 

Software Storage Bus 



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