

## Siemens AG

### Leading German Electronics and Electrical Engineering Group Backs Up its Data With Veritas NetBackup 6.5



The Industry Automation Business Unit of Siemens' Industry Sector provides products and systems for process and production automation as well as building technology. It's hardly surprising that the division has to deal with a large volume of business-critical data, which is why data backup is accorded top priority in this Siemens sector. In order to render backup and recovery even faster and more efficient, the decision was taken to upgrade to Veritas NetBackup™ 6.5 software from Symantec™. This solution not only enables data backup to be performed more quickly, but allows central and efficient backup administration. Siemens' Industry Sector can thus cope with data backup and recovery in a small team.

#### ORGANIZATION PROFILE

Siemens AG (Berlin and Munich) is one of the world's biggest and best established electrical engineering and electronics companies. Founded 160 years ago, Siemens supports its customers in some 190 countries with innovative technologies in the fields of industry, energy and healthcare.

#### INDUSTRY

Electronics and electrical engineering

#### SOLUTION

Backup and Recovery

#### Efficient Data Backup is Accorded Top Priority

**“Deduplication has enabled us to significantly reduce the volume of data to be saved. Savings of around 80 percent can be achieved with a deduplication factor of five to six.”**

#### Michael Geiges

Process Owner Backup & Recovery, Industry Automation Business Unit, part of the Industry Sector at Siemens AG

As far as companies are concerned, the loss of data spells one thing above all others: the loss of money. It can cost millions if systems crash. It's hardly surprising then that data backup is an extremely important topic in the majority of IT departments. Siemens is no different, and has been so for some time. The IT department operates with clusters, so that data backup and recovery only have to be resorted to in an absolute emergency. But they still have an important role to play. Should a data crash cause the Group's delivery center systems to fail, goods can no longer be either received or shipped. “That sort of thing can't be tolerated for more than a couple of hours at most. The systems have to be up and running again by then,” says Michael Geiges, who is in charge of backup and recovery and whose responsibilities include compliance with stringent Service Level Agreements. His 15-strong team attends to backups in the big Karlsruhe and Erlangen computer centers, and at the Nuremberg Moorenbrunn, Amberg, Chemnitz, Fürth, Regensburg, Frankfurt am Main and Munich premises.

All this sounds as though a large team is required. But as each of the team members is also responsible for performing other tasks, the number of full-time specialist staff working on backup and recovery amounts to only 4.5 in total. Michael Geiges' team members are stationed on site at the various locations in case they are required for physical system intervention, for instance to exchange a defective tape. This form of direct support not only benefits the (internal) customer, but makes it easier to comply with the Service Level Agreements.

Reliable data backup and rapid recovery are given top priority at Siemens AG. Data must be recovered quickly should it be lost despite system clustering. And Siemens' Industry Sector relies on Veritas NetBackup 6.5 to do the job.

### Data Growth of Around 10% Per Annum

Backup has to be performed for 1,500 systems, servers, and workstations running a variety of applications, from the file and mail system, SAP, Oracle and Siebel through to SQL and SharePoint. The monthly backup volume is currently 1.5 petabytes, with data growth of around 10 per cent per annum in the existing business, plus an additional rise resulting from new business and the start-up of further servers. Despite this growth, Group management has stipulated certain targets with a view to achieving savings.

An efficient data backup solution is therefore a priority for Siemens – which has been using NetBackup 6.5 for about six months. Siemens has already opted for solutions from Symantec before, whose NetBackup Version 3.4 was also deployed by Siemens. Prior to that, data was backed up with Veritas Backup Exec™, another solution from the Symantec product range. This backup solution—at the time still a Veritas product—was, and has remained, one of the leading products of its kind. However, Backup Exec was eventually replaced by NetBackup owing to the rise in the volume of data and the increasingly heterogeneous operating systems used.

### Rapid Deployment Program Enables Fast, Hassle-Free Upgrade

Michael Geiges has also chosen Symantec products—and not only in the area of IT solutions. He also enlisted the company's support in an upgrade project, choosing the Symantec Rapid Deployment Program, which is specifically designed to speed up implementation of NetBackup 6.5. It involves a fast, two-phase rollout concept and the work started with an upgrade assessment, answering questions such as, what is the state of the current backup environment? Have all the conditions for a smooth upgrade been met? How high are the migration costs likely to be?

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**Michael Geiges**

Process Owner Backup & Recovery  
Industry Automation Business Unit, part of the  
Industry Sector at Siemens AG

## SOLUTION AT A GLANCE

### Business Drivers

- Introduce reliable data backup and rapid recovery which can be administered efficiently

### Technology Challenges

- Provide backup and recovery in an extremely large, heterogeneous IT environment
- Centralize monitoring of backups at various locations

### Solution

Centralized data backup enables data backup to be performed more quickly

### Symantec Products

- Veritas NetBackup™ 6.5
- Veritas NetBackup PureDisk™
- Veritas™ Backup Reporter

### Technology environment

#### Servers:

- SUN™ Sparc Prime Power
- HP® UX 11.11

#### Operating systems:

- SUN Solaris
- Windows® 2003
- Linux
- CenterraOS

#### Applications:

- SAP® on Oracle
- Oracle® databases
- Windows® SQL 2003
- SharePoint™ 2003/2007
- Windows® Exchange

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It took ten days for a Symantec consultant and Geiges to perform a detailed analysis. The result was a realistic assessment that made it possible to complete the upgrade itself within two days. On top of this, around 60 days were required to roll out the new features. Here, again, the company profited from the in-depth know-how of the on-site Consultant. “The Symantec expert was completely at home with the new technology and he knew how to approach the upgrade in our heterogeneous environment,” Geiges recalls. “What’s more, the Rapid Deployment Program put us in direct contact with the development team.” This close cooperation made it possible to clarify directly with them any issues that arose along the way.

### Disk Staging Makes for Efficient Storage

Since the upgrade to NetBackup 6.5, which took around a week per location, Geiges and his team have been able to benefit from innovative functions such as disk staging. This makes for more efficient data backup by using an intelligent lifecycle policy to categorize the data according to priority. If there is no longer enough disk space available for a backup, all lower-priority data is first removed from this storage medium and copied elsewhere, e.g. to tape. This ensures that all higher-priority data can be restored particularly quickly in case of emergency.

Moreover, Siemens benefits from the enhanced VCB interface to VMware® provided by NetBackup 6.5. This makes for faster and more direct backup. What was previously only possible via LAN and scripts can now be done directly and is a standard feature of the new Symantec solution.

### Backup Time Almost Halved

In the Siemens branch office in Amberg, the team is using the Symantec NetBackup Pure Disk™ solution. Its disk-based data backup optimizes storage utilization and network bandwidth consumption while simplifying recovery. PureDisk is used to save Amberg’s data to disk and replicate the data to Karlsruhe. Amberg thus makes use of the option of incremental backup on the block level. Only the data blocks

that have actually changed since the last full backup are saved. This saves time and, more especially, disk space. This is because PureDisk enables global deduplication by preventing storage redundancies across the entire infrastructure. Duplicate files and file blocks are backed up just once, even if they are held on different servers. This minimizes the volume of backup data and enhances efficiency. “Deduplication has enabled us to significantly reduce the volume of data to be saved. Savings of around 80 percent can be achieved with a deduplication factor of between five and six.” Michael Geiges planned the Amberg model as a pilot project. “We intend to store all our data centrally in the long term,” explains the IT specialist.

Even though NetBackup 6.5 has not been deployed for long, the improvements it has brought about are already in evidence. Data backup is significantly quicker since the upgrade. A full backup of all systems now takes only around one-and-a-half working days instead of the previous two-and-a-half. If Michael Geiges starts the backup process on a Saturday morning, it is now completed by lunchtime on Sunday and doesn’t drag on into the early hours of Monday as before.

### Using Media Server Load Balancing to Distribute Peak Loads

The media server load balancing function has proved particularly useful in speeding up the backup process. All servers are backed up via a media server pool, in which the server with available capacity is selected to perform the backup. This pool thus balances server utilization. If, for example, two backup servers had to be used to save the data on 800 servers under the old system, each one backed up 400 servers a piece. “This could sometimes lead to a situation where one of the backup servers took far longer than the other to complete the task – for instance, if the servers for which it was responsible had a larger volume of data to process,” explains Michael Geiges. This cannot happen with media server load balancing. The new process ensures that the load is evenly distributed. It is not the number of servers to be backed up that is crucial, but the volume of data on the respective serv-

## BUSINESS VALUE AND TECHNICAL BENEFITS

- Provided the organization with enhanced customer satisfaction
- Delivered reliable data protection
- Introduced centralized and efficient backup administration
- Reduced the volume of data to be saved by around 80% with deduplication

ers. Each media server dynamically takes on one backup job after another until all the backups have been completed. “Media server load balancing allows us to balance peak loads and distribute work equally between the media servers. Pooling has made the process 30 to 40 per cent faster than before.”

### Minimizing Administrative Effort

It was not just the fast and reliable backups that convinced Geiges of the merits of the NetBackup 6.5 solution. Another crucial factor was the reduced administrative effort required by himself and his colleagues to operate the system: “Veritas NetBackup plays a significant role in enabling us to cope with data backup and recovery in such a small team as ours.” Veritas™ Backup Reporter is important for efficient administration. It evaluates the entire environment and shows at a glance whether all the backups have been successful. Backup Reporter also displays trends in respect of data growth or outliers. Michael Geiges’ ‘customers’ also make use of Backup Reporter information, which can be called up in the team web for this purpose. “The development departments in particular keep a very close eye on whether all their data has been saved. Backup Reporter creates the necessary transparency.” And that’s not all: the Backup Reporter statistics also have an important role to play in terms of compliance and Sarbanes-Oxley requirements.

Michael Geiges and his colleagues are responsible for the backups of 40,000 users in total. Around 100 to 200 of these lose data each month and require restores. In addition to restores required after the mistaken deletion of files, hardware defects and logical errors following patch updates can also cause system failures – although fortunately this only happens occasionally. Restores have thus far always been possible within the terms of the Service Level Agreements (SLAs). “It is extremely important to comply with the SLAs, even when supporting internal customers. If we failed to do so, we would have to supply detailed reasons in writing, and we really don’t have time for that.”

Michael Geiges sets great store by being able to contact Symantec at any time. So, despite the presence of an on-site consultant, he has selected the Business Critical Support package in case he requires additional Symantec support. This means that he has fixed contacts at Symantec who can be reached around the clock: “This has the benefit that the staff there are familiar with our infrastructure and can provide rapid assistance.” And that is another crucial factor when it comes to reliable data backup.