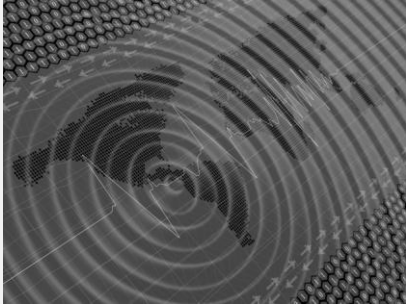


GEOFIZYKA TORUŃ

Geofizyka Toruń streamlines the management of large datasets



ESSENTIALS

Industry

- Geophysical services

Organization size

- 1,450 employees

Challenges

- Consolidate the management of large datasets
- Simplify IT infrastructure, and maximize storage speed and performance

Solutions

- EMC Isilon X-Series

Results

- More reliable IT infrastructure
- Greater stability of critical applications
- Significant increase in user productivity and effectiveness
- Streamlined IT operations

OVERVIEW

Geofizyka Toruń (GT), founded in 1966, offers a wide range of integrated geophysical services for the oil and gas exploration industry. The company conducts seismic and well logging operations to examine geological structures with a focus on conventional and unconventional oil and natural gas as well as geothermal resources of an area. GT has an extensive international presence and is an official contractor for major E&P companies, such as Chevron, Eni, ExxonMobil, GSPC, Oil India, PGNiG, Shell, and Total.

CHALLENGE

GT uses dedicated applications to process and interpret seismic data at its Seismic Data Processing Center. The applications are used by more than 50 analysts in four independent labs that process the data in different stages.

All together, GT systematically stores, manages, and processes about 100 terabytes (TB) of production data using an IBM iDataplex dx360M3 and Sun Fire X4100 server farm running SeisSpace/ProMAX, GeoDepth, and Echos software for seismic data processing.

The seismic data processed by GT and stored on several NetApp, Sun Fire X4500/X4540, and NexentaStor SC 846 disk arrays was becoming difficult to manage due to disparate islands of data. The system hampered storage management, made capacity usage inefficient, and caused capacity shortages, even though capacity was physically available. When one disk array contained data from different projects, it often became overloaded, which made it difficult or even impossible for multiple users to work efficiently.

After a multithreaded task was started, the array was used so intensively that other users who tried to access the data experienced significant delays, and applications stopped responding. The capacity and productivity of the whole infrastructure was also limited because geospatial applications are used every day by employees to process large datasets. As a result, the demand for large-capacity storage was not only very high but also rapidly increasing.

GT needed a solution to consolidate the management of large datasets, while simplifying its IT infrastructure and maximizing storage speed and efficiency.

CUSTOMER PROFILE

SOLUTION

Before choosing a particular disk array, GT thoroughly evaluated its needs against the available solutions. In the last phase of its decision-making process, the company tested three competitive solutions: IBM SONAS, Panasas ActiveStor 12, and EMC® Isilon® X200. As a result of its testing, GT selected Isilon X200. The tests confirmed that Isilon X200 was the only solution to achieve the required productivity while using GT's existing network infrastructure. GT found that even intensive data-saving did not prevent other users from accessing data. An important advantage of Isilon X200 was its simple configuration and the fact that it requires no adjustments after implementation. This meant that GT could start a big analysis project right after powering-up the Isilon cluster.

Isilon was designed to store large datasets and work with applications that require high efficiency and sequential throughput. The Isilon X-Series deployed at GT ensures the best throughput-to-capacity ratio, which satisfies the needs of companies that work with the most demanding geospatial applications, while it ensures optimal data storage costs.

"Every day, we store and process huge amounts of data related to seismic research and geophysical measurements. We are observing continuous progress in the field of computer technologies, tools for geospatial analysis, and technologies for ground examination. However, all these modern systems require a great efficiency, flexibility, and capacity that cannot be ensured by traditional storage solutions. EMC Isilon allows us to develop our business; implement innovative, pioneering measurement methods; and meet our customers' expectations by delivering services quickly and effectively," notes Michał Słupski, ICT Manager for Geofizyka Toruń S.A.

The Isilon platform delivers a high level of reliability and enables accurate management of both capacity allocation and data array performance. The solution makes it possible for GT to automatically distribute the flow, and ensures continuous data access at the application level, as well as in the case of failures of two disk expansion chassis. Advanced performance monitoring allows users to perform a detailed disk array load analysis and create reports on the disk array condition, as well as the potential bottlenecks, also on the application side. Isilon also provides advanced control and allocation of specified storage resources to particular departments and individual users.

The whole Isilon system was deployed by Logon S.A., an Authorized EMC Reseller.

RESULTS

The Isilon solution markedly increased the reliability of GT's IT infrastructure and the stability of its critical applications. In the case of a system failure, Isilon does not terminate the connection and allows data processing to be completed. This is particularly important at GT, where data processing can last several days, and any disruption in data availability can cause serious delays.

Isilon has also contributed to a significant increase in user productivity. Even an intensive data-saving process does not prevent other applications from accessing data, and the delays experienced by interactive users do not exceed one second.

"Individual labs in our organization work on the same data. In the previous system, when one of them was using a disk array in sequential mode and another one was in random access mode, we used to experience performance issues. This is why we were looking for a solution that would enable both the high throughput and I/O. The tests we performed before deployment confirmed that EMC Isilon provided and maintained the required performance in all operating conditions," explains Słupski.

GT has also deployed EMC Isilon InsightIQ™, advanced efficiency monitoring software that analyzes disk array load usage in detail. The software made it possible to identify incorrect application usage. Moreover, GT implemented EMC Isilon SmartQuotas™, an advanced tool designed to manage capacity allocation. This made it possible to allocate capacity on multiple levels; for example, to a unit within the organization as well as to individuals within that unit. It also made it possible to identify and solve problems connected with the incorrect use of system memory. Temporary files that are not deleted on time by one user do not prevent other users from accessing the disk array.

The solution also considerably improved the functioning of GT's whole system and streamlined the IT department's operations. "Isilon significantly streamlined the IT department operations. The system is largely self-operating and does not require continuous monitoring. Moreover, an appropriate amount of working memory is allocated to all labs and in some cases even to individual users. Flexible allocation management minimizes the risk of inefficient memory usage. If needed, Isilon offers the possibility to grow the system quickly, as adding a new node takes less than a minute," summarizes Słupski.

For many years, GT experienced problems with insufficient capacity and system efficiency, which the Isilon solution also eliminated. With Isilon, the causes of poor application performance no longer need to be analyzed manually. With the Isilon solution, energy costs decreased, storage management was simplified and centralized, and infrastructure and wiring were simplified. All of these improvements translated into significant financial savings for GT, and enabled its IT specialists to manage their time more effectively. Moreover, thanks to the solution's massive scalability (the system is now using 10 nodes and has the capacity to expand up to 144), Geofizyka Toruń can make seamless additions to its infrastructure in the coming years, when it plans to launch new projects that require more and more data processing.

CONTACT US

To learn more about how EMC products, services, and solutions can help solve your business and IT challenges, [contact](#) your local representative or authorized reseller—or visit us at www.EMC.com/Isilon.

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