

## Sun Fire™ V880z Visualization Server with Sun™ XVR-4000 Graphics Accelerator

FOR SALES REPS  
AND CHANNEL  
PARTNERS



Introducing the Sun Fire™ V880z Visualization Server:

- Featuring exceptional performance, visual quality and advanced functionality
- Powerful and highly affordable platform for volume deployment
- Sun Fire™ V880z with Sun™ XVR-4000 Graphics Accelerator delivers exceptional visual quality for large display environments
- Sun Fire V880z is highly scalable, ideal for small and large workgroup visualization environments

### Key Features:

- Up to six 900-MHz UltraSPARC III CPUs with one XVR-4000 Graphics Accelerator
- Up to four 900-MHz UltraSPARC III CPUs with two XVR-4000 Graphics Accelerators
- Up to 48 GB of system memory (16GB maximum per CPU card with six processors and one XVR-4000 Graphics Accelerator)
- Support for four video streams with 10-bit per color channel
- Genlock, framelock, stereo, and S-video support

### Top Five Target Applications

- Design/Styling and Virtual Prototyping
- Seismic Interpretation
- Scientific Visualization
- Flight Simulation/Training
- Computational Chemistry

## TARGET MARKETS

**Manufacturing:** Building upon Sun's leadership position as an MCAD workstation supplier, the Sun XVR-4000 graphics accelerator supports the premier design/styling and virtual prototyping applications for collaborative, immersive, visualization environments. With its stereo support, full-screen anti-aliasing, and geometry performance, the Sun XVR-4000 graphics accelerator is ideal for virtual prototyping applications and design reviews as well as applications such as plant design and safety.

**Oil & Gas:** Today's petroleum explorations depend on applying state-of-the-art interactive visualization techniques to vast seismic data sets while searching for hidden fossil fuel reserves. The Sun XVR-4000 graphics accelerator provides 1 GB of texture memory, full-screen anti-aliasing, and stereo support to allow seismologists to use 3D texture mapping techniques to slice through blocks of seismic data yielding a better understanding of hidden geologic features.

**Training/Simulation:** Commercial and military flight and maritime simulators typically need to provide multiple out the window displays that provide a realistic view of an environment as seen from a cockpit or operating console. The Sun XVR-4000 graphics accelerator provides the high quality anti-aliased imagery required for these applications while supporting multiple displays, dynamic video resizing for guaranteed frame rate, framelock and genlock capabilities, and 30-bit color.

**Research:** The scientific and research community increasingly relies on immersive technologies for scientific visualization, weather modeling, computational fluid dynamics research, data mining, computational steering, etc. The Sun Fire V880z server provides significant computational performance and large numbers of processors needed by these kinds of applications along with stereo viewing capabilities, full-screen anti-aliasing and 30-bit color precision.

## FEATURES AND BENEFITS

Sun continues to offer customers Value, Choice & Innovation with the introduction of the Sun Fire V880z Visualization servers.

### Value

- **Exceptional Visual Quality:** The Sun XVR-4000 graphics accelerator provides excellent visual quality through sophisticated, programmable anti-aliasing chips and dedicated frame buffer and texture memory. Anti-aliasing features on the Sun XVR-4000 graphics accelerator virtually eliminate "jaggies" on a 3-D surface and allow precise rendering of complex data with sub-pixel accuracy.
- **System Approach:** The systems-level and graphics performance of the Sun Fire V880z server helps to ensure interactive visualization of very large data sets, which are needed for collaborative visualization environments. With the UltraSPARC III architecture and a large memory capacity, the Sun Fire V880z server can provide the technology and scalability to run compute-intensive, 64-bit visualization applications.
- **World-class Services:** Whether it's a sub-\$1000 Sun Fire V100 server or a multi-million-dollar Sun Fire 15K server, they are supported by Sun's world class Services organization.

### Choice

- **Multiple Architectural Choices:** Sun offers a family of low and high-end servers and workstations to accommodate customer IT requirements. Customers can choose among Solaris on UltraSPARC, Solaris on x86 or Linux on x86 platforms.

## Innovation

- **Full Scene Anti-aliasing:** The Sun XVR-4000 graphic accelerators approach to full scene anti-aliasing couples multi-sampling techniques similar to those used by the most advanced batch software rendering systems, such as Pixar's Renderman. Multi-sampling works with all 3D primitives including dots, lines and polygons.
- **Stochastic Multi-sampling:** Sampling for the Sun XVR-4000 is handled by the FBC3 ASIC, with up to 16 samples per output pixel (depending on configured resolution). Actual sample values are stored in the frame buffer with final pixel values calculated dynamically at the end of the pipeline. The Convolve ASIC performs the multi-sample filtering step serially after the rendering is completed. In order to avoid visual artifacts (such as moire patterns), the Sun XVR-4000 graphic accelerator automatically provides stochastic multi-sampling (pseudo-random sampling within a 64 x 64 sub-pixel grid). The final color at each pixel is determined by application of a 5 x 5 programmable filter in the Convolve ASIC that uses a weighted average filtering of all the samples within the pixel area.
- **Bandwidth and Interconnect:** With the Sun Fireplane Interconnect, Sun Fire V880z Visualization Server continues the tradition of providing superior memory and I/O bandwidth along with predictable performance and scalability under demanding loads. The Sun XVR-4000 graphics accelerator consumes approximately 2 GB/second of the Sun Fireplane Interconnects maximum of 4.8 GB/second bandwidth leaving plenty of bandwidth for the system CPUs and application programs.



Sun XVR-4000 Graphics Accelerator

## Sales Tips

1. Why Sun?  
Sun offers a complete visual collaboration solution that includes:
  - Powerful scalable servers, and Storage solutions
  - Leading graphics solutions, APIs & tools, and display partners
  - Availability of premier applications optimized for Sun's visualization systems
2. When the customer needs a large group visualization center that includes visualization conference rooms for small group visualization, CAVEs, and immersive desksides, all of which use multiple projectors or displays and require the best image quality for the large screen environment.
3. When the customer needs to visualize very large datasets that cannot be handled by a PC or a workstation
4. When the customer is in manufacturing, education/research, or oil and gas and demands are stringent on visual quality (anti-aliasing) for design/styling and virtual prototyping.
5. Workgroup and Large Visualization: The Sun Fire V880z server with the Sun XVR-4000 graphics accelerator represents a new product line for Sun, built-up demand and a large opportunity.
6. Sell performance and quality: Features exceptional performance, visual quality, and advanced functionality in a powerful, affordable platform, ideal for high-end visualization applications.
7. The Sun Fire V880z visualization server offers a 64-bit operating environment on a 64-bit CPU.
8. The Solaris Operating Environment eliminates recompiling because it is backward compatible with previous versions.
9. The Sun XVR-4000 graphics accelerator offers advanced feature sets such as dynamic videoresizing, S-video output, framelock, and genlock for multi-display support.
10. RAS features provide automatic system recovery, remote diagnosis capability, hot pluggable disks and PCI cards, redundant power supplies, visual diagnostic aids, system environmental monitoring, and pre-failure warning capability to maximize uptime.

Visualization has always been an essential tool for scientists, engineers, and product designers. Whether visualizing entire synthetic worlds, exploring volumes of seismic data, or evaluating the design of a complex product, technical and scientific professionals need fast graphical performance and the highest attainable visual quality.

The Sun Fire V880z is especially targeted at users who tend to use immersive 3D environments to get their jobs done such as an immersive deskside, or a CAVE, where they tend to use stereo glasses, 6 degrees-of-freedom trackers, haptic devices, and for collaborative, visualization environments such as 2-4 channel large screen environments (flat, or curved), both for small or large workgroups.

Sun XVR-4000 High-Level Features	
Feature	Sun XVR-4000 Graphics
Sun Fire V880z Support	Up to two XVR-4000 graphics cards per server.
Frame Buffer Memory	144 MB
Texture Memory	1 GB (4 x 256 MB)
Anti-aliasing	Dedicated, 5 x 5 programmable radial filter chips which compute a weighted average of stochastically jittered samples (maximum of 16 samples/pixel)
Max. 3D Resolution (30-bit color)	1920 x 1200 @ 75 Hz with 4 samples/pixel, or 1280 x 1024 @ 75 Hz with 8 samples/pixel
Multi-Display Capability	Dual 1280 x 1024 @ 75 Hz with 4 samples/pixel, or Dual 1280 x 1024 @ 112 Hz (non-antialiased stereo)
Max. 3D Stereo Resolution	1280 x 1024 @ 112 Hz with 4 samples/pixel
Dynamic Video Resizing	Yes (Results in guaranteed frame rate)
S-Video Output	Yes (can record entire screen in NTSC/PAL format)
Framelock	Synchronize multiple graphics displays
Genlock	Pixel-level synchronization to external video source, or to ensure synchronized buffer swaps between multiple graphics frame-buffers

## SUN FIRE V880z SERVER COMPETITIVE MATRIX (1/22/03)

Product Spec*	Sun Fire V880z	SGI Onyx, IR4 System	HP sv6
Anti-aliasing (visual quality)	Exceptional	Very good	Good
Dynamic Video Resizing	Yes	Yes	No
Multi-display Support	Framelock, Genlock	Framelock, Genlock	Framelock
Texture Memory	1GB (4x256MB)	1GB per Raster mgr	Up to 110 MB (unified memory)
Triangle performance Mtris/sec	60 lit, AAttris-scc	13	10
Entry Configuration	List: \$65K	List: \$143K	List: \$276K
Graphics board x option	List: \$30K	List: \$85K	N/A

## Related VSP Products

## NEW! Blade server

The blade server offers high density with redundancy and heterogeneous platform support. It is ideal for large deployment of low-workload Edge computing services.

## Sun Fire V100

Affordable, reliable and secure. That's how the entry-level Sun Fire V100 server can best be described. This 1P/1U rack-optimized server is ideal for cost-conscious customers looking for Web, Infrastructure or Edge servers.

## Sun Fire V120

The V120 offers everything that the V100 offers plus a full-length PCI slot and hot-swappable, front-accessible SCSI drives. Ideal for Web, Infrastructure or Edge servers, this 1P/1U server helps enable external storage and I/O extension at a very low price.

## Sun Fire 280R

Based on the UltraSPARC III technology and Sun's Fireplane architecture that is used on Sun's mid-range and high end servers, up to the Sun Fire 15K, Sun Fire 280R brings high end computing power to the low end server market.

## Sun Blade 2000

One of the industry's first 1 GHz 64-bit workstation's, providing leading edge compute performance, high-end 3-D visualization capabilities and one of the best price/performance ratios in the 64-bit workstation market.

## Sun XVR-1000 Graphics Accelerator

A powerful 3-D graphics tool for customers who need the best possible image. It provides multiple video output capabilities, dual display support, 30-bit color, and 360 MB of on-board memory for blazing speed.

