

POWER SERIES

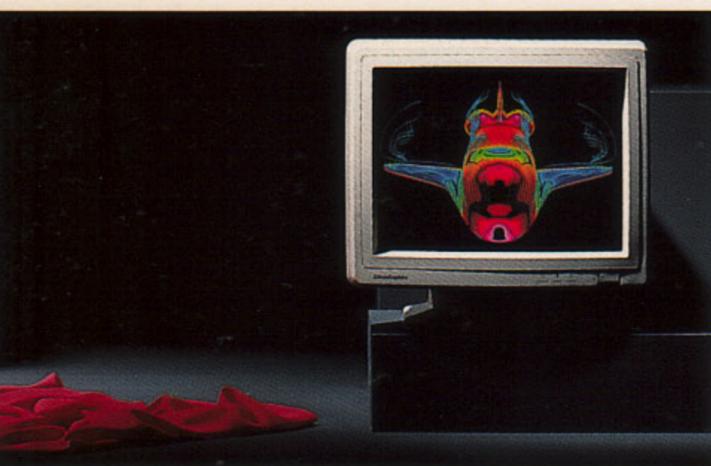
A F A M I L Y O V E R V I E W



Silicon Graphics
Puts POWER into
Technical Computing



SiliconGraphics
Computer Systems



POWER Perspective: Computational Fluid Dynamics

Showing precisely how gas or liquid flows around a particular solid body lets us know both how the fluid behaves and how it affects the solid's structural integrity. With the POWER Series, engineers have a valuable tool, not only for visualizing model development, but seeing the results of a flow calculation. Graphics Supercomputing Workstations virtually duplicate wind tunnels, with obvious applications in ships' hull design, aircraft design, and automotive aerodynamics. (Provided by Sterling Software)

At Silicon Graphics, we approach technical computing as both a strategic resource and a challenge. A resource, because intensive computer analysis offers a visionary creative tool that transcends mere data processing. A challenge, because without adequate processing technology the complex calculations involved in many scientific and engineering applications can block insights and interfere with seeing immediate, practical results.

That's why we've made it our business to provide the most advanced technical computing power to allow users to visualize information in complex engineering and science applications. Silicon Graphics leads the industry in designing and building a complete array of high performance systems with the computational processing power to mathematically generate 3D solid color objects in smooth, instantaneous motion.

In the past our innovations introduced successful, real-time desktside computing to industry tasks that formerly required minisuper or supercomputer performance. And because we're driven by our customers' needs, we've aimed at an even higher class of applications — tasks that require computational support an order of magnitude greater than ever before available in a desktside superworkstation.

Now, thanks to a proprietary design breakthrough, Silicon Graphics can offer a new high-performance group of Graphics Supercomputing Workstations and Supercomputing Servers capable of such technically superior systems analysis and calculation, we named them the POWER Series.™

What POWER Performance Reveals

The POWER Series consists of six different systems, each configured as either a POWER IRIS™ (the 4D/120GTX, the 4D/220GTX, and the 4D/240GTX) or as a POWER Station™ (the 4D/120S, the 4D/220S, and 4D/240S). Like our family of 4D superworkstations, the POWER Series handles real-time 3D computing needs for engineering, science, animation, visual simulation, and medicine.

That, however, is just the beginning. For even though we think the Silicon Graphics 4D family resemblance is a fine tradition, we've broken from the past with unprecedented improvements. Because the new POWER Series offers interactive technical computing for a new class of users and sophisticated application areas not possible before on previous graphics superworkstations.

These applications include molecular modeling, computational fluid dynamics, computational chemistry, and medical imaging. In fact, these applications require such intensive technical analyses and calculations, they previously had to take place over a network with a supercomputer in "batch" mode. Unfortunately, batch execution — even with a supercomputer — makes interactive 3D graphics impossible.

In contrast, with the POWER Series, users enjoy desktside technical computing power comparable to that of a networked supercomputer configuration — but tightly linked to a graphics subsystem. Which means users no longer need to wait for their remote batch job to finish and return delayed results. Instead, they can stay at their desks and physically watch complex calculations as they occur — such as analysis of an evolving global weather pattern model, or the changing energy state of a large protein molecule.

Making Tracks with the POWERpath Architecture

Our strategy for squeezing such startling performance from the hardware involves an extremely innovative architecture we've dubbed the POWERpath™ multiprocessor architecture.

Central to the POWERpath architecture is the use of multiple processors—2 CPUs operating at 16 MHz for the 4D/120GTX and 4D/120S, 2 CPUs operating at 25 MHz for the 4D/220GTX and 4D/220S, and 4 CPUs operating at 25 MHz for the 4D/240GTX and 4D/240S.

By putting these multiprocessors to work in parallel under IRIX™ (Silicon Graphics' version of UNIX), the POWER Series makes all its CPU and graphics subsystem resources available to the user as needed. The POWERpath multiprocessing architecture is a fully symmetric, tightly coupled implementation of multiprocessing that draws on proprietary VLSI chip design.

As you can imagine, the POWERpath architecture's technical details fill pages. However its benefits to users adds up to an elegantly simple idea. The POWERpath multiprocessor architecture can "put through" more data, more quickly, period. In fact, the POWER Series' simultaneous performance in both technical computing and graphics processing defies measurement with any standard benchmark tests. Despite its technical computing muscle, any of the POWER Series systems runs in an office environment with the same power consumption, with the same size cabinet, and with the same simplicity of maintenance as the rest of the 4D family.

Integrating POWER into Your Business

Putting the POWER Series to work with our family of Silicon Graphics products is an effortless affair. The POWER Series handles the same familiar industry standards, such as Network File System (NFS), NeWS and Ethernet

TCP/IP. Through IRIX, the POWER Series supports the major programming languages, such as C, FORTRAN 77 with VMS extensions, Pascal, ADA, and PL/I.

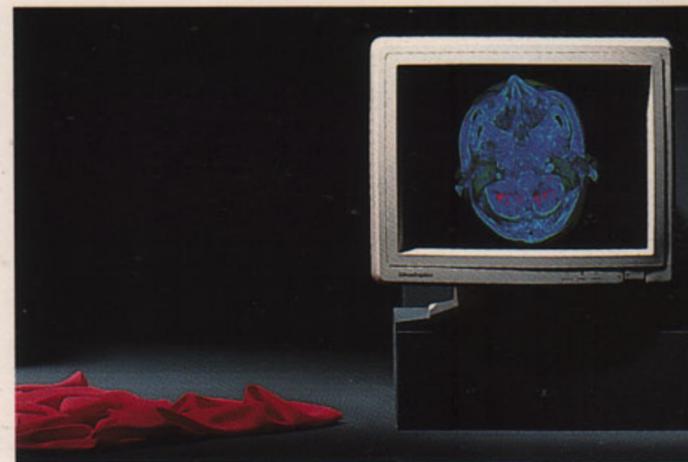
And most important, the POWER Series protects your previous programming investment with complete software compatibility, allowing the POWER Series to share existing system resources, data, and applications across networks. Besides supporting existing software, we think these Graphics Supercomputing Workstations and Supercomputing Servers will also inspire a new generation of programs, something we encourage by making it possible to develop parallel processing software for the POWER Series on any of our 4D systems.

Silicon Graphics: An Exponent of POWER

Normally, it might be surprising to expect such wide capabilities from a single company. But then we're no ordinary vendor. We've earned our clients' trust by providing worldwide field support for a broad product line, linked through a common development environment that ensures integration and a flexible growth path.

Which is why we really haven't outdone ourselves with the POWER Series. On the contrary, we're doing just what we've always done for our customers; delivering innovative technology to meet their needs with the broadest range of technical computing and workstation products in the industry.

We invite you to see with your own eyes how the POWER Series makes complex technical computing a desktide possibility. For a demonstration, or for more information on the POWER Series of Graphics Supercomputing Workstations and Supercomputing Servers call or write the sales office closest to you.



POWER Perspective: Medical Imaging

Nowhere is a precise rendering of geometry more important than for critical surgical procedures.

Using a POWER Series Supercomputing Graphics Workstation to view data from magnetic resonance imaging or computer tomography allows physicians to calculate the necessary strength of radiation beams and target them directly on a deeply embedded tumor.



The POWER Series, in addition to Silicon Graphics 4D Superworkstations and Personal IRIS Systems, make up the broadest, fully compatible compute servers and 3D workstation products in the industry.

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