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Francisco Ortigosa
Chief Geophysicist,
Maxus

REPSOL YPF   **MAXUS**

Maxus US Exploration

Repsol YPF [NYSE: REP] is an international integrated oil and gas company engaged in all aspects of the petroleum business, including exploration, development, production, refining and marketing of crude oil and natural gas. Repsol YPF is one of the top ten private oil companies in the world and the largest private energy company in Latin America, with an average daily production of 1.2 MMBOE. The company and their subsidiaries place a high value on technological innovation to support their business goals, and views the continuous search for excellence in technology as a key competitive advantage.

SUMMARY

Industry:
Oil and Gas

THE CHALLENGE

Repsol YPF wanted to increase their competitive advantage and generate new business opportunities more expeditiously. They were looking for a solution to deliver processed seismic data more quickly to their interpreters and make faster and better business decisions.

THE SOLUTION

The fully integrated software/hardware solution included the Panasas® Operating Environment and the PanFS™ parallel file system with the Panasas DirectFLOW® protocol.

THE RESULT

• Up to 11X performance improvement

• A single namespace for simplified cluster management

• Ease of integration

The Challenge

Repsol YPF, through their American subsidiary Maxus US Exploration, recently began subsalt exploration in the deep and ultra-deep waters of the Gulf of Mexico. "We quickly realized that proprietary Pre-Stack Depth Migration (PSDM) provides the competitive advantage necessary for success in the Gulf of Mexico," said Francisco Ortigosa, Chief Geophysicist at Maxus. The company decided to create an in-house seismic processing solution in its Houston, TX, office to maximize the value added to the PSDM processing of 3D seismic data. "We believe that the best value added during PSDM process comes from the time spent by our interpreters building the velocity model and adding geological significance to it," said Ortigosa. "The goal was to maximize the compute power in an effort to minimize the amount of time necessary to process the data, thus leaving ample time to our interpreters."

For the compute side of the solution, Maxus deployed a powerful Linux cluster. The cluster provided fast access to the data, but it was quickly determined that the local disk attached to the nodes

would soon become a bottleneck. "As we were building our system, we quickly realized that we needed an exceptionally fast storage system," said Ortigosa. In addition, the company understood that as data capacity grew, eventually the local disk would complicate system management. Because of this, the need to scale capacity in a single namespace became critical to the solution. Finally, knowing that the system needed to be installed and running in a short period of time, made seamless integration into the existing Maxus infrastructure essential.

The Solution

Maxus purchased Panasas® Storage because it packages the highest performance in the storage industry with a scalable, easy to integrate and manage storage system. Maxus deployed a Panasas Storage Cluster, and immediately saw the performance benefits. "After an exhaustive search, it was clear that Panasas delivers the fastest storage system in the industry," said Ortigosa. Panasas does this by leveraging an object-based architecture to provide direct disk to client access. This enables exceptional bandwidth

performance, a key requirement to seismic processing applications.

In addition, Panasas offers a solution that scales in capacity and performance within a single namespace. While other systems lose performance and increase management touch points as capacity requirements increase, the Panasas Storage Cluster is able to actually increase performance and capacity within a single data source. Also important, the integrated SW/HW solution from Panasas seamlessly deploys into data center environments, eliminating installation costs and optimizing the company's time to solution.

The Result

Since deploying the Panasas Storage Cluster, Maxus now focuses on their competitive advantage -- analyzing data -- in a faster, more comprehensive fashion while maintaining the best processing quality. "The significant performance improvements provided by the Panasas Storage Cluster allow us to focus on what we do best, interpreting seismic data and generating new business opportunities," said Ortigosa. Tangibly, the company has seen up to 11X performance improvement in processing routines with the Panasas system. Realizing more data is on the horizon, Maxus is confident knowing that the Panasas Storage Cluster will be able to not only meet their performance needs, but also scale within a single system to meet their long term capacity and management needs.

Equally as impressive as the system's performance capabilities was the ease in which the system installed into the existing environment. "Out of the box, the system was integrated effortlessly into our infrastructure," said Ortigosa. Complementing the exceptional product offering, the Panasas service and support team has provided key insight in optimizing the entire cluster environment. "The Panasas team has been extremely helpful in sharing best practices for the entire cluster computing solution," said Ortigosa. "Their insight has been invaluable in enabling us to achieve our key business goals."

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About Panasas

Panasas, Inc., the leader in high-performance scale-out NAS storage solutions, enables enterprise customers to rapidly solve complex computing problems, speed innovation and bring new products to market faster. All Panasas solutions leverage the patented PanFS™ storage operating system to deliver exceptional performance, scalability and manageability.

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