# Enabling sound oil and gas exploration decisions

Dawson Geophysical collects complex data at a vast scale, processes information centrally and hands projects to clients faster using Dell EMC Isilon storage and PowerEdge servers

**DAWSON**

Oil & Gas | United States

## Business needs

Innovation in the field of multi-component seismic data acquisition technology challenged Dawson Geophysical with processing vast, complex data volumes and delivering consistently high-quality projects to clients quickly.

## Solutions at a glance

- Dell EMC Isilon scale-out network attached storage

- Dell EMC PowerEdge servers

## Business results

- Delivers seismic data acquisition projects in 3 days instead of 10

- Enables larger data acquisition projects than competitors can offer

- Can scale to as many servers as data volumes and projects require

- Allows easy, rapid storage upgrades and expansions

- Achieves consistent data-processing quality

- Maintains sustained throughput rates of 40 Gbps or faster

*"We deliver larger seismic data acquisition projects than anybody else in the continental U.S. by centralizing on Dell EMC."*

Philip Lathram
Vice President of IT, Dawson Geophysical Company

Dawson Geophysical Company provides onshore seismic data acquisition and processing services that enable U.S. and Canadian clients in the oil and gas industry to optimize their exploration and drilling of commercially viable subsurface deposits of crude oil and natural and shale gas. The company is a leader in its field because of its technological innovation, such as multi-component seismic data acquisition and processing.

Following innovations in seismic data acquisition, Dawson field teams found it challenging to support the massive volumes of seismic data collected at their survey sites. Initially, they used dedicated storage arrays with raw block storage, which limited the quantity of data they could acquire. The storage arrays presented speed and availability issues. Processing quality was inconsistent among teams, requiring the company to take extra steps before delivering data to clients.

## Centralizing data processing with Dell Technologies solutions

To address these concerns, Dawson moved data storage and processing to its headquarters, using Dell EMC Isilon storage arrays and Dell EMC PowerEdge servers. Jace Gregg, information systems manager at Dawson Geophysical, says, "We accomplish more consistent data output quality and can process much larger jobs than we've ever been able to do in the field after centralizing on Dell EMC Isilon storage and PowerEdge servers. Isilon also has the scalability of the storage options we reviewed."

"*It was easy to upgrade and expand our Isilon storage and benefit from steady performance improvements.*"

Jace Gregg
Information Systems Manager
Dawson Geophysical Company

In deploying Isilon storage, Dawson began with NL400 series nodes, expanding repeatedly before adding X410 and NL410 arrays and, most recently, implementing 12 H500 nodes to arrive at a total storage capacity of over 4 PB, with 3.41 PB usable in the Isilon production cluster. The Isilon storage replaces several Infortrend Fibre Channel devices that demonstrated capacity limitations in the field. "It was easy to upgrade and expand our Isilon storage and benefit from steady performance improvements," says Gregg. Dawson uses Dell EMC PowerEdge rack servers—the latest generation of PowerEdge technology, engineered for superior performance and automation. Most of the PowerEdge workloads involve proprietary software to manage hardware-based data acquisition.

## Larger projects, delivered faster

Following the centralization, field crews can focus on data acquisition instead of processing and, as a result, Dawson has become more competitive. Philip Lathram, vice president of IT at Dawson Geophysical, says, "We deliver larger seismic data acquisition projects than anybody else in the continental U.S. by centralizing on Dell Technologies. By deploying the right number of servers for any job, we can process unprecedented data masses, such as 1.2 PB on a recent project."

Dawson's services today are faster than ever. "Large projects that would have taken 10 days with just one server we now complete within three days on Dell EMC PowerEdge servers," Lathram states. "We use multiple Isilon nodes concurrently to cut delivery times. The Isilon OneFS file system is crucial in achieving these results."

## Scalable, efficient, dependable storage

Isilon storage offers Dawson a desirable combination of efficiency and performance. Gregg notes, "To store 1 PB of data on the newest Isilon arrays only requires half a rack unit instead of two and half of the previous power draw. Throughput rates are consistently at 40 gigabits per second or faster." To take full advantage of Isilon technology, data managers are transferring data from older storage systems. "We can very quickly access and transmit data from legacy data acquisition sources to Isilon," Gregg adds.

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## Rapid project processing allows prompt decisions

Recently, Dawson added storage capacity to accommodate more projects from large clients. "Following on-time delivery, we quickly installed our new Isilon arrays and took them into service immediately, without any issues," says Lathram. Clients directly benefit from Dawson's use of Isilon storage. Gregg explains, "Isilon allows Dawson to run multiple, simultaneous projects for a client. Because of the increased performance of the H500 nodes, we can process 1,000 square miles of very dense projects quickly. This rapid turnaround not only expedites the drilling decision for our clients but also enables a faster timeline for their next project."

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