

EMC Exploration and Production Infrastructure for Oil and Gas



EMC storage helps one of the world's largest oil and gas companies gain time-to-market advantage in exploration and production

Challenges

One of the world's largest publicly traded oil and gas companies manages risk and uncertainty with EMC® Exploration and Production Infrastructure (EPI) and Schlumberger Petrel, an advanced software solution for exploration and production (E&P). Petrel generates enormous volumes of data for the mission-critical work of geophysicists, geologists, engineers, and executive decision makers. Ultimately, tens of billions of dollars of potential revenue ride on well-informed decisions and the process requires an information infrastructure that provides exceptional performance, reliability, and scalability.

When Schlumberger introduced Petrel, the customer was uncertain if its legacy NetApp infrastructure, running UNIX/Linux-based applications, would be the best choice for Petrel, which is Microsoft Windows-based. A new storage area network (SAN) solution might be better suited for the advanced earth modeling and reservoir characterization capabilities of Petrel. No matter the choice, performance and platform resiliency, combined with excellent service and support, were essential, particularly for the remote locations such as the jungles of Nigeria or tiny islands off the coast of Russia.

EMC Exploration and Production Infrastructure

To help determine the most appropriate solutions for its SAN and NAS requirements, the company used a sophisticated procurement system that ranks technology providers across hundreds of criteria, including system architecture, pricing, partnerships, and services.

In the SAN arena, EMC demonstrated excellence in the architectural design of the EMC CLARiiON® storage system, as well as in services and key partnerships, particularly with Schlumberger. The customer decided to standardize on the CLARiiON CX3 series, now deployed in more than 200 locations around the world. The customer's CLARiiON systems support Petrel with nearly one petabyte of aggregate storage, which is growing at roughly 300 terabytes each year. The customer also uses EMC Navisphere® Management Suite software to centrally manage, monitor, and configure its CLARiiON SANS from a user-friendly web browser. In addition, the company employs a disaster recovery strategy by using EMC MirrorView™ software to replicate data to an alternate site where it then performs backups from copies generated by EMC SnapView™ software.

Based on its success with EMC CLARiiON SANS, the company chose to replace its legacy NetApp devices with EMC Celerra® unified storage systems in NAS environments. The Celerra NS series not only met the company's multi-protocol requirements, but also enabled rapid deployment in isolated exploration sites by E&P operations staff with minimal IT support. The ability of Celerra to quickly scale up to 100 terabytes without impacting performance was yet another factor leading to the NetApp replacement.

Business Profile

Challenges

- Legacy storage not meeting the performance requirements of a critical exploration and production application
- Required a flexible storage platform that could support the new application based on Microsoft Windows, as well as support existing UNIX/Linux-based applications
- Hundreds of remote E&P operating sites necessitated an easy-to-install, easy-to-manage solution to reduce IT support costs

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- EMC CLARiiON CX3 series storage area networks
- EMC Navisphere Management Suite software
- EMC MirrorView and SnapView
- PowerPath® for failover and load balancing
- EMC Celerra NS series/unified storage

Benefits

- Faster, more reliable access to critical data supporting global exploration investments worth billions of dollars
- Rapid installation and scalability of high-performance storage in exploration sites provide quicker access to potential revenue streams
- Reduced IT storage administration staffing needs by two-thirds, helping to significantly lower IT support costs and freeing valuable resources for other tasks

In addition, the company engaged the EMC Global Services organization to train a select team of its own IT personnel. The customer paid to have this “tiger team” trained to a level equivalent to an EMC customer engineer so they could independently install systems, replace parts, and support the remote sites. To further ease the IT management burden, EMC developed and supplied custom spare parts kits.

Benefits of the EMC Exploration and Production Infrastructure

The improved performance driven by EMC’s CLARiiON and Celerra systems, key components in the EMC Exploration and Production Infrastructure, played a vital role in optimizing the Petrel environment. Together, EMC EPI and Schlumberger Petrel enable the company’s scientists to generate prospects more quickly by providing faster, more reliable access to critical geophysical and geological data used for earth modeling and reservoir characterization.

The high-availability (five-nines) and advanced replication/backup capabilities of EMC storage platforms and software ensure that expensive exploration projects can continue without disruption in the event of a disaster.

The ease of deployment of EMC platforms enables the company to quickly outfit new E&P operating offices while significantly reducing deployment costs. The modular architecture of these systems also provides the company with a cost-effective, reliable way to rapidly scale in response to sudden changes in storage demands without fear of over- or under-provisioning.

The simplicity of managing EMC Information Infrastructure using EMC Navisphere eliminated complexity found in legacy NetApp systems. Navisphere automated storage administration helped the company redeploy almost two-thirds of the associated IT staff to other duties.

Remote staffing and support costs were further reduced by utilizing the EMC Global Services organization to train an in-house team of IT personnel. This allowed the company to not only be self-sufficient, but to also speed up problem resolution as company staff were able to communicate more efficiently and effectively with EMC support staff.

In the end, the company has been able to successfully leverage EMC’s EPI performance to decrease its time-to-oil, minimize downtime risk associated with data availability, and ultimately reduce costs by eliminating complexity and unnecessary IT staff. As proof of the improvements and benefits obtained, the customer has awarded its coveted “Top IT Vendor Award” to EMC for three years running.



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