The MHH cleaned up 2.7 PB of medical data on NetApp storage using ProLion DataAnalyzer

HIGHLIGHTS

Sector: Healthcare provision

The challenge: Modern imaging procedures result in an increase in data volume at a rate of 1 TB per day. Without transparent facts, it is impossible to discuss subjects such as data removal, multiple storage, investments and data security with either operators or managers.

The solution: The DataAnalyzer provides detailed insight into the entire NetApp storage system at the touch of a button. The results are compiled in Excel and form the basis for internal cost allocations and for managing 1.7 PB of data.

Customer Profile

Since it was founded 50 years ago, the Hannover Medical School (MHH) has evolved into a leading facility in the healthcare sector and is almost a small town in itself, boasting a total area of 400,000 square metres. 30,000 people are on site at peak times. The MHH is one of Germany's largest clinics in terms of its research capacity and healthcare provision; and it is also an independent university.

The challenge: data volume that increases at the rate of 1 TB a day, a huge task for analysis and storage management

At the MHH, medical advancements have resulted in a huge increase in data volume of up to 1 TB a day: already reaching a total of 2.7 petabytes. The following examples make the reasons for this increase clear: Since the 1990s, imaging processes have been stored digitally in high resolution as it is not possible to compress such files. In the field of computer tomography, the improved quality of the images has also resulted in an increase in the amount of data. Due to the high number of patients, this is an enormous multiplying factor. In the increasingly popular field of keyhole surgery, the HD films created for documentation purposes are also archived.

In the field of next generation sequencing research, 4 TB of data relating to the human genome has been generated for analysis of DNA sequencing. The results of the analyses also need to be stored. If this increase continues at the current rate, the amount of data stored at the MHH will double in just 28 months.

All the data is stored on the NetApp storage system, which presents a number of challenges for the IT team at the MHH. Each month, an enormous amount of effort goes into the analysis process, to accurately estimate the projected increase in data for planning purposes, and to enable the compilation of realistic reports for the department managers. Allocating memory usage to internal customers was extremely time consuming, but it is absolutely necessary in order to ensure that any acquisitions are carried out in good time and that appropriate reasons are given for this. Important reasons for optimising monitoring include data security and data protection regarding the growing threat posed by Ransomware. Until now, the administrators were not adequately equipped to tackle such attacks quickly.

The solution

"The introduction of the DataAnalyzer quickly showed us that this solution is a very good and almost unique addition to the NetApp storage system", says Detlef Amendt, Team Leader at RZ Technik at MHH, about the decision. The DataAnalyzer is installed on the server, where it automatically analyses enormous amounts of data via an interface and compiles the results as Excel reports. This makes it possible to manage storage more efficiently. During the first phase, 6 licences were implemented that currently monitor one of three NetApp clusters. The integration of further systems is planned for the future; these will also be analysed and monitored by the DataAnalyzer. This will also be implemented shortly, but the scope of the systems must first be agreed upon, because the MHH not only has large amounts of data, it has also supplied an unusually large number of volumes, namely around 800. Working together with ProLion these demands will soon be met and additional reports will be compiled.

Benefits

Insight into data structure and transparent allocation to departments By using HSM – Hierarchical Storage Management – data is automatically transferred onto tape when it is not used very often. But automation requires regulations, explains Detlef Amendt: "Doctors are like squirrels, they store everything. With the DataAnalyzer we can now prove that some data has not been touched for 3 years and that removing these would dramatically reduce costs.

Or that our customers need to invest in new storage systems. We are talking about costs in the region of the price of a small car, and the transparent presentation of facts is a great help during discussions with customers." Alexander Lehr, System Administrator for the MHH storage system adds: "We can save vast amounts of time that used to be spent compiling weekly reports for the various departments. We have long since recouped the money invested in the DataAnalyzer. Thanks to the reports, we were able to react promptly to a number of ransomware attacks. The affected areas were detected immediately and promptly restored using NetApp's snapshot technology." The reporting should also give users more opportunities to save resources by using the analyses to recognise what data can be archived.

Any damage inflicted by ransomware is promptly detected and rectified Encrypted data from ransomware has unfortunately become a regular occurrence. The DataAnalyzer's alarm engine recognises altered file endings and sends a warning. The quicker the incident is detected, the less serious the damage, elaborates Alexander Lehr: "The DataAnalyzer opened our eyes to what is really happening to the data, right from day one. Thanks to the fast detection, we are able to restore the data from the snapshots and the users do not even notice. If this affects a department with 250 people, it makes an enormous difference in cost if everyone has to wait 1 minute instead of 3 hours."

BENEFITS:

- **The analysis of data according to type, size and age provides clear facts for discussions with internal customers and for cost allocations.**
- **Automatic routines for removing data free up costly storage space.**
- **ansomware threats are detected quickly and the data is restored without compromising the users.**