

# CNPC CHUANQING DRILLING ENGINEERING

Research center meets data-intensive demands with Dell EMC Isilon



## ESSENTIALS

### Industry

Oil and gas

### Company Size

4,000 employees

### Business Challenges

- Storage of massive volumes of data
- Scale capacity and performance for analysis
- Manage growing administrative complexity

### Results

- Achieved a 33 percent reduction in costs
- Increased data accessibility and protection
- Accelerated workflows and efficiency resulting from single volume storage
- Provided platform for future big data analytics

### Solutions

- Dell EMC Isilon X410
- Dell EMC Isilon SmartQuotas
- Dell EMC Isilon SmartDedupe

## Accelerates seismic data analysis

A subsidiary of China National Petroleum Corporation, Geophysical Prospecting Company of CNPC (Chuanqing Drilling Engineering) provides engineering and technical services to the oil and gas industry in China and across the globe. Its services include engineering and geological research, geophysical surveys, drilling engineering, downhole services, mud logging, well logging and perforating, oil and gas field engineering construction and development, civil works, and oil and gas field cooperative development. The research center within the organization specializes in the processing and analysis of seismic data for oil and gas exploration.

Chuanqing Drilling Engineering runs data-intensive, high-performance computing (HPC) environments for seismic exploration within the oil and gas industry. The company needs to process, analyze, and store vast quantities of exploration and production data, and make it accessible to geoscientists and engineers. Chuanqing Drilling Engineering also runs a number of industry applications, including Omega seismic processing software, CGG Geocluster seismic processing software, Paradigm, and Landmark exploration and production software to analyze raw field data. The organization deployed a number of SAN storage systems to handle massive growth in data from its exploration activities. However, the research center was unable to scale both capacity and performance to support the high-performance calculations required. Seismic data sets could not be shared, further reducing the effectiveness of the center's work. Data analysis was becoming increasingly challenging as was the management complexity required to support multiple systems.

Chuanqing Drilling Engineering looked to migrate its seismic data to a single volume of storage, and partnered with Dell EMC® to deploy Dell EMC Isilon® scale-out NAS as the storage platform for its research center.

“Isilon storage is far easier to manage and has resulted in considerable savings. We estimate that we’ve achieved a 33 percent reduction in costs.”

Chuanqing Drilling Engineering

In deploying Dell EMC Isilon storage, the research center has consolidated all seismic data assets onto a single volume. It now has a highly scalable, high-performance platform to meet the demands of its exploration activities and data analysis. Datasets remain highly accessible, protected, and available for reporting and improved business decision-making. Chuanqing Drilling Engineering now has a platform in place to handle both data type diversity, including 2D and 3D seismic data, and support data protocols such as HDFS in the future.

## Environment

Chuanqing Drilling Engineering implemented a single cluster comprising Dell EMC Isilon X410 with 23 nodes, providing a capacity that can be scaled up to 1.6 petabytes. The Dell EMC Isilon solution includes Dell EMC Isilon SmartQuotas, which enables the research center to allocate space to particular divisions and users according to workflows and demand.

To ensure cost-effective management of its massive data demands, Dell EMC Isilon SmartDedupe is helping to maximize the storage efficiency of the cluster by eliminating duplicates.

## Delivers cost and management efficiencies

The research center is benefiting from the ease in which storage can be scaled and different quotas can be allocated to workflows and divisions within the company. This has resulted in both management and cost efficiencies in meeting its storage requirements. A representative of Chuanqing Drilling Engineering says, “Isilon storage is far easier to manage and has resulted in considerable savings. We estimate that we’ve achieved a 33 percent reduction in costs.”

## Accelerates workflows

In moving from SAN storage to the Dell EMC Isilon X410 scale-out NAS, Chuanqing Drilling Engineering has the ability to scale up to 50 petabytes in a single volume. The solution meets the data-intensive demands of the oil and gas industry, helping the research center accelerate complex, mission-critical workflows. This includes running HPC environments that extract, transform, and load seismic and associate data for parallel processing and interpretation.

According to Chuanqing Drilling Engineering, the team can now check the status of workflows through the dedicated interface, which reduces management time and helps ensure smooth operations.

## Improves productivity and accessibility

The research center can now use Dell EMC Isilon scale-out storage throughout the exploration and production workflows that involve interpretation and modeling. It has eliminated the need to manage data from disparate storage solutions. Now users have a broadly accessible shared pool of data, increasing productivity and making data accessible across the center.

“The improved performance, the ability to allocate storage to different users and divisions, and the ease in which we can quickly scale on demand, are all features of Isilon that are contributing to the productivity of our researchers and scientists,” says a representative of Chuanqing Drilling Engineering.

## Company Overview

Chuanqing Drilling Engineering provides engineering and technical services to national and international companies in the oil and gas industry. The research center within the organization is involved in the analysis and interpretation of seismic data for oil and gas exploration.

## Establishes platform for the future

Finding the right platform to collect, analyze, and drive decisions in an efficient, agile way is critical to oil and gas companies. Dell EMC Isilon storage is providing the research center with a platform to support its future growth.

"It is inevitable that data volumes will increase in the next few years. With that in mind, we need strong technical support from our IT partners. We chose Isilon because of the assurance we have from the Isilon team and the evidence we have seen since deployment that our technology will work exactly how we need it to."



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