

JAVA PLATFORM, MICRO EDITION SOFTWARE DEVELOPMENT KIT 3.0

DEVELOPMENT TOOLS FOR CDC, CLDC, AND BLU-RAY DISC JAVA

KEY FEATURES

- A single SDK for all Java ME platforms, including new support for Blu-ray Disc Java (BD-J)
- Prototype applications using built-in Emulators or on Windows Mobile
- On-device tooling enabling hot deployment, debugging and more
- Application profiling, network monitoring, and memory monitoring
- Support for creating attractive application user interfaces with LWUIT

Oracle's Java Platform, Micro Edition (Java ME) Software Development Kit (SDK) integrates the Connected Limited Device Configuration (CLDC), the Connected Device Configuration (CDC), and Blu-ray Disc Java (BD-J) technology into one simple development environment. The Java ME SDK is the successor to the Sun Java Wireless Toolkit and the Java Toolkit for CDC and offers improved device emulation, a standalone lightweight development environment, and powerful tools to speed application development.

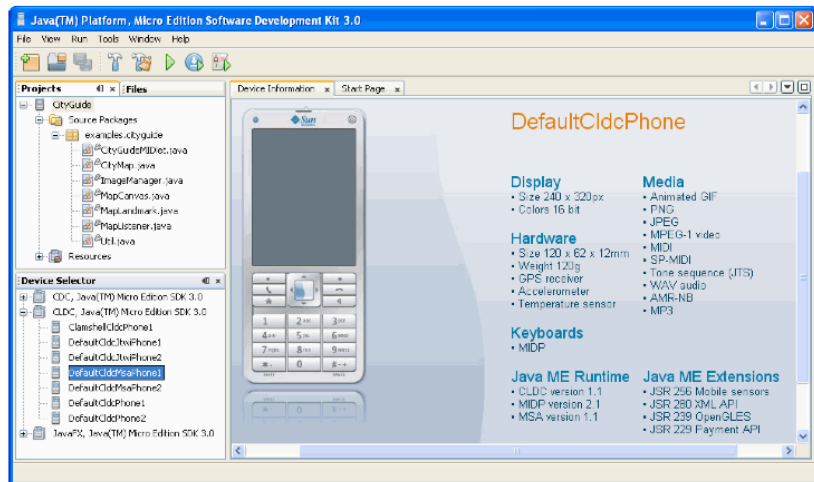


Figure 1. Java ME SDK 3.0 delivers high fidelity emulation.

Facilitating Application Development

Java ME SDK 3.0 is the most comprehensive tool-chain for Java ME development. With one tool developers can write, edit, compile, package, sign, and obfuscate an application. On-device tooling is available for CLDC applications, so they can be tested on an emulator, then deployed and debugged on Windows Mobile devices.

New Architecture

The SDK's new modular architecture is shown in Figure 2. At the heart of the system is the device manager. It registers emulators and devices, and retains knowledge of their properties. The device manager stores adapters, abstract layers that map SDK commands to specific devices, for every device or emulator.

The Java ME SDK also includes a number of options for running application projects, including several emulators (see the device selector in Figure 1) as well as an Oracle Java Wireless Client (OJWC) runtime that can easily be installed onto Windows Mobile devices for development purposes. The emulators included in the Java ME SDK are built using the same OJWC source-code that Oracle licenses to device manufacturers for use on real devices, so the

fidelity is very high and developers will benefit from improved portability when deploying content into the market.

The Java ME SDK also includes a universal emulator interface (UEI) proxy to ensure that integrated development environments (IDEs) recognize the SDK as an emulation platform. The UEI proxy provides more choice to delivers by enabling them to use the Java ME SDK with third-party IDEs.

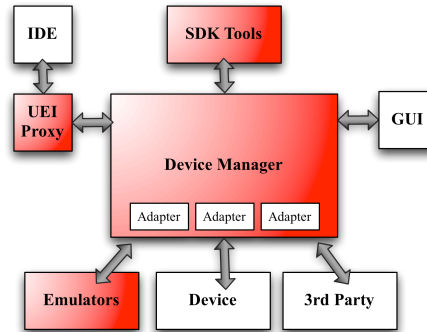


Figure 2. Java ME SDK has a modular, pluggable architecture.

New Virtual Machine

The legacy kernel-based virtual machine (KVM) has been replaced with a highly optimized version of OJWC based on the open source phoneME feature code (visit <https://phoneme.dev.java.net>) to improve compatibility with today's mobile devices and to provide a more efficient development experience. . SDK includes the latest version of OJWC currently shipping on the devices in the market. As an example SDK 3.0 includes the last released version of OJWC that conforms to JSR 248:Mobile Service Architecture (MSA) version 1.1

ODT and Device Communication

On-device tooling (ODT) enables live testing on the device. The VM contains an ODT agent, which receives requests from adapters and responds accordingly. The SDK uses a lightweight version of remote method invocation (RMI) to pass requests.

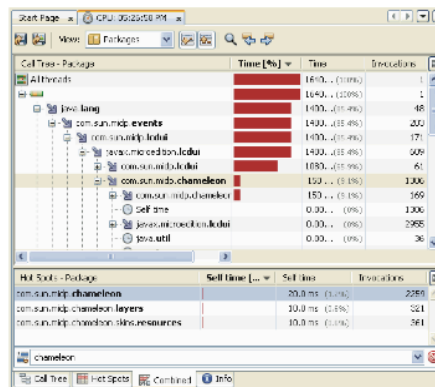


Figure 3. The Java ME SDK includes a built-in profiler.

Profiling Support

A built-in profiler makes it easy to profile CLDC and Mobile Information Device Profile (MIDP) application runtime performance.

Monitoring Network and Memory Usage

The Java ME SDK monitors emulators using hypertext transfer protocol and hypertext transfer protocol secure (HTTP/HTTPS), socket or datagram protocols. A single network monitor handles all emulator instances. Searching and filtering is allowed, and developers can save a snapshot for later.

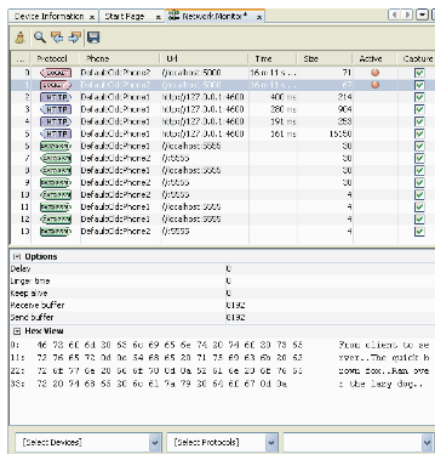


Figure 4. A network monitor allows for searching and filtering.

Stay Current

The new architecture includes an easy-to-use tool that provides notifications to the developer when there are updates to core SDK components, tools, or the runtime. This ensures that developers are working with the latest and greatest versions of the SDK.

Blu-ray Support

With the Java ME SDK, developers can build and deploy Blu-ray Disc Java (BD-J) applications to Blu-ray players. Java ME applications are typically deployed with Java Application Descriptor (JAD) and Java Archive (JAR) files. For BD-J, the application needs to be deployed as a structured directory of files. The Java ME SDK is one of the few developer tools to include BD-J stubs and it uses the stubs to organize application files according to Blu-ray Disc Association standards.

Once an application has been built using the Java ME SDK it can then be burned to a Blu-ray disc and run on a Blu-ray player, or, it can be run directly on a desktop computer using commercial player software, such as ArcSoft Total Media Theatre or WinDVD.

User Interface

The Java ME SDK leverages the NetBeans platform to provide a reliable and flexible windowing system, a logging facility and a modularized environment with the ability to update on the fly. A shared project system allows easy transition of projects to the NetBeans Mobility Packs for CLDC or CDC.

Lightweight UI Toolkit (LWUIT) Integration

The Java ME SDK is the first developer's kit that comes with the LWUIT library, resource manager and demo applications fully integrated. LWUIT is a versatile and compact set of APIs for creating attractive application user interfaces for mobile devices. Designed from the ground up as an efficient mobile user interface toolkit, LWUIT provides many useful Swing-like features. LWUIT offers a basic set of components, flexible layouts, style and theming, animated screen transitions, bi-directional text support, and a simple and useful event-

handling mechanism. Amongst other differentiating features, LWUIT includes XHTML component which is used both- to render offline web content within the Java ME application, and also to access external web flows (Facebook, Google forms, etc.). The toolkit is compatible with a vast set of mobile devices (CLDC as well as CDC) - which includes any MIDP 2.0/CLDC 1.1 device.

The Java ME SDK is the most feature-rich set of developer tools available for Java ME application development.

Download the Java ME SDK from:

<http://www.oracle.com/technetwork/java/javame/downloads/index.html>

Supported Application Programming Interfaces (APIs)	
CDC	CLDC
<ul style="list-style-type: none"> • JSR 218, CDC • SR 217, PBP 1.1 • JSR 209, AGUI 1.0 	<ul style="list-style-type: none"> • JSR 118, MIDP 2.0 • JSR 139, CLDC 1.1 • JSR 75, PIM and File • JSR 82, Bluetooth and OBEX • JSR 135, MMAPI 1.1 • JSR 172, Web Services • JSR 177, SATSA • JSR 179, Location • JSR 180, SIP • JSR 184, 3D Graphics • JSR 185, JTWI 1.0 • JSR 205, WMA 2.0 • JSR 211, CHAPI • JSR 226, SVG • JSR 229, Payment • JSR 234, AMMS • JSR 238, MIA • JSR 239, Java Binding for Open GL ES • JSR 248, MSA 1.1 • JSR 256, Mobile Sensors • JSR 280, XML API

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