DataCore Virtual SAN Delivers Business Continuity and a Hyper-Converged Data Centre solution for LERG S.A.

Chemical Manufacturer Implements DataCore Software-Defined Storage Infrastructure to Enhance Business Continuity, Performance and Productivity for VMware and Critical ERP and Oracle Applications.

ABOUT LERG S.A.

LERG S.A., headquartered in Pustków (Poland), is a leading manufacturer within the chemical industry in Poland. The company's focus is the production and the export of resins for a wide range of applications in various industries. Their mission is to maintain the highest quality standards across their range of products and to adapt their portfolio to meet the needs and expectations of customers in both domestic and foreign markets. Established in 1937, the company has grown currently to nearly 500 employees in Poland, with revenue over 100 Million Euros and customers in 25 countries around the world.

www.lerg.pl

Customer

The ever expanding product range from LERG is due to a constant programme of research and development, ongoing personnel qualifications and a comprehensive ecology package. Effective operation of such a large organization requires a number of flexible project activities that are helpful in the daily routines. They often prove to be an essential part of the processes. To name but a few, the company has developed a complete system of dedusting for exhaust gases and a modern system of continuous measurement and monitoring of emissions from thermal treatment installations.

Challange

"The steady growth of business, the rapid response to customer requests, maintaining the quality of our products at a high level as well as regulatory requirements are challenging the reliability and performance of our IT systems. Especially for our integrated enterprise management systems users expected an improvement of availability (MTBF, MTBSI) and recovery (RTO, RPO)", explains Adam Bek, Financial Director at LERG S.A.* The IT infrastructure of LERG, located in Pustków, relies on a pool of critical data and applications, which are vital to its operational efficiency and future growth. To make their business operations more reliable and flexible to their dynamic needs, the company decided to virtualize core application servers (including Exchange for Mail, File Services, Domain Server) all under VMware in a clustered configuration, while their vital ERP system, IFS based on Oracle data bases, would remain on separate Linux machines. The underlying storage was provided from a single HP storage array. When it was time to renew their equipment, the company's IT team decided it needed to modernize its infrastructure to gain more performance, reliability and grow capacity. The latter had become a highly urgent issue, as the usable capacity was within 10% of the maximum acceptable tolerance levels and had

* Mean Time Between Failures MTBF, Mean Time Between Service Incidents MTBSI, Recovery Time Objective RTO, Recovery Point Objective RPO

reached a point that any growth could harm the stability of the overall infrastructure. With that and other risks in mind, LERG also decided to set up a second data centre, as their backup and recovery site. So LERG invited proposals to address their new requirements and to set up replication and backup technologies to support the second, passive data centre site.

At that point in time, a much higher level of availability for business continuance and the integration of flash based solid state disks (SSD) for higher performance were not the expectation in based on what they knew and had experienced in terms of costs. That all changed when Komtech Infrastruktura entered the scene. The IT service provider focusses on security and business continuity and had worked for several years with DataCore's storage virtualisation products. But the Komtech experts did not only offer a product, they introduced a different approach to solve LERG's challenges: an automated high availability concept in a stretched cluster that would span the 2 data centres... at a lower price point than the originally envisioned offline replication scenario. That concept was based on a hyper-converged data centre solution supported by DataCore Virtual SAN software. After a couple of workshops, a live demo at Komtech's lab, and further evaluations, Andrzej Nalepa, IT Manager, recommended this innovative solution.

Solution

Komtech was able to replace the external HP storage array, three VMware servers and the Linux machine with a single HP Proliant server at each data centre site, each with enough internal hard disk drives (HDD) to meet their capacity growth needs, connected via 10 Gbit/s iSCSI. By reducing the hardware footprint from 5 to 2 systems and implementing the cost effective DataCore solution, LERG was also able to implement a Solid State Disk (SSD) directly into the servers. On this hardware resides VMware ESXi 6.0 as hypervisor to deliver virtual machines for Windows applications like Exchange, Web, Domain or File Services as well as their more critical Linux-based ERP systems using Oracle data bases.

Moreover, the DataCore Virtual SAN software added several key features to the converged server and storage solution. For real high availability the system synchronously mirrors all data between the sites. The virtualisation servers with distinct sets of disks both add performance in standard operation. In case one site goes down, the software ensures business continuity by an automatic failover and automatic resynchronisation (auto failback), without any manual action required by LERG's IT staff. The "stretched" VMware clusters now physically run on two separate data centre sites in an active-active configuration, both providing capacity as well as performance to the productive systems. DataCore virtualizes HDD and SSD capacity and manages a virtual pool, providing the virtual machines with much higher performance virtual disk capacity.

The DataCore Virtual SAN integrates high speed caching and auto-tiering to improve the performance on the underlying capacity. Thus standard hardware components can be used for main purposes, while SSDs stay reserved for the most IO-hungry data blocks. Flash-based storage can therefore be used cost-effectively and productively. Other technologies included are asynchronous replication and thin provisioning for an optimized use of disk space resources.

> "In comparison to concepts for replacement, Komtech's solution resulted not only in new equipment for a similar price – we were also able to modernise the IT architecture and add more functionality and performance. The hyper-converged data centre based on DataCore Virtual SAN enabled us to set up business continuity processes with improved performance and productivity. The new infrastructure also provides greater flexibility with high investment protection for our future."
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> - Adam Bek, Financial Director LERG S.A.

> In environments with multiple application servers, the DataCore Virtual SAN is a great and cost effective alternative to physical SANs. It combines DataCore's core technology for storage virtualisation and provisioning, high availability and performance gains in a very effective manner to support VMware and other hypervisors. We were able to migrate the virtual machines in an absolutely painless process with a minimum of impact for the customer. For LERG this resulted in a cost efficient solution to overcome their current capacity, availability and performance problems, and deliver immediate cost savings for their IT operations and a high level of investment protection.
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> - Tomasz Bienkowski, Technical Director, Komtech Infrastruktura

Benefits

The installation of DataCore immediately alleviated the previous I/O bottlenecks, as multiple VMs running on the same physical servers could now access a readily available shared pool of storage. The DataCore Virtual SAN uses CPUs and memory as high speed cache – automatically optimising read and write traffic – and I/O throughput is dramatically increased. In the back office, management under one single management console is also significantly easier for LERG's IT staff, with a central operational view of distributed resources on the SAN. Provisioning new VMs therefore becomes clicks away and non-disruptive, as does maintenance tasks, which can now be planned, co-ordinated and performed by switching between nodes, meaning that no system downtime is required. The hardware, vendor and platform independence of the Virtual SAN offers a maximum of investment protection, allowing capacity growth and performance whenever needed. The DataCore solution scales up to 64 nodes; scales out into a SAN infrastructure and supports both iSCSI and FC. In the case of increased performance or capacity requirements, LERG now has the freedom in hardware choice or the underlying hypervisor platform. *"By implementing DataCore Virtual SAN we were able to benefit from more stability, higher productivity and cost efficiency. We also reduced data centre footprint and saved energy costs, and thus DataCore supports LERG's commitment for highest quality, productivity and environmental protection"*, said Adam Bek, Financial Director at LERG S.A.

Benefits in overview

- Higher reliability/availability
- Improved analysis and calculations, too time-consuming before
- Maintenance without disrupting the systems in two locations
- Smaller amount of physical machines, reduced power consumption and heat output
- Flexible hardware choice while DataCore software will continue to serve us
- DataCore effectively reduced our storage-related spending/investment by 50%:
- Since we virtualized our storage with DataCore, performance has improved more than 5x.

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