

## Solutions Brief

# Virtual Consolidation



VoxelVision showcases GigaVIZ on SGI Altix at the June convention of the European Association of Geoscientists and Engineers in Stavanger, Norway. Image courtesy of Schlumberger.

## Connecting Distributed Teams

The principal challenge of every global company IT manager is installing and maintaining an IT infrastructure that has the ability to adapt quickly to a changing business and takes full advantage of price and performance. At a time when so many industries are becoming distributed across the globe with ever-smaller staffs, that task becomes all the more challenging. SGI provides the high-performance computing, visualization and storage tools to keep global companies functioning smoothly and profitably.

The war cry of companies governed by Moore's Law is "Less is More." This is a well-lit path down which consumers of high technology systems encounter surprisingly improved capabilities at ever-declining costs. But these improvements are principally incremental versions of the same theme, with rare significant changes – with the notable exception of systems provided by Silicon Graphics for high performance, scalable, extensible, adaptable and distributed storage, computing and graphics.

SGI's new Linux® OS-based Altix™ servers provide unprecedented scalability and performance. Fed by the SGI® InfiniteStorage products, CXFS™ with shared filesystems delivers unmatched and unmatchable system performance. Completing the triad, the new ATI-enabled Silicon Graphics® Onyx4™ visualization system is the scalable, standards-based graphics solution that is revolutionizing not only SGI® Reality Center® and team room environments, but also power user and distributed and collaborative graphics throughout the technical computing enterprise.

Relying only on Moore's law will dead-end if it doesn't spawn fundamental change in – rather than a mere acceleration of – the way we work. In Information Systems, as in sport cars, piecemeal assembly of components cannot create an optimized experience. High-performance systems such as the SGI® Altix® 3000 family and Onyx4 are not accidents but rather the intentional, balanced combination of optimized systems, joined with care and focused to fit the purpose.

The energy industry, majors and independents alike, seeks work processes to support a challenging technical demographic, an increasingly distributed workforce, a step-function explosion of new data and expectations of ever more competitive financial performance. While existing systems are fast and affordable, they falter in the scalability and real-time flexibility that are the fundamentals of the next generation of information systems.

The business thus presents a challenge: seamlessly and efficiently support a decentralized workforce while retaining the cost benefits of a centralized company. These contrasting themes must be married to support advanced reservoir management and field optimization, along with outsource-heavy data management, computing and analysis. Exploration and production will benefit from this union, streamlining data management and access, interlocking the experience of global workers, saturating investment and operational decisions with both data and knowledge and delivering



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breakthroughs in cost containment and financial performance. Even more importantly, this will take fullest advantage of today's workforce juggernaut – the experience-rich, independent consultant.

In tandem with the hardware architectural revolution comes new and innovative software delivering breakthrough capabilities in fresh ways. A new product has come to market, GIGAviz™ from VoxelVision, that addresses the collaboration needs of the data-hungry energy industry through the pioneering Altix system for visualization. VoxelVision's advanced 3D-visualization system powered by the SGI Altix server is set to revolutionize quality control of seismic data processing in the oil and gas industry.

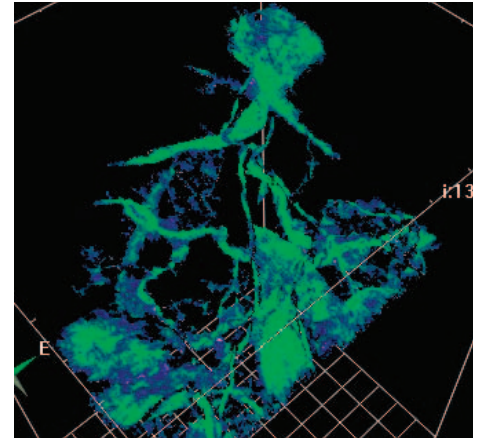
The award-winning SGI Altix 3000 server – the industry's most scalable processing technology based on the 64-bit Intel® Itanium® 2 processor, high bandwidth NUMAflex™ system architecture and the industry standard Linux operating system – runs GIGAviz to provide 3D visualization and interactive interpretation of virtually unlimited data volumes.

SGI, with our partners' serving such industries as oil and gas are creating a new infrastructure termed Virtual Consolidation. Unlike many of today's systems, which ask businesses to adapt to the technology, Virtual Consolidation adapts to business needs. These systems must face and convincingly conquer the reality that the rate of change in technology is measured in years, while the rate of change of business can be as short as months. Technologies

that may be perfect for today but not adaptable for tomorrow will transform seemingly overnight into severe encumbrances to business growth and performance.

Businesses held by the sharp talons of inflexible systems will have but two choices: wait for business needs to return to the capabilities of their information systems, or replace their systems with something new and more appropriate. While neither choice offers near-term relief, only the second offers a path forward – and, at that, only if the choice is the flexibility, scalability and adaptability SGI delivers. Otherwise, the new system risks coming on line just in time to vie for "most obsolete" against the very one it just replaced.

Virtual Consolidation is a simple concept. Data, storage, applications, computational servers, graphical servers, people, processes and services are distributed according to distribution of the business. As assets mature, are acquired, are sold or are re-invigorated, or as the finances of the business change through reduction in operating costs, incentives from governments, increase in low-cost capital or increase in commodity pricing, the information systems that support them adapt in real time. All of this exists, adapts, responds and performs, yet the view to the enterprise looks like it's contained in a single instance. This means that any user sees a single file system (make no copies, make no versions), can access all computational servers with high-speed data access, connect to real-time high performance visualization, participate in realistic collaboration and be provided instant service regardless of his or her location or desktop device.



Complex volumetric seismic attributes are isolated, imaged and visualized in GigaVIZ by VoxelVision powered by Altix from SGI. Image courtesy of Schlumberger.

Concepts do not solve business problems; solutions do. SGI serves a cross-section of global industries, sowing the seeds of Virtual Consolidation. The catalyst to harvesting this bounty will be insightful customers with clear visions of their own uncertain futures.

It is uncertainty that drives this revolution. It is uncertainty that must be tamed. It is uncertainty that will be an ally rather than a foe. But like in that sports car, the right components assembled in just the right way will allow an ace driver to navigate unexpected sharp turns at full velocity, maintain the center of the lane with no extra cost and remain ahead of their competitors. Likewise, the next information systems for global companies must adapt to both the unexpected and planned tactical turns. The Virtual Company is the vehicle, Virtual Consolidation the engine. All available from SGI today.