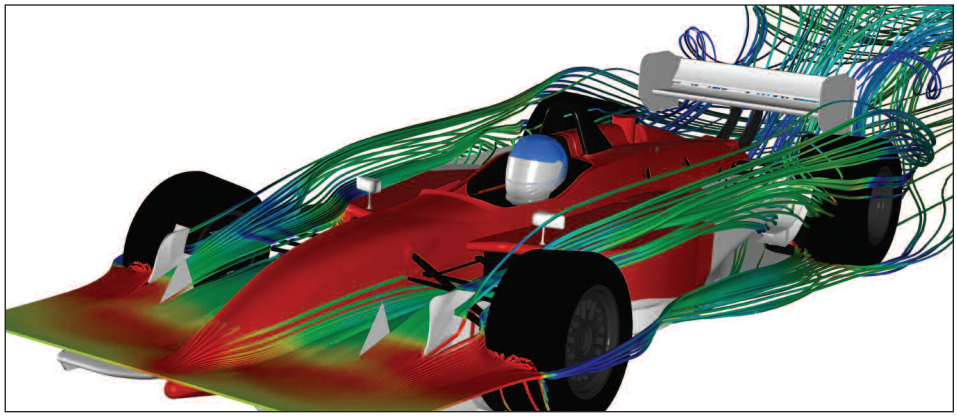
Solutions Brief

SGI® Visualization Solutions



CAE Visualization and High-Performance Computing

Accelerate Workflows with Silicon Graphics Prism™

Too Much Data, Too Little Time

How do you win in an ever more demanding global market place? Build better products? Design them faster? Lower your development costs? Whether your CAE team works with structural, fluid, thermal or multidisciplinary analysis, it's critical to achieve all of these goals.

But today's mission-critical CAE simulations can create results of 10GB to 1TB in size, and PCs have trouble with datasets of more than 2GB. The conventional approach of breaking simulation results into PC-sized chunks is tedious and time-consuming, and it can lead to faulty decisions. Can you really know which data elements are critical unless you interact with all of them? Analyzing PC-sized fragments of data cannot provide the big picture you need, so you may overlook the best solutions or even fail to identify all the problems in a design.

To accelerate your CAE process, your team needs to dramatically increase productivity and maximize opportunities for insight and discovery. A single system that combines advanced visualization with the scalable 64-bit compute, memory and I/O of an SGI® Altix® server would eliminate the need to break up and analyze fragments of data.

Redefining What's Possible

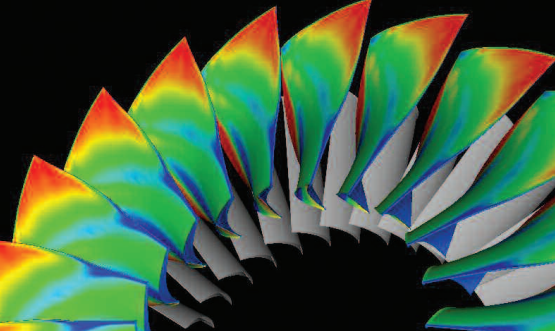
Silicon Graphics Prism provides a whole new way of accelerating your CAE workflow by seamlessly integrating the HPC power of SGI Altix servers with best of breed visualization capabilities. A single Silicon Graphics Prism system can run HPC simulations on multiple processors and visualize high-resolution results so everyone on your team can ask more complex questions and arrive at better answers, faster.

Silicon Graphics Prism is the world's most powerful and flexible Linux® OS-based visualization system with an unprecedented combination of Intel® Itanium® 2 CPUs, ATI® graphics processors, and SGI® scalable system architecture. It enables both individual users and teams to affordably work with tens of gigabytes to terabytes of data.

And benefiting from Silicon Graphics Prism couldn't be easier. You can start small and expand its compute, memory or visualization capability as the needs of your department grow. From the low entry price of US$8,500, Silicon Graphics Prism can scale to 256 CPUs, 16 graphics pipes and 4TB of memory.

Innovation Without Limits

The shared memory architecture of Silicon Graphics Prism liberates the CAE process from cluster limitations. While clusters of PCs offer acceptable performance for some HPC applications, they have drawbacks in an integrated CAE environment. Their limits



are particularly apparent in visualization where applications can randomly access 10GB to terabytes of memory and where the relationships between memory, CPUs and graphics pipes can change from one interactively generated frame to the next.

Silicon Graphics Prism excels at running both distributed memory and shared memory HPC and visualization applications. It requires only a single copy of data and leverages a single high-performance I/O subsystem. Silicon Graphics Prism imposes virtually no limit on the size of data that can be interactively visualized, enabling every CAE user to analyze full datasets at their native resolution. This means that your team can focus on global design optimization and eliminate the risk of missing significant results that span multiple data fragments.

Being able to simulate and visualize complex problems quickly on a single system not only pays off in more precise models, but is invaluable in robust design where the analysis of a large number of multidisciplinary simulations is used to uncover interdependencies and craft creative solutions.

CAE Your Way

All CAE challenges are unique and every company that solves them has its own approach. Silicon Graphics Prism adapts to your CAE challenges and your method of solving them. In today's world of complex interdependencies, it is important that individuals have the power they need when they need it and that groups can work together to reach critical decisions. A single Silicon Graphics Prism system can simultaneously support multiple individuals, groups of people working together, and the HPC requirements of an entire organization.

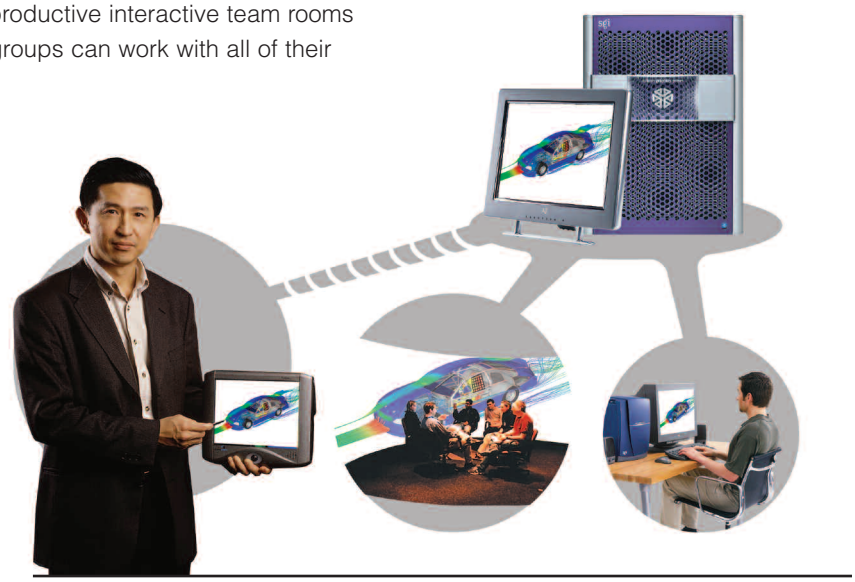
For individuals, the full interactive visualization, compute and I/O power of Silicon Graphics Prism can be delivered directly to their desktops using SGI Visual Area Networking (VAN) technology. When their CAE results grow larger than their desktop systems can handle, VAN gives them a convenient, on-demand way of accessing the more powerful Silicon Graphics Prism without leaving their office. This maximizes accessibility for individuals as well as the ROI for the organization.

For teams, Silicon Graphics Prism transforms ordinary conference rooms into highly productive interactive team rooms where groups can work with all of their data in a high-performance, high-resolution environment. This allows a team to work collaboratively rather than sequentially, averting bottlenecks that obscure problems and slow time-to-market.

Silicon Graphics Prism can also boost productivity long after your staff leaves for the day. Its integrated HPC capability allows team members to submit jobs before they leave and have their answers waiting for them when they return.

Integrated Solution, Optimum Results

Quite simply, when it comes to departmental CAE, Silicon Graphics Prism has no peer. A single system delivers the HPC and large memory visualization capabilities you need to achieve better results faster than ever before. With Silicon Graphics Prism, your team can work with all of their CAE data all of the time, design breakthrough products, and shorten product development cycles.



Visual Area Networking offers remote access and collaboration capabilities to the CAE workflow.

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