Sun OpenGL® 1.1.2 for Solaris™

Just the Facts

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Sun OpenGL® for Solaris™ Positioning

Sun OpenGL 1.1.2 for Solaris

Sun OpenGL® 1.1.2 for Solaris™ software provides a robust implementation of the industry-standard 3-D graphics application programming interface (API) specified by the OpenGL Architecture Review Board (ARB), for developing and deploying 3-D applications on Sun's UltraSPARC™ workstations. It enables mainstream, industry-leading, 3-D graphics and visualization applications to be deployed on Sun's Ultra™ Creator3D and Sun Elite3D graphics workstations at a compelling price-to-performance ratio. OpenGL is an API that provides 2-D and 3-D graphics functions, including modeling, transformations, color, lighting, and smooth shading, as well as advanced features such as texture mapping, NURBS, fog, alpha blending, and motion blur. OpenGL works in both immediate and non-editable display-list graphics modes.

OpenGL is targeted at developers creating interactive 3-D applications for the enterprise, the intranet, and the Internet. These developers are affiliated with ISVs or VEUs in technical markets or in research labs. Potential users include those in computer-aided design and manufacturing, global information systems, simulation, industrial design and modeling, entertainment, biochemistry, and petroleum exploration market segments.

Widespread, multivendor availability of OpenGL allows source-code portability of 3-D graphics clients. Sun OpenGL 1.1.2 for Solaris is a compliant implementation of OpenGL 1.1 from the OpenGL ARB and is, therefore, source-code compatible with other conformant OpenGL applications on the market. Most existing OpenGL applications need only to be recompiled in order to run with Sun OpenGL 1.1.2 for Solaris software.

Sun OpenGL 1.1.2 for Solaris is available for the Creator and Sun Elite3D Graphics product families, where the OpenGL functionality is accelerated in hardware. In addition, it is available on all the legacy SPARCstation™ systems equipped with SX, ZX, GX, GXplus, TurboGX™, TurboGXplus™, S24™, TCX or FSV frame buffers, which is made possible through an optimized software rendering pipeline. OpenGL 1.1.2 is also supported on third-party PCI graphics cards that have DPA (Direct Pixel Access) support in their X server DDX driver through a software pipeline.

Sun OpenGL 1.1.2 for Solaris *(cont.)*

OpenGL 1.1.2 New Features and Benefits

Features	Function
64-bit OpenGL libraries	Allows OpenGL applications to take advantage of the full 64-bit addressing in the Solaris 7 Operating Environment
Occlusion Culling Test extension	Enables applications to trivially reject occluded objects in a scene, resulting in big improvements in interactive rendering performance for visualization of large models
Improvements in DPA rendering support	Enables OpenGL rendering on PCI-based frame buffers
Constant Texture Data extension	Reduces texture mapping memory utilization and loading time
General performance improvements	Enables better performance for all supported graphics cards; in particular, there has been some substantial performance gains for Sun Elite3D frame buffers—for some applications over 100 percent

Key Messages

- Sun OpenGL for Solaris is a native implementation of the industry-standard, 3-D graphics API, and enables mainstream 3-D applications to be deployed on Sun platforms.
- Sun OpenGL for Solaris enables applications to leverage the leading-edge price/performance of Sun’s Creator and Sun Elite3D Graphics frame buffers.
- OpenGL 1.1.2 adds support for 64-bit.applications, enabling graphics applications which need access to a large memory addressing space, to be deployed on the Solaris 7 Operating Environment

Target Users

OpenGL is targeted at developers creating interactive 3-D applications for the enterprise, the intranet, and the Internet. These developers are affiliated with ISVs or VEUs in technical markets or in research labs. Potential users include those engaged in:

- Industrial model creation, editing, or visualization in the CAD/CAM/CAE market
- Content creation or visualization applications in the entertainment market
- Visualization applications in the GIS, oil and gas industry, and the medical imaging markets
- Molecular modeling in the biochemistry field

Sun OpenGL 1.1.2 for Solaris *(cont.)*

Target Markets

The Sun OpenGL for Solaris Developer packages will be of interest to application vendors investing in ports of existing OpenGL applications that do not currently run on Sun platforms, or application vendors interested in developing and deploying new OpenGL applications. The OpenGL runtime support allows mainstream 3-D applications in target market segments such as CAD/CAM/CAE, oil and gas, entertainment and medical imaging markets, to be deployed on Sun platforms.

Availability

OpenGL 1.1.2 is currently available off the web site, `http://www.sun.com/software/graphics/OpenGL`.

Selling Highlights

Market Value Proposition

Sun OpenGL® 1.1.2 for Solaris™ provides ISVs and solution providers, an industry-standard API for the creation of multiplatform graphics applications on Sun platforms. Sun OpenGL for Solaris brings the standard for 3-D graphics together with Solaris, the leading Operating Environment for developing and deploying technical and commercial applications. Sun OpenGL for Solaris unlocks the power of Creator and Sun Elite3D Graphics and UltraSPARC™ VIS™, which when combined with the high bandwidth of the UPA bus, delivers industry-leading graphics performance at a low cost. Sun OpenGL for Solaris also protects the investment of the installed base, by adding support for the legacy SPARCstation™ systems equipped with the SX, ZX, GX, GXplus, TurboGX™, TurboGXplus™, S24™, and TCX/FSV frame buffers, through a software pipeline implementation. Solaris is the only operating environment for which APIs for geometry, windowing, and imaging can be used in a single application, giving developers the ability to create sophisticated applications and to realize productivity gains in code portability and performance tuning. OpenGL 1.1.2 provides 64-bit application support, enabling graphics applications requiring access to large memory addressing, to be deployed on the Solaris 7 Operating Environment.

Features, Functions, and Benefits

Feature	Function	Benefit
Single, industry-standard, 3-D graphics API which runs across all major graphics hardware—SGI, Sun, HP, IBM, DEC, and Microsoft Windows workstations	Developers can work with a single source code pool for multiplatform 3-D graphics applications	Developers have reduced support costs and less application tuning work
Conforms to OpenGL's ARB specification 1.1	Native implementation of an industry standard on Solaris	Enhanced 3-D application portability and interoperability across OpenGL implementations from different vendors
Supports frame buffers (ZX, GX, TCX, SX) in addition to Creator and Sun Elite3D Graphics	ISVs can develop on the range of SPARC™/Solaris hardware platforms	ISVs enjoy more freedom to deploy across any hardware platform; customers can leverage their investment in current hardware
64-bit library	ISVs can link their 64-bit application with the Sun OpenGL for Solaris library	ISVs can deploy graphics applications which require large addressing space, on the Solaris 7 Operating Environment
OpenGL 1.1.2 for Solaris builds upon the performance improvements made in the Solaris OpenGL 1.1.1 release	Improved performance of 3-D graphics applications on Sun platforms, specially the Sun Elite3D frame buffers	Customers see improved 3-D graphics application performance

Compatibility

OpenGL 1.1.2 for Solaris is a compliant implementation of OpenGL 1.1 from the OpenGL Architecture Review Board (ARB) and is, therefore, source-code compatible with any Version 1.1 of OpenGL on the market. Any application that works on OpenGL 1.0 will also work on OpenGL 1.1.

Widespread multivendor availability of OpenGL (Microsoft, DEC, HP, IBM, and so on) allows source-code portability of 3-D graphics clients. Most existing OpenGL applications need only a simple recompile to run with the Sun OpenGL 1.1.2 for Solaris library. Sun OpenGL 1.1.2 for Solaris provides significantly improved application performance, making the port to Sun platforms an attractive choice for ISVs.

System Requirements

Platforms	Sun Elite3D, Creator3D, Creator, PGX, ZX, GX, TCX, and SX product families
• Operating environments supported	Solaris 2.5.1 Maintenance Update™ 3 Solaris 2.6 Solaris 7
• Window system supported	CDE or OpenWindows
Disk space	
• For end-user runtimes	32 MB for 32-bit 55-MB for 64-bit
• For developers	
– Runtime binaries and header files	44 MB for 32-bit 67 MB for 64-bit
– To build examples	54 MB for 32-bit 77 MB for 64-bit
Memory	64 MB minimum 128 MB or more recommended

Ordering

Sun OpenGL® 1.1.2 for Solaris™

The Sun OpenGL® 1.1.2 for Solaris™ developer package is available to be downloaded from:

`http://www.sun.com/software/graphics/OpenGL/`

Note: *A media copy of the Sun OpenGL 1.1.2 for Solaris developer packages will also be available on the Gr*

Glossary

API	Application Programming Interface. The interface to a library of language-specific subroutines (such as a graphics library) that implement higher level functions.
OpenGL® ARB	OpenGL Architecture Review Board. The review board that sets the standard for OpenGL applications.

Materials Abstract

All materials are available on SunWIN except where noted otherwise.

Collateral	Description	Purpose	Distribution	Token # or Comac order #
PowerPack				
– *OpenGL® 1.1.2 for Solaris™ Just the Facts*	Reference guide for OpenGL 1.1.2 for Solaris	Training Sales tool	SunWIN, Reseller web	68848
– *Solaris OpenGL 1.1 Customer Presentation*	Customer presentation (with slide notes)	Sales tool	SunWIN, Reseller web	57310
References				
– *Sun Intro — OpenGL 1.1.2 for Solaris*, 2/98	Introduction e-mail	Sales tool	SunWIN, Reseller web, E-mail	80945
– *Sun Intro — Solaris OpenGL 1.1*, 7/97	Introduction e-mail	Sales tool	SunWIN, Reseller web, E-mail	69945
– *Advanced Graphics on Sun: An Introduction to Texture Mapping White Paper, 8/97*	A white paper about texture mapping techniques	Training	SunWIN, Reseller web	67281
– *Creator Graphics: Just the Facts*	Reference guide for Creator Graphics Series 3	Training Sales tool	SunWIN, Reseller web	70123
– *Sun Elite3D Graphics: Just the Facts*	Reference guide for Sun Elite3D Graphics	Training Sales tool	SunWIN, Reseller web	75245
Competitive Analysis				
– *Quick Reference Card — Sun Workstation Graphics Products Overview, 1/98*	Reference for all graphics products	Sales tool	SunWIN, Reseller web	24507
White Paper				
– *Creator Graphics Technology White Paper*	Technical white paper	Training	SunWIN Reseller web	49269
– *Sun Elite3D Graphics White Paper*	Technical white paper	Training	SunWIN Reseller web	75265

Collateral	Description	Purpose	Distribution	Token # or Comac order #
– *OpenGL for Solaris web site for information and downloads*	`http://www.sun.com/software/graphics/OpenGL`			
– *OpenGL WWW Center (contains technical informations about OpenGL)*	`http://www.sgi.com/Technology/OpenGL`			
– *Graphics Performance Characterization (benchmark information)*	`http://www.specbench.org/gpc`			