Saban Brands – Windows Server Clustered Storage with DataON

Microsoft Storage Spaces-Based Deployment Replaces iSCSI SAN, Significantly Increased Reliability and Performance

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 environment.

The Result

- Provide the IOPs scale to grow Hyper-V VMs for another 3 years
- Proven Performance and scalability
- Improved DR capabilities
- Lowered Software licensing cost vs EMC and HP options
- Prepared for transition to Microsoft Windows Server 2016

Customer Background

Saban Capital Group, is a private investment firm specializing in the media, entertainment, and communications. Saban Brands, a subsidiary of Saban Capital is composed of two branches, Saban Entertainment and Saban Lifestyle. From their offices across the globe in Los Angeles, London, and Sydney, Saban Brands represents iconic brands such as Paul Frank, Power Rangers, and Cirque du Solei Junior.

IT Challenge – Integrate Business Management Systems with Microsoft AX ERP Environment

In 2012, Saban Lifestyle and Entertainment merged into Saban Brands. With it, their IT resources merged as well. Saban Brands required an Enterprise Resource Planning (ERP) system to manage all of their resources, eventually selecting Microsoft's Dynamic AX ERP. In their original deployment for their Microsoft's AX ERP system, Saban utilized a few servers with Windows Server 2012 hosting approximately 20 Hyper-V VMs and a QNAP's NAS with iSCSI 10G for storage. However, within six months of deployment, Saban begun to experience significant declines in storage performance as they began to scale their ERP system. The "Achilles Heel" was its use of commercial grade NAS versus an enterprise class solution. The use of a commercial grade NAS led to significant declines in write performance and data reliability. It was apparent that a new storage and backup strategy was required to support their current business needs, and to be able to scale in the future.

Building the Right Infrastructure for Today and Tomorrow

Saban Brands' goals for their next storage and data protection include:

- Ability to scale performance and capacity to support three years of growth
- Tiered storage for performance and cost effectiveness
- Clustered high availability for constant uptime with mission critical systems
- Cost effective scalable modules of storage
- Lower annual software maintenance costs
- Enable cloud based disaster recovery

In planning for their upgrade, Saban Brands considered both build and buy options. They examined traditional storage vendors such as EMC and HP, but disqualified those options based on the expense of those solutions. Saban also considered a DIY white box option; while this option was significantly more cost effective, Saban's engineers considered it too risky to support mission critical applications.

Why DataON Storage and Windows Server 2012?

Saban Brands wanted a storage system that seamlessly supported their Microsoft Windows-based mission critical applications, including their new deployment of Microsoft Dynamics AX ERP. An engineer from Saban came across DataON during a Windows Server presentation on Storage Spaces. After reviewing the DataON's storage solution performance, Windows Server technical expertise and pricing, it was decided that DataON could meet Saban's strategic goals. DataON's deep understanding of Windows Server 2012 and technologies such as SoFS and SMB 3.0 networking provided Saban Brands with the confidence that DataON had the enterprise level availability, scalability, performance, data protection, and DR infrastructure they needed.
Per Jared Nickerson, Network Engineer, Saban Brands, "Once we made the 'Microsoft Choice' it was obvious that DataON's JBOD platform were the ones to implement our storage strategy. We can now scale our Windows Server 2012 environments, and we're ready for 2016 as well."

Saban Brands Two Phase Deployment Plan

Saban chose to implement DataON's storage solution in two phases, with phase one handling their production data center needs, and phase two supporting their remote disaster recovery needs. Saban's phase one deployment was based around Scale out File Servers (SoFS) and Storage Spaces. DataON selected a two node cluster for high availability and scalability. This two node cluster was connected to three DataON JBODs via 12 Gb SAS with centralized management via MSCS Virtual Machine Manager. This deployment provided Saban with 580 TB of storage capacity. This cluster was equipped with Mellanox 56Gb InfiniBand with SMB 3.0 for networking. This configuration was duplicated in both Saban's corporate and data center sites.
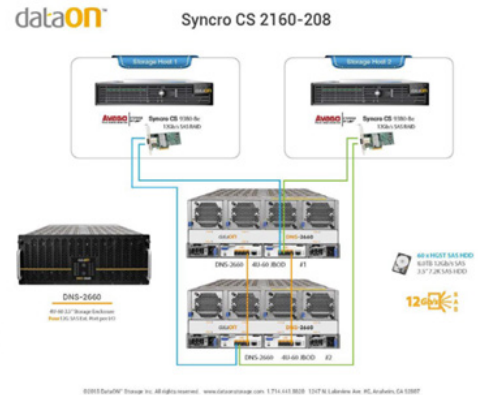Saban's phase two deployment was targeted for their disaster recovery needs. For this deployment, DataON selected a dual node cluster, but incorporated a 500MB failover buffer. DataON selected to utilize Syncro CS to support backup process. To further bolster Saban's DR efforts dual site Hyper-V replication was included with the failover cluster. Storage was provided by dual DataON DNS-2660 JBODs connected via 12GB SAS.

Phase I – For their production data center site which hosted the ERP systems they deployed:

- Microsoft Storage Space 2012
- Centralized management via MSCS VMM
- 2 CiB cluster node for HA failover and scalability
- 3 JBODs expansion chassis for data protection
- Total Storage Capacity of 580TB
- Used Mellanox 56Gb InfiniBand networking for SMB3

Phase II
- 500MB cluster failover buffer
- Dual site Hyper-V replication and failover clusters
- Syncro CS a windows-based HA server clustering solutions
- 12GB SAS for JBOD expansion
- Disaster Recovery sites

Saban Performance Validation

As part of their second deployment, Saban Brands also conducted critical failover tests to evaluate the cluster as a disaster recovery solution. This includes both RAID rebuilds for disk failures, and failure of various storage and networking components to validate the ability of the cluster to fail over during disaster recovery scenarios. The failover testing included SoFS, RAID Stripe, DNS-2660 JBODs, and targeted to test JBOD failures and power failures. Measured rebuild times for the failure of a JBOD were:

Build Time: 14 hours, 40 minutes
Rebuild Time without IO working: 18 hours
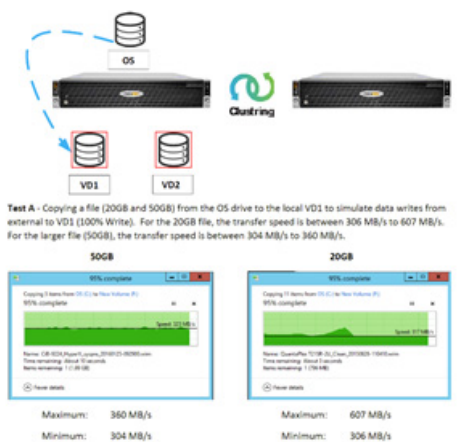Rebuild Time with IO working: 4 Days, 19 hours, 46 minutes

This fail over testing included:

- CiB nodes
- RAID Stripe and storage devices
- SMB3 Networking
- JBOD failures
- Power failures

Test	Failure Item	System still in production	VDs auto failover to other node	Performance (mb/s)
A	1 Node	Yes	Yes	4000 - 4200 (mb/s)
B	1 SAS cable	Yes	No	3200 - 3800 (mb/s)
C	1 Raid Controller	Yes	Yes	500-600 (mb/s)
D	1 DNS - 2660 IO Module	Yes	No	3100 - 3500 (mb/s)

The site to site testing included transfer tests:

- **Test 1** - Copying a file (20GB and 50GB) from the OS drive to the local VD1 to simulate data writes from external to VD1 (100% Write). For the 20GB file, the transfer speed is between 306 MB/s to 607 MB/s. For the larger file (50GB), the transfer speed is between 304 MB/s to 360 MB/s.

- **Test 2** - Copying a file (20GB and 50GB) from local VD1 to local VD2 to simulate data read/writes between the local system (50% Read / 50% Write). For the 20GB file, the transfer speed is between 540 MB/s to 916 MB/s. For the larger file (50GB), the transfer speed is between 459 MB/s to 603 MB/s.

Test A - Copying a file (20GB and 50GB) from the OS drive to the local VD1 to simulate data writes from external to VD1 (100% Write). For the 20GB file, the transfer speed is between 306 MB/s to 607 MB/s. For the larger file (50GB), the transfer speed is between 304 MB/s to 360 MB/s.

Maximum: 360 MB/s   Minimum: 304 MB/s   Maximum: 607 MB/s   Minimum: 306 MB/s

Saban is Windows Server 2016 Ready with CiB

"The improvements from Windows Servers 2008 to 2012 were notable, with no cluster issues for 2012. We found the best success with splitting our clusters, with one each network and disaster recovery. For Windows 2016 we're looking forward to being able to replicate both clusters and storage," Jared Nickerson, Network Engineer, Saban Brands. " If you are facing larger storage issues, Synchro CS gives you faster replication times than straight Storage Spaces. You get the best use out of Storage Spaces by using it as a SAN. Spin up a hosting VM with Storage Spaces and you've got a quick and low cost SAN. It's pretty easy, it all Microsoft, no Linux, no learning curve."

Conclusion – Production Ready and Running

Saban Brand now has an easy to use and centralized long term storage scalability and DR strategy based on the DataON CiB and JBODs. "Hosting VMs with Storage Spaces is as fast as a SAN, but easier and cheaper too. I don't need my team to also learn Linux. This lowers the learning curve and reduces chance of human error," said Jared Nickerson, Network Engineer, for Saban Brands. Saban Brands can now look forward to new features such as Storage Replica in Windows Server 2016 and know we have a cost effective and scalable storage plan.

HGST – Performance for the Most Demanding Environments

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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.

SABAN Brands **Quote:**

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-Jared Nickerson, Network Engineer, Saban Brands

HGST
a Western Digital brand

www.dataonstorage.com

dataon_sales@dataonstorage.com

1.714.441.8820

1247 N. Lakeview Ave #C
Anaheim, CA 92807