

Open Source Java™ Media APIs

Open Source APIs extend 3D graphics, audio, and input device capabilities



Sun Microsystems delivers valuable solutions that match the company's key technologies with the needs of the games industry. At the 2003 JavaOne™ Conference, Sun released new application programming interfaces (APIs) that address three essential games features: 3D graphics, audio, and input devices. And since then, Sun has continued to refine and enhance these APIs to deliver even more features and functionality.

By distributing the APIs as open source software, Sun provides common solutions and technologies to encourage the development of great games on the Java™ platform. The APIs enable Java games developers to create PC/console-quality games by providing:

- Access to the latest features supported by 3D graphics accelerators
- Integration with the latest hardware-accelerated, 3D spatialized audio
- Access to a range of game input devices, such as joysticks and game pads

Java Bindings for OpenGL®

The Java Bindings for OpenGL (JOGL) API provides access to the latest 3D graphics features on game systems. The JOGL API brings together OpenGL, the most popular platform-independent 3D graphics API, and Java technology, the most popular platform-independent language. In addition, JOGL provides:

- Access to the OpenGL library from the Java language
- 3D hardware acceleration for Java technology-based applications
- Support for OpenGL 1.3 plus most extensions
- Support for Java new I/O (NIO) buffers for fast performance

The JOGL API is an official optional package for the Java language. In fact, it is part of Java Specification Request (JSR) 231. For more information, see jcp.org/en/jsr/detail?id=231.

JOGL demos are available at jogl-demos.dev.java.net. And for additional information or to download the JOGL API, see jogl.dev.java.net.



WURM Online (www.wurmonline.com)

Java Bindings for OpenAL

The Java Bindings for OpenAL (JOAL) API provides access to the latest 3D spatialized audio features on game systems. JOAL brings together OpenAL, which is quickly becoming the games industry-standard API for 3D spatialized audio, and Java technology. JOAL uses audio hardware acceleration when available and has the right level of basic features for games. In addition, JOAL provides:

- A thin wrapper around the native APIs, enabling developers to easily integrate 3D spatialized audio and effects into Java technology-based games
- A complementary solution to the Java Sound API, enabling developers to combine sophisticated audio mixing and synthesis with spatialized 3D sound delivery

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- The Sound3D Toolkit, enabling developers to access this functionality using object-oriented design patterns

The OpenAL API is supported in hardware on Creative's Sound Blaster Audigy 2 card and other sound cards. It is extensible, with hardware-supported extensions for EAX and AC3 from Creative. OpenAL has been used in several popular commercial titles, including:

- Jedi Knight: Jedi Academy
- AlienFlux
- Orbz
- Marble Blast
- Postal 2
- Harry Potter and the Chamber of Secrets
- Unreal Tournament 2003
- Unreal II
- Jedi Knight II
- Soldier of Fortune II
- America's Army: Operations

For additional information or to download the JOAL API, see joal.dev.java.net.

Java Input Controller

The Java Input Controller (Jinput) API supports game input devices such as joysticks and game pads as well as keyboards and mice. It is built in two layers: a system-independent layer and system-specific plug-ins.

Besides its support for multiple input devices, the Jinput API is notable because:

- Jinput is a platform-independent API that provides game controller discovery and access.

- All input control through the Jinput API can be accomplished in a polling fashion.
- The Jinput API has a pluggable architecture that can easily be extended to support other platforms or input devices, even software-only virtual devices.
- Plug-ins have been released for Microsoft Windows, Mac OS X, and Linux operating systems. The current plug-ins support keyboard, mouse, USB game controllers, and (on Intel platforms) game-port game controllers. Each plug-in uses the appropriate low-level facilities for its platform and can read any input device that native code can. For example, the Microsoft Windows plug-in uses DirectInput.

For additional information or to download the Jinput API, see jinput.dev.java.net.

Distribution

The Open Source Media APIs for game developers on java.net use an open source strategy for development and distribution. The technology is available for download using a BSD-style license for development and royalty-free redistribution. This strategy allows these technologies to be used by game developers quickly and easily. To download the latest media APIs for game development from Sun, go to games-core.dev.java.net.

About Sun Microsystems, Inc.

Since its inception in 1982, customers have continually turned to Sun to help them grow their business, lower their costs, and gain competitive advantage. Sun is a leading provider of industrial-strength hardware, software, services, and technologies that make the Net work.



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