



Redundant NAS environment for secured service level

Reliable Services

Predictability, reliability, quality and flexibility are part of the basic principles of GAA GmbH & Co. KG. To guarantee this level to the customers, the DM specialist

needs a just as secure and reliable IT infrastructure. In this case, the company relies on the proven N-TEC technology.

The GAA GmbH & Co. KG became specialists in microfilm and microfiche processes already in 1972. Located in the tradition-steeped city of Friedrichsdorf/Taunus, Germany, the company evolved into a specialist in the area of document management. This includes, among other things, the areas of scanning, incoming mail, document management systems (DMS) and file storage. In the process, the company regards itself as a partner of the customer and not just as a pure service provider. Trust in their reliability, securi-

ty and the high level of their services is the basis of the business.

GAA understands the creativity of the employees as the motor for their innovative solutions. However, the DM specialist knows that it is still technology that is a means to an end. A solid technical infrastructure ultimately ensures the reliable and secure background of digital data, which is the core of the business in the industry. The company decided to use proven N-TEC systems which, in combination with their qualified employees,

convey flexible, contemporary and economical solutions to the customers.

„We need to manage a considerable number of customer documents which requires a high degree of security and reliability,” explains René Unbekannt, IT consultant and developer at GAA. „We can only achieve the guarantee for our high service levels with the corresponding IT. High failure safety, replication possibilities in the NAS environment or redundant components are just some of the criteria that our infrastructure needs to fulfil.“

Small files – large problem

With its headquarters in the picturesque Taunus Mountains and further locations in Frankfurt/Main, Verden and Hamburg, the company currently has approximately 100 employees. The IT team has ten employees.

In the area of document management, GAA GmbH & Co. KG must handle a myriad of small files every day. About 20 employees scan these customer documents. Altogether 40 colleagues then process these documents, which entails further data traffic. In search of a suitable IT environment, Unbekannt was not just concerned about NAS functionalities but also about replication or mirroring possibilities in real time within this environment. Data volumes of 16 to 20 GB of small files need to be replicated in real time to a different building every day. The solution had to be highly failure safe and quickly restorable in case of an emergency. In addition, the responsible data processing person saw the planned systems as a central storage location for all customer data, and thus as a volume expansion to the existing IT infrastructure.

„Our IT team was looking for a solution that could replicate high data volumes in real time, but divided into small files,“ Unbekannt describes the initial situation. „This large database is primarily composed of small files, such as image files, which have an average size of 50 to 100 KB. Files numbering more than 50 million small files quickly accumulate. We must and we want to mirror and/or replicate them close to real-time in another building. Just that alone is a great challenge to the systems and the required application.“

As high failure security needed to be guaranteed at the same time,

only a redundantly set up solution was eligible, which had to be powerful and solid as well as demonstrate a good price-performance ratio.



Replication of 50 million files: High performance is guaranteed using the replication solution installed on two rapidNAS MS208 systems

N-TEC technology as solid basis

The IT team surrounding René Unbekannt ultimately decided on a NAS solution from N-TEC, which was implemented at the entire head office of the company. The rapidNAS MS 208 and rapidNAS MS316 systems were chosen. Both models were acquired as a redundant pair and were each implemented in the central as well as the secondary IT location.

N-TEC delivered the rapidNAS MS 208 systems, each equipped with eight 750 GB SATA-II hard disks. Each single device thus supplies a gross capacity of 6 TB. These systems were easily integrated in the existing environment, as they support protocols such as CIFS, NFS, HTTP, FTP, Apple File Protocol, DFS and NTFS as well as integration in W2K domains. For failure safety, the systems have redundant fans and power units. In terms of data safety, the products

support RAID levels 0, 1, 10, 3, 5, 6, 50, and 60. The two rapidNAS2008 devices operate in an active-passive configuration. This means that the NAS partitions of the active system are replicated on the passive device. In doing so, high-speed replication occurs at block level with compression of the delta files. This

in turn means: only the changed data are secured after a first complete synchronisation process. This increases the speed and reduces the network load.

Both of the rapidNAS MS316 were each equipped with 16 SATA-II disks with a 750 GB capacity. They therefore provide a total of 12 TB memory. These systems also have redundant components and support the above-mentioned protocols as well as RAID levels 0, 1, 10, 3, 5, 6, 50, and 60, and the JBOD function. Both of these models are also configured in active-passive mode, where the NAS partitions from the active system are replicated on the passive device. Only the delta files are replicated here as well.

All four systems are configured with RAID-6. In addition, one hard disk each also functions as a hot spare. Thus, the entire configuration is protected against multiple disk failure. The individual models are supplied with 50 GB for the

operating system. GAA GmbH & Co. KG uses Windows Storage Server 2003 R2. Roughly 100 GB are reserved for the application responsible for the replication - Double-Take in this case. The rest of the storage space is intended



René Unbekannt is an IT consultant and developer of GAA GmbH & Co. KG. He set the following requirements for the memory infrastructure of his NAS environment:

- High availability (24x7)
- Replication of large data volumes in real time
- Fast disaster recovery
- Great failure security through redundant components and data stock
- Simple administration

for the data, or for an eventually needed online expansion. About 2 TB are available for this. If circumstances demand it, the IT manager can also decide to have a cluster configuration, where the passive system assumes all memory processes in the event of an active system failure. An active-active configuration is also imaginable to achieve optimisation through load balancing.

Both rapidNAS pairs are located in the main building and at a secondary site. This is only 400 metres away from the main building. Both model pairs are connected by network. The data is transferred over respectively one dedicated network card and over respectively one dedicated subnetwork. The data is transferred from the main building over the secured network connection to the second IT building.

„In our line-up, one of the two systems works as source and the other as target,“ explains IT consultant Unbekannt. „The redundant design of the configuration provides us with an enormously high failure safety. Moreover, we save time during replication because we only replicate the delta files and don’t have to constantly transfer the entire data stock.“

Simple replication with Double-Take

The N-TEC devices provide the hardware basis, and the Double-Take application by Double-Take Software is used for the replication task. This tool ultimately replicates the files in real time and quickly restores all digital information, should this become necessary.

„By using the N-TEC devices and the Double-Take software, we can replicate a data volume of roughly 16 to 20 GB in small files in real time to another building,“ says Unbekannt. „Should the source server fail, then the target server mirror is used instead. Tests showed that up to now, the software can process about 52 million files without problems. If there are fluctuations in the network, then this is intercepted by a file queue. The queue is processed step-by-step until complete synchronisation is restored.“

Fast implementation, easy to use

The IT team of GAA GmbH & Co. KG decided on the N-TEC solution after many tests showed that the competitive products were unable to handle the mul-



Easy implementation: It took only one hour to put the replication solution into operation

titude of small files in real time. The rapidNAS systems in conjunction with the Double-Take software ultimately stood up to the requirements of the GAA environment.

„We chose N-TEC not the least because we were looking for a pure storage provider,“ explains René Unbekannt. „If there were questions, the employees of N-TEC were always immediately available and supported us with help and advice. Furthermore, the project was implemented quickly and smoothly. The first NAS pair was already delivered in January 2008. In April, we received the second pair. The implementation was made extremely easy for us. We needed about an hour for the commissioning, with the installation in the server cabinet taking up the most amount of time. The rest was really very easy, as N-TEC



High availability of data: Double-Take is an optimal solution for protection and recovery of business critical data

had already set up an exemplary replication.“

Unbekannt means the easy operation using the system GUI, but also the easy installation of the systems. The manufacturer delivers these already pre-installed and tested. This resulted in a Click-N-Use situation for the responsible data processing person. The actual installation, so Unbekannt, was limited to „connecting“ and „commissioning“, which only took about an hour's time.



Minimal costs, optimum performance, solid basis: The solutions for data replication coming from N-TEC require only a minimum effort for integration and administration and at the same time reduce the consumption of energy

More than just NAS

The N-TEC storage provider based in Ismaning, Germany, was able to offer more than just NAS functionality to GAA GmbH & Co. KG. The good scalability, high failure security through redundant design and the replication of many small files in real time spoke for itself.

„The solution by means of rapidNAS is very expandable and very economical,“ says Unbekannt. „There are as good as no running expenses, and administration normally takes only a few minutes a day. Only two employees in our team

need to take care of the rapidNAS solution. The systems themselves send emails in the event of a fault.“

Centralising the data on the NAS systems also resulted in a gratifying consolidation effect. Previously, the company created time-controlled backups individually on all servers. This always resulted in a „hole“ within one day that could have caused data loss in case of a possible system failure. The N-TEC solution centrally secures the data and additional servers were economised, which in turn meant there was more

space in the server room and less power consumption and cooling expenditure. The administration effort is just as low and restricted to just a few minutes, or mouse clicks, per day. Maintenance gaps cannot occur due to the proactive system notification in the event of a defect. The use of Windows Storage Server also simplifies the operation even more.

A convincing argument during the project implementation was the advice, the know-how and the support from N-TEC, which made GAA GmbH & Co. KG always feel well cared for and supported. Although no further projects

are currently being planned, as scaling within the systems is still possible, Unbekannt would still recommend the N-TEC solutions at any time.

„We are very satisfied with our N-TEC NAS replication solution,“ so René Unbekannt. „A simple and fast installation, good consultation, an excellent solution of the initial problem and a good price-performance ratio is simply convincing. We can build up trust with our customer with such a trustworthy IT base. Reliable service can only arise from a good backend. Reliability and quality for data - that's what we stand for. And we can only provide that with a corresponding IT infrastructure.“

Imprint

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