



CASE STUDY

Quantum and SEP sesam Provide the Backbone for EMIS Electrics' Backup Strategy

When its backup volume exceeded storage capacities, the IT team at EMIS Electrics, a medium-sized international company headquartered in Lübbenau, Germany, urgently needed a solution. After testing several products to find the right combination for its Linux- and Novell-based environment, EMIS selected Quantum deduplication appliances. The new system reduces the backup window by 30 percent and achieves deduplication ratios of up to 9:1.



FEATURED PRODUCTS

DXi®-Series Deduplication



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Karsten Hollop
Head of IT at EMIS Electrics



It's a triple win for EMIS. We benefit from both SEP sesam and Quantum technology—and the two systems benefit from being used together. It's the perfect solution!

Karsten Hollop – Head of IT at EMIS Electrics



SOLUTION OVERVIEW

- Quantum DXi4701 deduplication appliance
- Quantum DXi® V1000 virtual deduplication appliance
- Quantum Scalar® i40 tape library
- SEP sesam backup software for VMware
- Linux operating system
- Novell infrastructure

KEY BENEFITS

- Improves reduction rate through variable-length deduplication
- Reduces backup window by 30 percent
- Reduces storage, physical space, and power expenses
- Provides effective data retention, including off-site storage, with low management overhead
- Delivers redundant retention of backup data across all locations to provide an additional level of security

EMIS Electrics is a small, innovative business that has gradually evolved into a successful medium-sized enterprise. It started 20 years ago as a 27-person firm in Lübbenau, about 100 kilometers south of Berlin, Germany. Today, it is an international business with more than 460 employees at eight locations across Germany. Originally a spin-off of the Vetschau/Lübbenau power station, EMIS expanded into new markets, including service, automation, facilities engineering, electrical machines, and open-cast mining. The company takes on challenging assignments, such as maintaining heavy generators, reconstructing open-cast mining equipment, and automating rides at amusement parks. EMIS realized that its global business could not succeed without a streamlined and efficient backup system—a difficult challenge with corporate data distributed across several locations. EMIS needed a multi-site backup system to ensure business continuity.

SELECTING THE RIGHT DEDUPLICATION APPLIANCE

EMIS Electrics has been using server virtualization for many years. Today the entire server environment is virtualized, except for its monitoring and backup servers. EMIS currently runs 75 VMs on VMware ESX hosts at its headquarters in Lübbenau, while other sites maintain an average of five VMs. The entire EMIS backup system provides data protection for a total of 135 VMs. The company's operating system environment is unusual. Instead of a classic Windows file server, EMIS uses primarily Novell and Linux at all of its sites, and a Novell email system.

Finding a deduplication appliance that would work with the company's Linux- and Novell-based server environment was not an easy task. "We tested a number of solutions from various providers—none of them offered the deduplication and compression performance that we were looking for. We were under

serious pressure because we could no longer maintain our minimum retention periods of 90 days,” explains Karsten Hollop, head of IT at EMIS Electrics.

QUANTUM'S FREE TRIAL ALLOWS TESTING BEFORE BUYING

The turning point was when Hollop described EMIS Electrics' search for a deduplication solution to a technician from system integrator Bechtle at a conference in Dresden, Germany. He recommended testing a free trial version of Quantum's DXi V1000, a virtual deduplication appliance.

The DXi V1000 is designed for businesses with remote sites, and offers powerful deduplication capabilities on a VM with protection for both virtual and physical servers. With the DXi V1000, copies of the backup data are kept locally, but can also be stored in the cloud or a second DXi appliance. This combination dramatically reduces the storage requirements in all locations. Hollop installed the free trial version of the DXi V1000 appliance as a VM on an ESX server, and connected it via Network File System (NFS) to the backup server.

“Before, our situation was catastrophic—we didn't have a way of retaining backups anymore. The DXi trial was well worth the effort. Our previous solution couldn't handle variable block lengths, so we had no deduplication at all. With the DXi, we rapidly achieved a reduction rate of up to 9:1—without making any changes to our backup strategy,” says Hollop.

After having success with the DXi V1000, Hollop decided to take advantage of Quantum's try-and-buy program to test a physical DXi appliance, DXi4701 with 11TB storage capacity. “We already had bad experiences with other products. We wanted to see if the new DXi appliance would fit into our environment—and only buy it if we were sure that it would meet our requirements for deduplication performance,” explains Hollop.

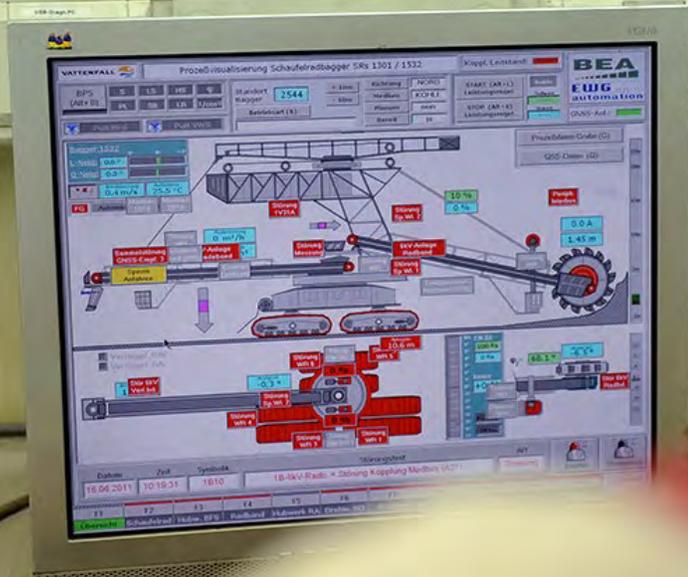
After this trial proved successful too, EMIS not only implemented the DXi permanently, but also purchased a Quantum Scalar i40 tape library to provide long-term, off-site disaster recovery (DR) protection.

DXi APPLIANCE SIMPLIFIES BACKUPS

With the new DXi appliance, incremental backups only take about 6 1/2 hours. The SEP sesam backup software starts the incremental backup process at 9 p.m. every Monday through Thursday on the DXi4701 connected via NFS share at EMIS headquarters in Lübbenau. The backups are completed well before normal business hours, so they do not impact the production environment. Every Friday a full backup of 11.3TB is written to the DXi and the Scalar tape library.

Data from other offices in Germany is also included in the full backup. They use Novell backup servers to transmit their repositories to Lübbenau using Linux rsync, where the updated data sets are incorporated in the DXi backup. In this initial stage, EMIS retains backups for 90





days, but in the future it plans to store them on tape at an off-site location for longer term retention.

The DXi currently has a deduplication ratio of up to 9:1, but EMIS plans to extend its retention times, which will increase the deduplication ratio even more. “Without the DXi reduction rate, we would need 41.36TB to store the backup volume. Now, we use only 5.2TB of disk space. That’s quite a remarkable difference,” says Hollop. Integrating the deduplication appliances also reduced the backup window by 30 percent with significant cost savings.

SEP SESAM AND QUANTUM DXi WORK TOGETHER TO DELIVER MULTIPLE BENEFITS

“SEP sesam is a tool that meets all of our requirements and—unlike other backup products—works well with Novell and Linux. We used SEP sesam to migrate our backup server from Windows to Linux. Changing the operating system boosted the performance by almost 30 percent,” explains Hollop.

“Quantum appliances are an ideal fit for our environment. NFS is used continuously all the way to the backup server, and channel bonding increases the effective bandwidth to 20Gbps—which can be challenging for a LAN with a bandwidth of 4Gbps. A crucial advantage of DXi appliances over products from other manufacturers is variable-length block deduplication. It’s not a win-win—it’s a triple win for EMIS. We benefit from both SEP sesam and Quantum technology—and the two systems benefit from being used together. It’s the perfect solution!”

ABOUT EMIS ELECTRICS GMBH

EMIS Electrics GmbH is a medium-sized service provider that has grown continuously over the past two decades. It started out in 1991 as a spin-off of the Vetschau/Lübbenau power plant with 27 employees and two main business areas: power-plant services and facilities engineering. The next milestone in the company’s history was a large-scale project for the Schwarze Pumpe power station in 1995. Eventually, other new sites were established in the vicinity of regional power plants, including Waldkirch and Hamburg in 2005. In 1997, EMIS entered the international market. Due to increasing demand, the company added automation and generator services to its portfolio in 2007. In 2010, EMIS was involved in the construction and modernization of substations and overhead lines. Today, Siemens AG (energy sector, fossil-power generation; instrumentation controls and electrics) has a minority stake in EMIS’ successful business. Together with Siemens, and other partners such as the ABB Group, EMIS Electrics is looking forward to future endeavors.

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