

Case Study

SOX Compliant Cluster-in-a-Box

Client Profile



Biotech company (Seattle-based, publically traded) creating oncology products that improve the lives and outcomes of cancer patients.

Focus on therapeutic candidates aimed at targeting cancer in specific/effective ways

Pipeline includes synthetic vaccines for a variety of cancer indications

Challenges

- Current production servers aging, ranging in age from 4-10 years old
- Need for modernization and infrastructure restructuring
- Upgrades needed for performance, security, compliance, and to enable the implementation of new technology solutions.

Actions

Consolidated entire compute and storage infrastructure onto a single DataON CiB-9220V. The previous compute and storage system involved 2 virtualization servers, 9 physical servers, and 3 storage appliances. This consolidation resulted in significant hardware savings to the client. Additionally, the IT maintenance costs and procedures were significantly reduced.



This infrastructure change allowed the client to seamlessly comply with SOX regulations, which was a burdensome process in their previous environment. Specific results are further explained below.

Above all, the client is pleased that their system runs without any performance issues while providing an expandable foundation for their entire Microsoft Hyper-V environment.

Results

SOX compliance

Compliance report reduced from 150 pages (2013) to 30 pages (2014 Q1)

System Center DPM-based backup, self-contained in the CiB, solved all backup reporting and auditing problems.



Change Management is vastly simplified by the new CiB, from check-pointing production systems, cloning systems to test changes, performing rollbacks from Hyper-V checkpoints or DPM backups.

"Fully compliant change management has gone from being almost impossible to an afterthought."

Performance

24 virtual machines running with up to 30 tested on CiB in production without any performance issues



"Storage Spaces SSD auto-tiering in new CiB more than met the client's IO needs"

"The 256GB per-node in the CiB has allowed us to have up to 128GB of VMs running at any given time so that the entire environment can fail-over to a single node"

Backup & Disaster Recovery

"Licensing ... Windows Server and the entire System Center suite, the client was able to back up their environment to a VM DPM server (located on the CiB) which is then backed-up off-site over a site-to-site VPN by a secondary/collocated DPM server."

Storage

"Mirrored and Tiered Storage Spaces performance is awesome. The SSD tiering has exceeded our IO requirements meaning that we now have a solid foundation for the entire virtualization environment."

Future Expansion

"Adding a server now is as easy as duplicating our Library base VMs out of System Center Virtual Machine Manager. We can now create a new VM and have it up and running with VMM in under 2 minutes."

Before & After

Before:



After:



Before	After
Workloads	
<p><u>Virtualized Workloads:</u> AD FS 2.0 Proxy Server AD Server – Tertiary (DC/GC/DNS) Azure Active Directory (AAD) Sync + AD FS 2.0 BES 5 Server (Windows Server 2008) CentOS Linux: Asterisk Server for VoIP conference phones Exchange 2013 Hybrid Coexistence Server Linux: VMware vCenter 4.1 Server Management Server (RSAT + Other Tools) Server 2008 R2 SSTP/PPTP VPN + 'Remote Desktop Gateway' Server SharePoint 2007 Server SharePoint 2010 Server SharePoint 2013 Server SQL Server 2008 R2 Standard Ubuntu Linux: Clinical MySQL Database Ubuntu Linux: Lab backups Ubuntu Linux: Lab Freezer Monitoring Ubuntu Linux: Lab MySQL Database</p> <p><u>Physical Workloads:</u> AD (DC/GC, NPS, AD CS) BackupExec 2010 R3 ERP application ERP Terminal Server Exchange 2007 Server File servers (2) Print server SQL Server 2005 Standard (ERP SQL)</p>	<p><u>All Workloads:</u> All workloads running as Hyper-V VMs on CiB Windows Server 2012 R2 Datacenter</p> 
Hardware	
<p><u>Virtualization servers, vSphere 4.1 (2):</u> Dell R610, 64GB RAM, RAID1 146GB 15k SAS, 8x1GbE Dell R620, 64GB RAM, RAID1 146GB 15k SAS, 8x1GbE,</p>	<p><u>All Servers and Storage:</u> DataON CiB-9220V</p> <p><u>Per node:</u> 256GB RAM, 128GB SSD SATA RAID1, 2x10GbE SFP+</p>
<p><u>Physical Servers (9):</u> Dell PowerEdge 2950, 16GB, 3x73GB 10k SAS, 4x1GbE Dell PowerEdge 2950, 16GB, 3x73GB 10k SAS, 4x1GbE Dell PowerEdge 1950, 16GB, 250GB (7.2k SATA), 2x1GbE Dell R200, 4GB, 2x 160GB, 2x 1GbE Dell R200, 4GB, 160GB (2x 160GB 7.2k SATA), 2x 1GbE Dell R710, 4GB, 5x500GB RAID5, 4x1GbE HP, 16GB, 3x RAID1 73GB SAS, 4x1GbE HP, 16GB, 1x RAID1 73GB SAS, 4x1GbE HP, 16GB, 1x RAID1 73GB SAS, 4x1GbE</p>	<p><u>Internal SAS JBOD:</u> <i>Storage Spaces Pool:</i> 4x 200GB STEC SSD, 8x 4TB 7.2k SAS</p> <p><i>Storage Spaces Virtual Disks:</i> 6TB Tiered Mirrored (primary VM storage), 4GB Mirrored (quorum), 8TB Parity (Local backup storage),</p> <p><i>Clustered Volumes:</i> 6TB ReFS CSV for VMs, 4GB NTFS Quorum, 8TB ReFS CSV for Backups</p>
<p><u>Storage (3):</u> Dell MD3000 SAS DAS, 5TB (6x1TB 3.5" 7.2k RAID5) EMC VNXe iSCSI SAN, 10TB (12x1TB 3.5" 7.2K RAID6) FiberChannel DAS, 2.4TB (16x300GB 3.5" 15k RAID6)</p>	

Contact

Microsoft: microsoft.com

One Microsoft Way

Redmond, Washington 98052

+1 (800) 642-7676

TurnPoint Technology: turnpoint.tech

221 First Avenue West, Suite 100

Seattle, Washington 98119

+1 (425) 818-3176

DataON Storage: dataonstorage.com

1247 North Lakeview Avenue, Suite C

Anaheim, California 92807

+1 (888) 726-8588