



Out with Old, In with the New: ImageTrend Scales Cloud Services with Microsoft Hyper-V and DataON



ImageTrend Migrates Over 1000 VMs from Aging Compellent SAN to High-Performance DataON SOFS & JBOD Using Window Server 2012 R2 Storage Spaces

Company Overview

ImageTrend, Inc. is a data management software and solutions company that primarily supports first responder agencies. Needless to say, they require the highest SLAs for systems availability, enterprise-level data management and storage resources. Based in Lakeville, Minnesota, ImageTrend provides hosting services and supports over 1000 virtual machines running hundreds of proprietary and off-the-shelf applications for their customers in over thirty states.

The Classic “Do More with Less” IT Challenge

ImageTrend faced a classic IT challenge...how to cost effectively scale operations while managing costs. They are supporting multiple sites running over 1000 VMs, with a wide variety of customer developed and off-the-shelf applications, including over 250 SQL instances. They began with a new strategic plan to overcome the challenge of doing more with less. This included:

1. Accelerating their migration to an all Microsoft and Hyper-V cloud infrastructure
2. Leverage Microsoft Storage Spaces and SoFS to move away from their Compellent SAN
3. Ability to leverage cloud bursting and DR with Microsoft Azure
4. Unify management with MSCC and VMM
5. Simplify VM migration between on premise and Microsoft Azure Cloud
6. Leverage SoFS & JBOD architectures to lower OPEX, CAPEX and power

To start the implementation of this strategy they chose Microsoft Hyper-V as their standard virtualized environment, began replacing their aging Fibre Channel based SAN storage infrastructure. In Microsoft Windows Storage Server 2012, with Storage Spaces and using the Scale out File System, ImageTrend saw an efficient way to lower costs, meet SLAs and provide high availability to their demanding clients.

Leaving SANs for Microsoft’s Storage Spaces with Scale out File System (SoFS)

One of the first areas they looked at was their storage infrastructure, which was not designed to address their growing needs. ImageTrend also wanted to avoid the incremental annual software fees and replace their aging SAN infrastructure. They knew that their Compellent SAN architecture needed to be migrated to a new model that would support a growing customer base and was designed from the beginning to support cloud and virtualized application environments. One of the most glaring challenges with their old SAN model was the overhead of managing storage to VM connections and mappings.

The Challenge



Lower the costs and management overhead of running virtual machines and prepare for Microsoft Windows Server 2016.

The Solution



DataON storage solution helped eliminate licensing costs and simplified deployment of virtual machines with an easy to manage Microsoft Windows Server 2012 R2 environment.

The Result



- Ability to scale to CPUs and storage to support 1,000 VMs
- Ability to leverage Azure for multiple site DR and cloud bursting
- Lowered storage costs by 200% over Dell/Compellent SANs
- Unify and centralize management with MSCC & VMM
- Easy to manage another Windows server
- Prepared for transition to Microsoft Windows Server 2016

DataON DNS-2670

Features

- 4U 70-bay 3.5"/2.5" 12Gb/s SAS HDDs or SSDs
- Redundant Hot Swap Drive Bays, Power & Cooling Module
- LED activity in Each Drive Carrier
- Single or Dual I/O Controller for Redundant and Max Availability
- Eight SFF-8644 12Gb/s SAS host and expansion connections
- Supports up to 4,800 MB/sec bandwidth per I/O controller

Advantages

- High Performance, Flexible & Scalable Storage
- Fully Tested and Qualified for 12Gb/s SAS RAID & HBAs
- Point to Point SAS connectivity for Ultimate Performance
- Daisy Chain Expansion for additional DNS-2670
- Plug & Play Increase Capacity without shutting down
- Green Energy Efficient



For example when migrating VMs, the Compellent SAN required manual intervention to update each volume used by the VM. ImageTrend knew that this model was not sustainable and began to look for alternatives to migrate from an aging and expensive SAN to new software defined storage system for several reasons:

- The needed system that was designed for scale-out needs
- The ability to support 1000s of VMs today and into the future
- Support their continued move from VMware to Hyper-V
- Leverage a purpose-built and certified storage platform for Microsoft 2012 R2 Storage Spaces
- Reduce storage management overhead and costs
- Leverage their Microsoft server provider status to scale operations at lower costs

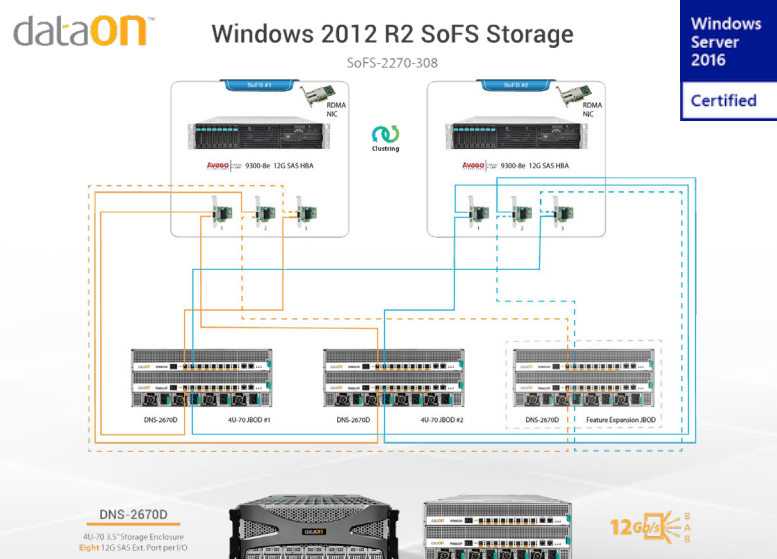
One of the key reasons for the move to Microsoft Windows Server 2012 Storage Spaces was the ability to separate the SAN storage pools from the server running the Hypervisor and to utilize dedicated Hyper-V Servers and dedicated SoFS servers. Their previous SAN model tied their storage pools to their hypervisors, hindering their ability to scale and requiring individual updates of every volume used by the VM. Microsoft's SoFS makes it easy and fast to scale the number of VMs supported with low overhead.

Before migrating to DataON Storage, ImageTrend had three Dell/Compellent SANs saddled with a SAN that would not scale and was driving higher OPEX. To date, they have decommissioned two of the Dell/Compellent SANs and grown their total data pool grow from 100TB to 300TB in the past two years using DataON Storage CiBs and JBODs. ImageTrend continues to plan for more growth.

Why DataON SoFS & JBOD?

They chose the DataON Storage because, as a Microsoft certified platform for Microsoft 2012 R2 Storage Spaces, it had proven itself with multiple hosting companies, with cost-effective high availability for business critical deployments. ImageTrend knew that by stacking SoFS plus JBOD, it would enable them to efficiently deploy, scale, and manage Microsoft Hyper-V VMs with a fraction of traditional infrastructure. With the stacked SoFS and JBOD solution, ImageTrend used SoFS with JBOD providing additional storage. Key features of the DataON deployment for ImageTrend were:

- A Microsoft Certified Platform
- Provided enterprise class hardware (IPMI)
- Options for SSD and HDD storage and 12Gb SAS JBOD expansion
- Support for SMB Direct to enable SoFS across racks of servers
- Multiple networking options including InfiniBand and 10/40GbE RDMA
- Fully HA design with dual servers and redundant powers supplies



DataON DNS-2608

Features

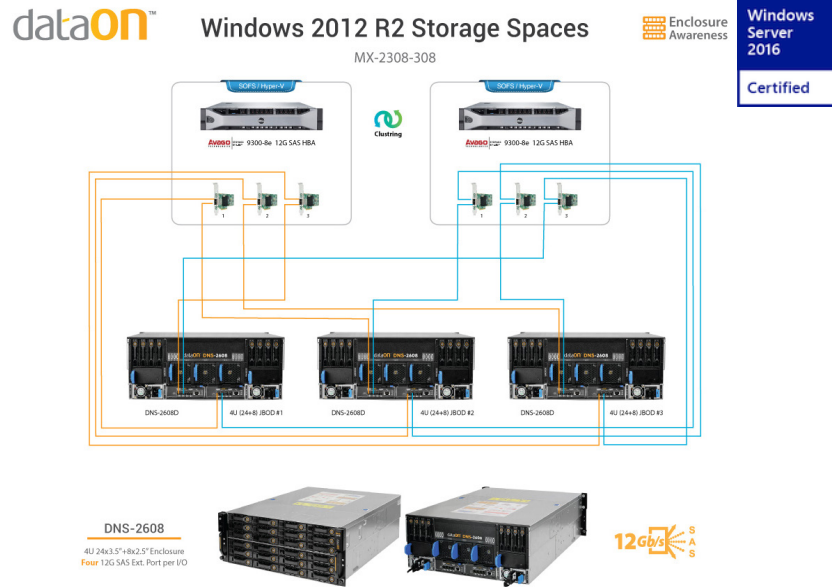
- 4U 32-bay 24x3.5"(front) + 8x2.5"(rear) 12Gb/s SAS HDDs or SSDs
- Redundant Hot Swap Drive Bays, Power & Cooling Module
- LED activity in Each Drive Carrier
- Single or Dual I/O Controller for Redundant and Max Availability
- Four SFF-8644 12Gb/s SAS host and expansion connections
- Supports up to 4,800 MB/sec bandwidth per I/O controller

Advantages

- High Performance, Flexible & Scalable Storage
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ImageTrend also experienced significant savings deploying DataON Storage's solution. A SoFS and JBOD provided an easy to deploy integrated platform that includes dual servers, redundant powers supplies, SSD and HDD storage, and multiple networking options. Options included 10/40GbE RDMA (Remote Direct Memory Access) for maximizing network and storage connectivity via SMB (Server Message Block) transfers networking platform that unified management of all systems components with MSCV VMM, additional SSD and HDD in JBODs increase storage capacity, all to create a high availability cluster environment. This DataON deployment lowered software licensing cost by eliminating the need for Dell/Compellent storage management software. Here is an example of the ImageTrend deployment:



ImageTrend - Preparing for Windows Server 2016

ImageTrend sees Windows Server 2016 as a major advantage and as an opportunity to scale their operations for their future plans with CiBs future proof design being key to supporting a number of new features in 2016 including:

- Storage and Cluster replication
- Scale operations and improve DR with Azure
- Grow I/O performance with SSD and NVMe
- Improve network performance with SMB Direct (RDMA on Mellanox NICs)
- Looking forward to leveraging Storage Spaces Direct (S2D)
- Improve SQL SLAs by adding SQL availability groups
- Leverage Microsoft service provider licensing model to continue savings and manage costs

The introduction of Windows Server 2016 will bring several benefits to ImageTrend, including the introduction of Storage Spaces Direct which will see deployment with a number of their applications. 2016 will also bring native replication for clusters and storage, as well as SQL 2016 which will support availability groups, helping to improve the availability of their SQL servers. Image Trend also expects more savings with Windows 2016 with system center license as a package.



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– Pete Larsen, IT Services Engineer, ImageTrend

Results

"Increased product demand and the customer growth that goes with it prompted an evaluation of our storage needs. We needed to maintain our high level of customer service while improving storage performance and headroom for the future. The transition to DataOn Storage CiB and JBODs helped us accomplish those goals." – Pete Larsen, IT Services Engineer, ImageTrend.

With DataON Storage CiB, ImageTrend was able to reduce their software license costs and annual renewals. ImageTrend lowered the capital expenses by 200% by eliminating most of their Compellent SAN, while tripling their storage growth from 100TB to 300TB with Storage Spaces and Scale out File System. A pleasant benefit of running Scale out File System with their Microsoft System was the ease of deployment and management. On top of tripling their storage capabilities ImageTrend now realizes a 50% reduction in storage administration costs. DataON Storage provides report scripts to further ease administration time and cost. These savings allowed ImageTrend to redeploy their IT resources and to prepare for Microsoft Windows Server 2016.

On top the savings, thanks to Windows System Center, ImageTrend has enjoyed a far simpler management of their enterprise SQL and virtual machine management through a single pane of glass. ImageTrend has gained increased customer satisfaction and brought their clients greater peace of mind. Their IT managers are no longer worrying about annual support agreements, faster deployment times, and more time spent caring for storage and finding the best return.



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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.