

High availability hypervisor platform for stock photo agency

Setup of a cost-effective active-active iSCSI solution with Open-E DSS V7

Alamy is the world's largest online photo agency for stock, video and live news with one of the fastest websites in the industry. Over 30,000 individual photographers and 600 picture agencies worldwide contribute to the picture database, and every day 30,000 new images are added to the collection.

The Challenge

Alamy's Head Office operations are supported by a variety of servers, many of which have been virtualised over the last five years. The existing infrastructure consisted of a single Open-E DSS V6 license providing iSCSI storage to two ESXi servers. A third ESXi server with local storage hosted the virtualised Exchange server. All hardware was approaching end of life, and there were regular performance issues with Exchange despite it having multiple dedicated disk arrays. The company also wanted to increase resiliency by eliminating single points of failure. Although ESXi's VMFS allowed the iSCSI volumes to be shared, VMware's licensing requirements for live migration (Vcenter) were beyond budget. And achieving true redundancy of shared storage using traditional SAN solutions was prohibitively expensive.

The Solution

Alamy's IT Team decided to evaluate a solution which leveraged Hyper-V 2012 clustering to provide a high availability hypervisor platform, and the new Open-E DSS V7 with Active-Active iSCSI Failover to provide high availability iSCSI storage. Four existing test-lab servers were used to build a test system, firstly for proof of concept, and then to evaluate different configuration options (e.g. for network load balancing). Finally the team conducted stress testing to ensure acceptable performance, and a test that failover of Open-E and Hyper-V worked as expected.

As a result, Alamy settled on a solution: Since Open-E DSS V7 would be used purely for iSCSI, there was no benefit from NIC bonding (since MPIO provides excellent load-balancing). Using iSCSI MPIO over 3 x 1Gb NICs between hypervisors and storage servers gave a more than adequate performance, so the expense of a 10Gb switch could be avoided. Providing the QoS was set appropriately for the virtual NICs, the Hyper-V server NICs could be bonded into a single team shared for both iSCSI traffic (hypervisor to storage) and guest virtual machine traffic, with good performance. Using 12 SATA drives in a single RAID array for the storage servers gave equivalent performance to smaller dedicated arrays of SAS drives without high costs. Also, the 10GbE ports on the Hyper-V servers were directly connected for live migration traffic, and the 10GbE ports on the Open-E servers were directly connected for volume replication traffic. A dedicated Open-E DSS V7 volume using SSD disks would be used for the Exchange storage and all servers would be powered from an existing UPS. One Open-E DSS V7 and one Hyper-V server were connected to one core switch, the others to another core switch.

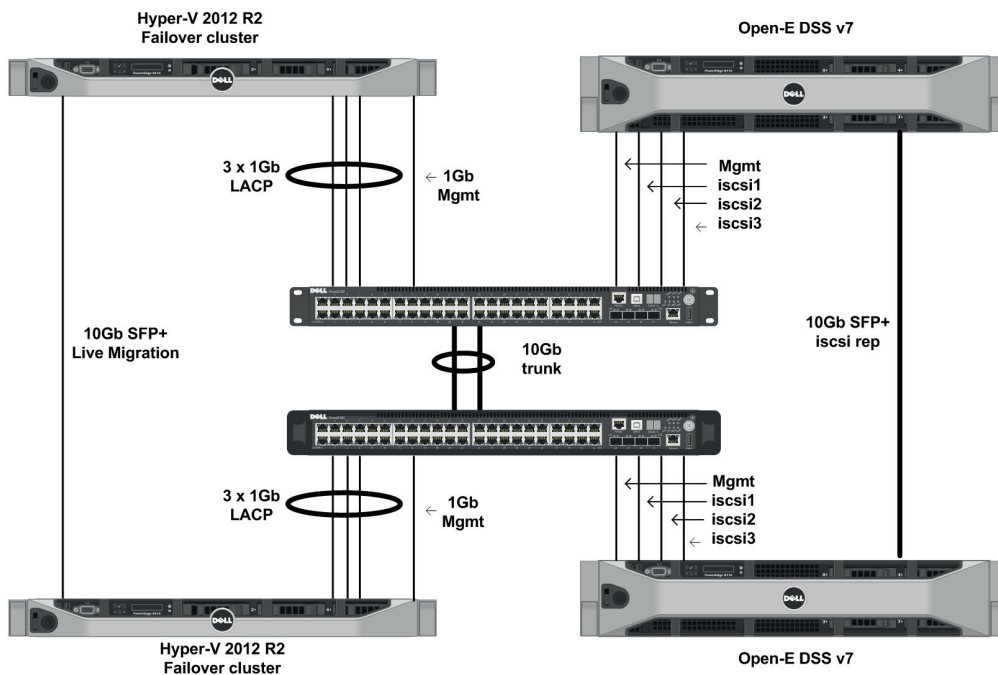
Shortly after completing the migrations, one of the switches failed, so one Hyper-V and one Open-E server lost connectivity. Happily, failover of both storage and virtual machines worked as expected, so Alamy was able to continue working with minimal interruption. Previously this would have meant that all the virtual machines on the affected hypervisor would have been unavailable.



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The Hardware Setup

Alamy used 2 x Dell PowerEdge R620 servers, each with 2 x 10core processors and 128GB ram as Hyper-V servers, and 2 x Dell PowerEdge R720XD servers, each with 12 x 2TB sata drives as Open-E servers. The solution was built and tested, and then existing servers were migrated from ESX to Hyper-V.



The Benefits

Mark Jones, Network Administrator at Alamy:

“The active-active iSCSI replication in Open-E DSS V7 provides load-balancing of storage, redundancy against hardware failure, and the ability to install hardware and OS updates without VM downtime which were the strongest arguments for our decision. Additionally, our Exchange performance issues have completely disappeared. Migrating from ESX to Hyper-V means that both failover clustering and live migration are supported without a large investment in licenses, providing load balancing, redundancy against hardware failure, and the ability to install hardware and OS updates without VM downtime. With MPIO on Open-E DSS V7 and NIC bonding with MPIO on Hyper-V, even the failure of a NIC causes no downtime. An actual hardware failure demonstrated that the project goal of resilience had been achieved.”

About Alamy

Alamy is the world's largest online photo agency for stock, video and live news. Founded in 1999, the company currently holds offices in the US and India and sales teams in Germany and Australia. The headquarters are located near Oxford. Images are sourced from over 30,000 individual photographers and 600 picture agencies from around the world. 30,000 new images are added every day, keeping the collection fresh and up to date. With the fastest website in the industry it's quick to find what customers are looking for. Great imagery, amazing service and flexible pricing – read more on www.alamy.com

About Open-E

Open-E is a well-established developer of IP-based storage management software. Open-E JovianDSS and Open-E DSS V7 are robust, award-winning enterprise storage applications which offer excellent compatibility with industry standards, and are the easiest to use and manage. Additionally, they are some of the most stable solutions on the market and undisputed price performance leaders. Open-E accounts for over 27,000 installations world-wide and has received numerous industry awards and recognition. Thanks to its reputation, experience and business reliability, Open-E has become the technology partner of choice for industry-leading IT companies. For further information about Open-E, its products and partners, visit www.open-e.com