NetApp®

Munich Re Saves 800TB of Space Using NetApp Solutions

Customer Profile

Munich Re stands for focused solution expertise, consistent risk management, financial stability, and exceptional customer proximity. It is active in all insurance sectors and represented on all continents with a staff of around 47,000. Its areas of activity include reinsurance, primary insurance through the ERGO Group, health insurance under the Munich Health brand, and asset management by means of MEAG. In fiscal year 2012, the Group achieved a profit of €3.2 billion. The share of the Group result in the reinsurance business sector alone ran at €3.1 billion.

With premium income of around €28 billion from reinsurance, Munich Re is a global leading reinsurer. Munich Re is a sought-after contact, especially when solutions are required for complex risks. The global and local know-how of the approximately 11,200 staff in the reinsurance section is unique. Munich Re places high value on customer service, which is regularly rewarded with top ratings.

The Challenge
Efficient data storage infrastructure

The business activities in the areas of reinsurance and premium insurance place considerable demands on the efficiency of the IT infrastructure and therefore also on the data storage environment. Financial service providers such as Munich Re need to process extremely high quantities of data within the shortest possible time. Staff and applications also need to have quick access to stored data. Up until now, the repository strategy of the Munich headquarters of Munich Re has been based on heterogeneous infrastructures. Around 75% of the primary data was stored on NetApp® systems for network attached storage (NAS) and storage area network (SAN). The remaining data was distributed across 12 SAN systems from other manufacturers.

"In 2011, we decided to unify the storage structure in both Munich data centers," recollects Arno Keiler, project lead at Munich Re. "In doing so, our main targets were to consolidate to as few different systems as possible, to standardize using a uniform architecture and configuration, and to automate to make sure of consistent quality and

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Arno Keiler
Project Lead at Munich Re

faster provisioning." In addition, the functionality of the storage systems was to be extended and made ready for future technologies. The business objective was to achieve a more efficient management of the data storage infrastructure by using standardized interfaces for the administration systems. The intention was also to reduce both the quantity of storage systems and the required storage space.

The Solution
Technical and financial requirements fulfilled

The detailed tender documents went out to all the well-known storage manufacturers whose systems were already being used by Munich Re. After a six-month tendering phase, the reinsurer opted for NetApp solutions. "When all was said and done, this partner impressed us across all areas," explains Keiler. "It provided the most technically sophisticated solution that fulfilled all of our requirements. Above all, no other competitors were able to offer such comprehensive and flexible options for automation. So far, the collaboration with NetApp has been and continues to be absolutely trustworthy and has even become an excellent partnership. And finally, the service provider also met our budgetary requirements with regard to not only the investment costs, but also the savings that were made possible
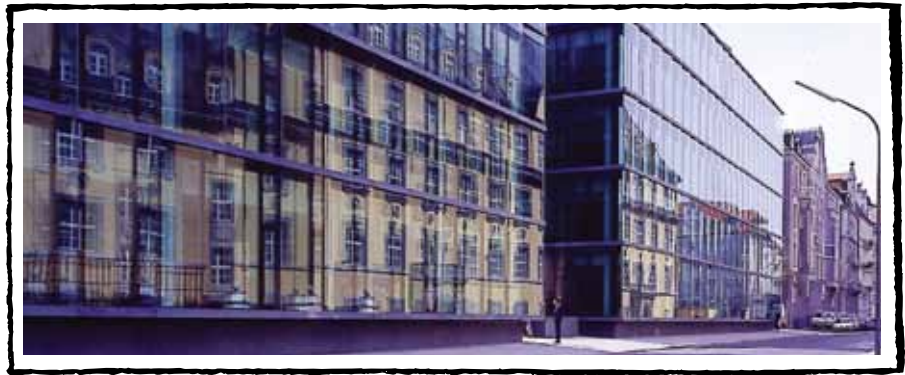
by the operation, maintenance, and required capacities."

The infrastructure in the two data centers, which, in the event of a disaster, can automatically replace one another, now includes four FAS6240 MetroCluster systems for the NAS and SAN as well as a FAS3240 MetroCluster system for archive data and two FAS3270 Near-Store® systems for backing up the NAS data SAN. In addition to this, the SAN has been extended with eight edge switches. The central production database is located on the fully redundant FAS6240 MetroCluster system. This is used to perform backup and archiving. In terms of software packages, in addition to the functions integrated in the NetApp Data ONTAP® operating system, virtually all of the features of NetApp are used—for data deduplication, mirroring, backup, or to guarantee high availability. The latter is secured by NetApp MetroCluster through transparent recovery, so that business-critical applications can continue to be used almost without interruption. Among other things, the software enables interruption-free upgrades so as to minimize scheduled downtimes, as well as automatic failover to reduce unscheduled downtimes. The NetApp OnCommand® management software supplements an effective and efficient administration of the data storage infrastructure.

Migration completed one month ahead of schedule

The hardware and software were delivered at the turn of the year 2011/2012. After the hardware had been installed by the middle of February alongside the migration of 100TB NAS data and 500TB SAN data, Munich Re scheduled the overall acceptance test for the end of April 2012, therefore one month earlier than planned. "Thanks to the considerable personal dedication of all those involved and their efficient, professional approach, we were able to conclude the project more quickly," says Keiler. "There were no major issues, and NetApp was even able to surpass all the requirements, such as the tight deadline. This meant that we saved not only costs, but resources too. That said, the speed of the execution did not in any way affect the quality of the work. Since the commissioning, the data storage infrastructure has been running smoothly and totally reliably."

Fujitsu Technology Solutions (FTS), a long-standing partner of both Munich Re and NetApp, has been handling the daily running since May 2012. In order for the service staff to perform their work quickly and reliably, they were trained by NetApp experts and provided with detailed documentation. The development, installation, and migration of the new infrastructure were carried out by NetApp as a general contractor.

This is quite unusual for the service provider, but happens more and more in the case of large clients or special projects.

The Benefits
Consolidation and standardization
The new infrastructure has reduced the quantity of data storage systems from 23 to 9. At the same time, standardization was carried out on NetApp solutions of the FAS6200 and FAS3200 series as well as on Brocade DCX-4S backbone hardware and 8Gbps Brocade 5100 switches. NetApp Data ONTAP 8 is now used throughout as an operating system. The support matrix, configurations, storage designs, and naming conventions were also standardized. This makes it much easier to manage the infrastructure; less time is needed for the administration, and time and costs have been reduced accordingly.

Automating the data storage processes
"The new solution also offers various options for the automation," explains Keiler. "After it has been fully installed, NetApp OnCommand Workflow Automation (WFA) requires the respective user to input just a few details, and then it handles the compliance with the defined standards virtually independently. It then takes just a few minutes to set up any automated data storage processes.

By using extensive automation, in the future we will be able to reduce ongoing operating costs and also decrease the time required for management." The workflows can be performed either directly in OnCommand WFA or using the Munich Re orchestration tool.

Saving storage space
Alongside achieving the main objectives of Munich Re, NetApp enables additional savings, especially where storage space is concerned. This is achieved through six technologies: the deduplication reduces the necessary capacity by up to 53% by eliminating duplicated blocks. Savings of up to 80% are enabled by Snapshot™ copies, because it is only the data that has been changed that requires storage space. Virtual clones through FlexClone® save around 58% with the SAP® split-mirror-backup. A reduction of 35% is achieved by an efficient compression of the NAS data. Thin provisioning by FlexVol® releases capacities of between 20% and 33%. And large-scale aggregates reduce the necessary data storage space by up to 20% while simultaneously enabling easier management and better performance. Overall, the new infrastructure alone was able to reduce the capacity requirement by 280TB. When we consider all the NetApp products installed at Munich Re, we actually see savings of 800TB on required data storage space

through updating the existing systems and the consistent use of the NetApp efficiency functions.

Enhanced scalability and expandability
The NetApp solutions also guarantee high scalability thanks to the modular structure of the building blocks comprising hardware and software with specified performances. Moreover, the system can be expanded with additional machines for new load profiles. It's also easy to integrate new technologies on account of the standard compatibility. Of course, the performance in this project played a minor role, but the NetApp solutions guaranteed optimum values here too. That said, making sure of high availability was extremely important, and NetApp MetroCluster was able to guarantee this throughout.

Smooth collaboration
"We are more than satisfied with all aspects of the project," summarizes Keiler. "It was concluded ahead of schedule, even though the scope was expanded by an archive system during the term. All the objectives were fulfilled, and we even achieved a high added value through the flexible automation processes, and a considerable savings of required data storage capacity. This was made possible only by smooth collaboration with the colleagues at NetApp. It was with well-founded

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specialist knowledge and considerable dedication that they surpassed all our requirements and were always a very pleasant business partner. And that's why we've never regretted making the strategic decision to have one storage provider."

The journey continues

Due to the extremely positive experiences with the NetApp solution, Munich Re is planning to expand the current infrastructure of the two Munich data centers to another data center. However, the Munich journey with the new system has not yet come to an end. Further automation is planned. Furthermore, a new architecture based on clustered Data ONTAP is currently being tested. This is possible because all the components are now based on the same core and can easily be updated to new technologies.

SOLUTION COMPONENTS	
NetApp Products	**Logging**
NetApp FAS6240, 3270, 3240	CIFS
NetApp MetroCluster	NFS
NetApp OnCommand management software	FC
NetApp OnCommand Workflow Automation	**Environment**
NetApp Snapshot	Oracle® databases
NetApp SnapRestore®	SAP production, testing, and development
NetApp Snap Creator™	Microsoft® SQL Server® databases
NetApp SnapDrive®	Microsoft Exchange
NetApp SnapVault®	File service (UNIX® + Windows®)
NetApp SnapMirror®	VMware® ESX®
NetApp FlexClone	VMware VDI
NetApp SnapLock®	

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