

CYPRESS E&P CORPORATION

High-performance exploration



CHALLENGES

- Needed scalability, redundancy, and high-fault tolerance with high-performance environment
- Vast amounts of seismic and well data to manage and analyze

SOLUTIONS

- EMC Isilon Scale-out NAS Storage Platform
- Seismic Micro-Technology (SMT) Kingdom Suite

KEY BENEFITS

- Unified data to centralized network storage with single namespace
- Improved security as no data stored at each workstation
- Protected against file corruptions and with a clear path of recovery

BRINGING OPTIMIZATION AND SCALABILITY TO HIGH-PERFORMING APPLICATIONS

Geoscientists have many options for exploration tools and applications—but delivering data access to these tools and protecting vast amounts of data is an ongoing IT challenge for oil and gas companies. Cypress E&P selected SMT's Kingdom Suite, a Windows®-based exploration and production application, for its ease of use and wide range of techniques to analyze data. Eric R. Bass, Director of Information Technology, says, "My goal is to assemble the highest performing technologies I can find into a powerful yet flexible platform to run our company on...With SMT Kingdom running on EMC® Isilon®, I can focus on building the infrastructure and providing support to enhance what Kingdom does for our company, keeping our exploration team productive."

As a Windows-based tool, SMT has proven useful for the specialized needs of exploration companies. It has offered the flexibility and scalability required for innovative new workflows. Pairing the right storage solution with SMT applications has resulted in an optimal solution for those in the oil and gas exploration industry.

Early on, Cypress was a DAS environment; the SMT application and projects were running on individual workstations with no consolidation of data. The DAS file server model did not provide the performance necessary to host projects on the network—particularly over 10/100 Ethernet. Bass was managing disparate silos of storage and found even with RAID, hard drives would fail and volumes would be lost. 3D seismic and well data had to be loaded separately on each workstation, complicating data management. "Backing up in an effective way was a nightmare," he said. Geoscientists were worried about the security and accessibility of data and were concerned about having data reside on separate workstations. Keeping all the projects current was a never-ending battle.

MOVING TO AN OPTIMAL STORAGE PLATFORM

Bass started on the first phase of consolidation, taking pieces of data off the workstations and putting it on the network. He purchased an IP storage area network (SAN) storage system but quickly found inherent limitations because data and applications aren't accessed through a file server. Cypress now had centralized storage and data protection, but they also had a bottleneck at the file server in front of the storage. It was a particular problem for Cypress—they still couldn't fully centralize projects and therefore couldn't use SMT solutions to their fullest potential. "Moving data to the network was a big improvement but without scalable high throughput file sharing on the front end, we had to connect workstations directly to their own volumes on the SAN, making project consolidation and data sharing very difficult," Bass said. With a need to centralize their projects and maximize the benefits of their SMT solution, they realized that a new approach to centralized storage—one that would make data available to all clients simultaneously—was required. After considering other storage options, Cypress determined that Isilon scale-out network-attached solution (NAS) was the ideal solution.

Today, Cypress has unified their data on a single global namespace, eliminating the inherent risk of data being stored at each individual workstation. “We’ve moved all of our geoscience software projects to our centralized network storage, so now everyone can work with the data and we don’t have the bottleneck of file servers in between. Our SMT environment in particular has benefited greatly from the Isilon storage cluster.” Bass offers this advice for IT Managers facing similar challenges and choices: “Before you settle for older storage technologies—whether they be DAS, SAN, or even simple NAS—take a close look at the Isilon scale-out clustered NAS approach and consider the tremendous performance and flexibility it will give you in storing and managing data in your enterprise.”

ISILON SOLUTION

Cypress purchased their first Isilon nodes two years ago. As of October 2009, they have expanded to five 6000x nodes for 26TB of usable capacity. Most importantly, they have been running at 83 percent utilization with no security or performance issues. Bass says, “Isilon offers great redundancy; the SnapshotIQ™ technology gives us point-in-time snapshots to step back to on-the-fly updates if needed.” Now, we are protected against file corruptions and have a path of recovery.” Isilon’s web-based UI also enables Cypress to manage their storage cluster remotely.

Compared to earlier storage solutions he utilized, Bass has seen his time spent on storage management take a dramatic turn—for the better. “The way the Isilon storage runs, unless I just want to monitor performance stats, I can ignore it for weeks at a time. I rarely have to do any tweaking to the system and the only storage administration I need to do is data management and create new folders,” he says. Bass says on a day-to-day basis he likes to keep his management console open to keep an eye on performance, utilization, and percentage of capacity—but he wouldn’t be concerned if he didn’t.

About Cypress: Cypress E&P Corporation is generating and drilling prospects primarily in the deep, highly pressured Wilcox trend of the Texas Gulf Coast. Cypress utilizes 3D-based exploration tools, and has also implemented projects to evaluate remote sensing technologies including passive seismic, magnetotellurics, radar, airborne gamma, soil gas, and other techniques.

About SMT: Seismic Micro-Technology, Inc. (SMT) developed the first geoscience interpretation tools for the Windows environment. SMT exploration and production software is used by geoscientists in 95 countries.

“When organizations use Isilon with SMT, it’s really smooth and they get the performance they need.”

BOB TUCKER
DIRECTOR OF SUSTAINING ENGINEERING AT SMT

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