



JavaOneSM

Sun's 2002 Worldwide Java Developer Conference

JavaTM Game Profile Update

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Sun Microsystems

Purpose

Provide an update and technical direction on Java™ technology-based games and JSR-134, the Java™ Games Profile



Speaker's Qualifications

Bartley Calder

JSR-134 Specification Lead

Contributor to the Java TV™ Specification

Architect JavaBeans™ Activation Framework

Jeffery Kesselman

10 years in the game industry

Library engineer Crystal Dynamics

Gex, The Horde, Dragon Tails, Titan

Senior Game Integration Engineer at
The Total Entertainment Network (TEN)



Learning Objectives

As a result of this presentation, you will:

- Have background on why Sun is working in this area

- Who is participating in this effort

- Understand the goals of JSR-134 (Java™ Games Profile)

- Understand the areas this project covers



Common Misconceptions

No one writes **serious** games in the Java programming language

The Java platform is too big/slow for games

Sun isn't doing anything to address the games market



Agenda

Background

What is JSR-134?

JSR-134 Scope

Technical Aspects

Demo

Status and direction

Background

Background

The US Video Game Industry sales increased 43% from \$6.6 Billion in 2000, to \$9.4 Billion in 2001 (The NPD Group)

Larger than Radio, Film, TV and Books

“Grand Theft Auto 3” for the Playstation 2 sold 2 million units between October 2001 and January 2002

Online gaming market will reach \$1.1 Billion in 2003 (IDC)



The Market for Games Technology

Active game developer community for
Java technology

Supported by www.javagaming.org website



Why Java Technology for Games?

The same old tune!

Cross platform

Code reuse

Ease of development

Availability of tools

New melody

Efficient implementations for small devices

Developer interest

Platform maturity



Is There Interest?

Games are popular applications on MIDP Devices

Sun has had a presence at:

- Games Developer Conference 2001, 2002
- QuakeCon 2001

RoboForge by Liquid Edge Games

- Robot fighting tournament game

- Developed on the J2SE™ platform

- Received an “Excellent 87%” rating from PC Gamer Magazine



What Is Java™ Specification Request 134 (JSR-134)?

What Is JSR-134?

Java™ Games Profile

JSR filed with the Java Community ProcessSM (JCPSM) program, June 2001

Defines a Java 2 Platform, Micro Edition profile for the purposes of game development targeting high-end consumer game devices and desktops

JSR-134 Experts Group

Experts group includes

Sony Online

Math Engine Plc.

Plazmic Inc.

GameSpy Inc.

Individuals



JSR-134 Goals

Support high-end game content

Provide complete environment

Allow for extensibility

Go for the 85% level, enable developers to build the rest


Target *game console* class devices and larger

32–64 Mb RAM

Fast 3D graphics hardware

Relatively large fixed storage device for game content





JSR-134 Scope and Technical Aspects

JSR-134 Scope

3D Modeling and Rendering

Physics Modeling

Character Animation

2D Rendering and Buffer Management

Game marshalling and networking

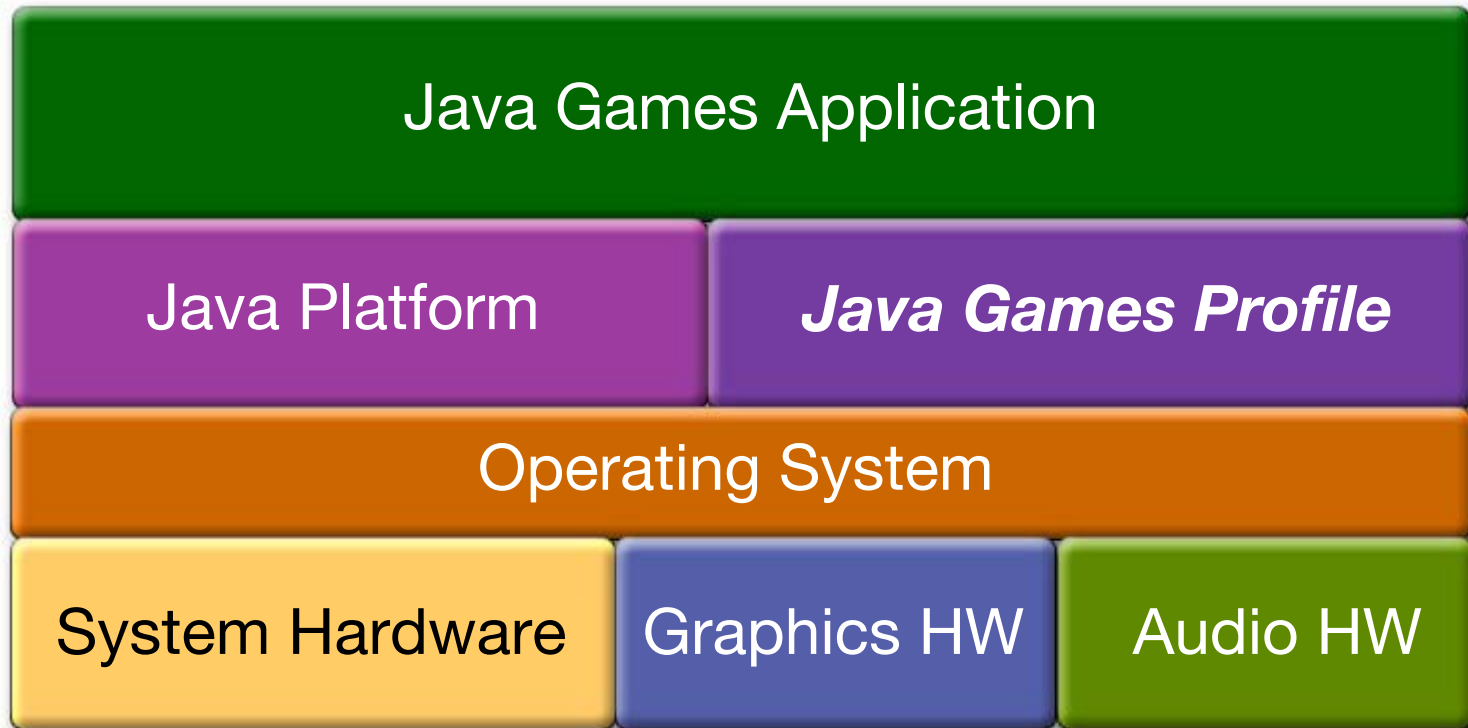
Streaming Media and Sound

Game Controllers

Hardware Access



Java™ Games Profile Platform



JSR-134 Approach

Invent as little as possible!

Reference existing Java technology APIs

Build what doesn't yet exist

Java Platform Requirements

Basic system and utility functions

`java.lang, java.util`

Basic I/O functions

`java.io`

Basic Networking functions

`java.net`

Basic toolkit functions

`java.awt`



Graphics Requirements

Java 3D™ API

Provides 3D rendering support

Java 2D™ API

Provides 2D rendering support

Buffer management



Hardware Access

Features found in the JDK™ 1.4 release

Screen management

Timer API

Native memory access



Existing Technology

Personal Basis Profile (JSR-129)

Mobile Media API a.k.a MMAPI for J2ME
(JSR-135)

Java 3D API

Java 2D API

JDK 1.4 release, Features



What We Need to Build

Physics Modeling

Character Animation

Game Marshalling and Networking

Game Controllers

Physics Modeling

Often game specific behaviour

Physics model often **value add**
for a game title

Provide simple behaviour model

Enable extensibility



Character Animation

Animation of organic characters

Skinning

Animation techniques often key aspect of a game

Provide hooks to implement custom animation package



Game Marshalling and Networking

Provides a mechanism allowing players to find networked games (Marshalling)

Provides a mechanism to pass data amongst game applications (Networking)

Abstracts game networking from underlying connection protocol

Built on java.net APIs



Game Controllers

Wide variety of controllers available

Joysticks

Steering wheels

Light guns

Dance Pad

Game/Controller interaction

Generally a **polling** model

Java platform generally event driven



Demo

Status and Direction

Status and Direction

Schedule

Community Review Q3 2002

Public Review Q4 2002

Summary

The market for games software is **LARGE**

Java™ technology **is** appropriate for game development

JSR-134 will provide a Java platform for the development of 1st class games

The platform will use existing Java technology and invent some new ones



One Last Thing!

JCP members please watch for and participate in the JSR-134 Community Review!

Others please participate in the JSR-134 Public Review!

And, remember the Java platform is **great** game development!





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