Pushing Performance

Customer Snapshot

About Harting Technology Group

The HARTING Technology Group is skilled in the fields of electrical, electronic and optical connection, transmission and networking, as well as in manufacturing, mechatronics and software creation. The Group uses these skills to develop customized solutions and products such as connectors for energy and data transmission applications including, for example, mechanical engineering, rail technology, wind energy plants, factory automation and the telecommunications sector.

For more, visit:
www.HARTING.com

HARTING Technology Group: DataCore Storage Virtualization Software Lowers Cost of Ownership and Accelerates Performance for SAP and Critical Enterprise Applications

DataCore software and Hitachi hardware provide high-performance and highly-available enterprise storage environment for SAP at the best price

When HARTING Technology Group looked at options for upgrading their enterprise datacenter, they faced a critical decision around storage technology: should they migrate their business-critical applications – such as SAP, Microsoft Exchange, as well as CAD and product lifecycle management software – to another costly traditional storage environment? Or should they continue their move forward to a virtualized datacenter and invest in newer, more flexible options made possible by storage virtualization?

HARTING, a manufacturer and services company specializing in electrical, electronic and optical connection, transmission and networking, could not afford to take the decision lightly. With over 3,300 employees in over 36 countries worldwide, producing technology products and solutions for industries including high-speed rail, wind energy and automotive, the company's data and storage systems are its lifeblood.

"Our expectations of the combination of HDS hardware and DataCore software have been exceeded."

- Rudolf Laxa, Operations and Data Center Team Leader

The company chose a joint solution proposed by solution provider ISO Datentechnik, including Hitachi storage hardware and DataCore's SANsymphony storage virtualization software. By moving from a less-flexible legacy hardware infrastructure to a cost-effective midrange hardware system and managing all storage with a virtual SAN, HARTING was able to achieve three key objectives:

- Reduce the overall costs of storage and provide greater flexibility of options for adding storage systems in the future
- Improve reliability through the addition of DataCore's high availability for critical business systems
- Increase enterprise application performance. HARTING has estimated that application performance times for SAP users have increased up to 30 percent, and some tasks saw as much as 400 percent performance improvements.

In particular, HARTING credits DataCore's SANsymphony software with introducing an unprecedented level of performance and business agility, especially combined with the company's existing VMware-based server virtualization deployment throughout its data center. "The technical capabilities of DataCore virtualized storage appealed to us almost immediately; it creates high availability, gives us independence from the hardware, and makes flexible migration scenarios possible," says Rudolf Laxa, HARTING's Operations and Data Center Team Leader. "The software has proven to be a meaningful extension of our VMware environment and guarantees the highest levels of availability we require from our storage solution."

Need for Storage Modernization Drove Change

HARTING's plans to modernize its storage environment were formulated in the first half of 2010, as part of their hardware vendor's product replacement cycle. At the time, HARTING relied on EMC's Symmetrix and Clariion products, as well as a Hitachi Data Systems (HDS) AMS500 storage array. The plan forward was to move the company's business-critical SAP servers to run on VMware's ESX, and to be part of a virtual server farm that would include Microsoft Exchange e-mail servers, as well as CAD and PLM applications servers, among others. Storage for the virtual server farm would be managed by DataCore's SANsymphony software, with a virtual SAN replicating the data to two different computer centers, in Espelkamp, Germany – located several kilometers apart.

Architected for Resiliency

The requirements for the replacement technology were drawn up accordingly. The new solution was intended to offer storage capacity of more than 100 terabytes (TBs) for Tier 1 and 25 TBs for Tier 2 data. More than 60,000 IOPS were required for the demanding SAP environment. Apart from a simplification and consolidation of the Fibre Channel environment, such as providing central management, availability of more than 99.99 percent was the greatest priority. The aim was to find a solution with fully transparent, automatic failover and to deliver automatic restoration between the computer centers without administrator intervention.

A Compelling Combination: High Performance and Low Cost

Various designs were tested throughout the summer and as a direct result, three service providers were short-listed. The best price/performance ratio for the total package was ultimately provided by ISO Datentechnik, from Georgsmarienhütte. HDS mid-range storage systems and DataCore Software were designed as part of the infrastructureplan. According to Laxa, there was initial hesitation to move business-critical SAP applications to the virtualized storage environment – as it represented a significant break from HARTING past practices. However, examples of success with similar moves at other DataCore customers and the opportunity to significantly enhance current capabilities ultimately won out. "The benefits of central administration finally provided the impetus for implementation -- a decision we have not had a reason to regret so far," he states.

Benefits of Storage Virtualization

DataCore storage virtualization software enables centralized management of HARTING's disk storage and makes it available to physical or virtual machines as virtualized disk drives. Only simple mouse clicks are required to set up and provision virtual disks from the central console. DataCore's synchronous

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mirroring replicates both the physical and the virtual servers. Mirrored virtual drives offer the desired high-level of availability. The auto-failover and automatic resynchronization compensate for the temporary failure of either one of the redundant sides (whether planned or unplanned) without any operating down-time or human intervention.

The virtual disks can be moved, migrated, duplicated and backed up during operation. Thus HARTING benefitted from DataCore's ability to migrate data from old systems to new without disruptions. Fast disk to disk snapshots are used as backup copies. Moreover, HARTING plans to expand its use of Thin Provisioning, remote asynchronous replication and other capabilities now available with DataCore.

SAP SAN Environment at Blazing Speed

The new storage environment was launched and deployed in the October through December period of 2010 after intensive preparatory work. The conventional calculations carried out by ISO Datentechnik using typical SAS-HDD values resulted in 180 - 220 IOPS (at 15,000 rpm) and a demand of 440 HDDs for 79,200 IOPS for the current environment. The hardware and software were designed accordingly.

Another side benefit of moving to a DataCore storage virtualization-based solution was the speed of implementation. The new high availability environment was designed around one HDS AMS2500 with 445 SAS hard drives and 16 FC ports with 8 Gbit/s installed in each data center. The 300GB SAS disks have a combined capacity of 133.5 TB gross or 117TB. Free storage slots were reserved for subsequent retrofitting of SSD cards, should this become necessary.

The complete migration to the DataCore environment was completed in December 2010, as originally planned.

Significant Enterprise Application Performance: Up to 400% Speed Ups

ISO Datentechnik built into the implementation a rigorous testing program, to ensure the entire system was optimized, resilient and could deliver the needed performance. In one scenario, 45 hard disks were used to measure 49,000 IOs per second for access to a physical storage system, while simultaneous access to a virtual and a physical machine resulted in 103,000 IOs per second. For the SAP environment specifically, this meant up to 30 percent faster server response times.

Additionally, the DataCore environment enabled the integrity testing of the SAP R3 databases, which once took eight hours, to now be completed in just two hours –a 400% speed-up.

"The new HDS midrange systems and the DataCore virtual storage layer have allowed us to lower costs and achieve a significant increase in fail-safety and performance," says Laxa. "The excellent interaction between DataCore software and VMware is another reason why we are more than satisfied with the current solution."

For more information on storage virtualization, please visit:
www.datacore.com

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