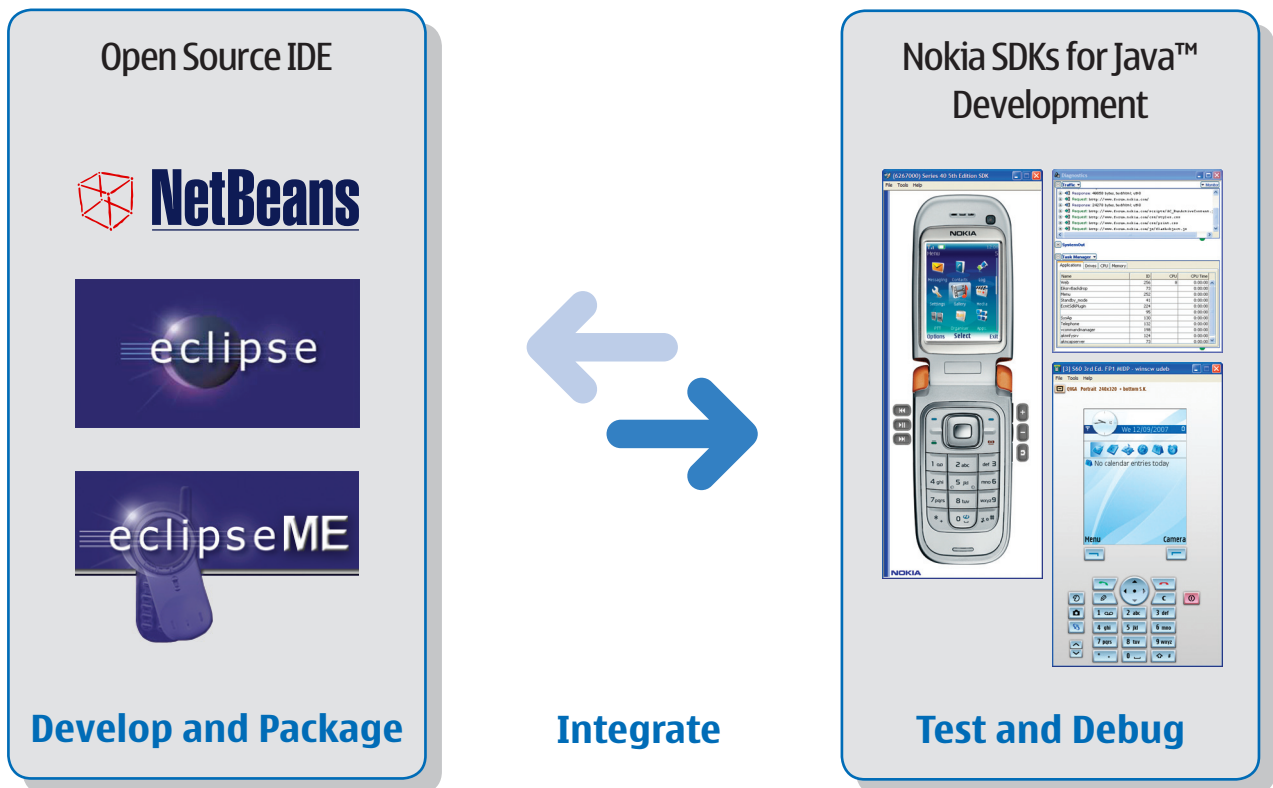


# Tools for Mobile Java™ Developers



Java™ applications for feature phones and smartphones offer developers significant opportunities. Hundreds of millions of phone owners are looking to add functionality to their devices. The first step toward exploiting this opportunity is a set of robust integrated tools that minimize the effort of application development. Nokia has a range of tools designed for Java developers. These tools work in combination with industry-leading open-source Java integrated development environments (IDEs), making it easy to create high-quality Java applications efficiently.

Nokia's tools for Java development support the NetBeans and Eclipse IDEs. Developers who choose NetBeans should add the NetBeans Mobility Pack, and those who choose Eclipse should add EclipseME.<sup>1</sup> NetBeans Mobility Pack and EclipseME provide tools for creating and packaging mobile information device profile (MIDP) applications, and they also provide a convenient interface for accessing Nokia's device and platform emulators. The emulators are delivered in Nokia's SDKs for Java development. These SDKs facilitate application testing on a PC — without the need for a device — using emulators for the Series 40 platform and the S60 platform. The SDKs also provide APIs, documentation, and example applications that make it as straightforward as possible to use Java technology to develop applications for Nokia devices.

<sup>1</sup> EclipseME must be installed in conjunction with Eclipse to enable integration with Nokia's SDKs for the development of Java applications.

## Key benefits

- Support for NetBeans with NetBeans Mobility Pack and Eclipse with EclipseME.
- Full integration of Nokia SDKs with the Java IDEs.
- Development of MIDP applications.
- Additional MIDP development tools.
- Comprehensive support for PC-based testing of connected applications.
- Support for application debugging in the emulators.

## The toolbox

- NetBeans with NetBeans Mobility Pack or Eclipse with EclipseME.
- Series 40 platform SDKs.
- The Nokia 6131 NFC SDK.
- S60 platform SDKs for Symbian OS, for Java.

# Tools for Mobile Java Developers — Description of toolbox features

## Comprehensive IDE support

Nokia's SDKs for the development of Java applications support the following industry-standard open-source IDEs:

- NetBeans IDE 5.x with NetBeans Mobility Pack.
- Eclipse 3.x with EclipseME.

## SDKs

To help developers work efficiently with the supported IDEs, Nokia provides Series 40 platform, S60 platform, and device SDKs. Each SDK delivers the core MIDP APIs, additional Java™ Specification Request (JSR) APIs, documentation, example applications, and emulators.

For developers working with connected applications, each emulator offers the possibility of interacting with other emulators running on the PC or with server applications running over the Internet.

Debugging support is also provided, allowing developers to run applications in the emulator using line-by-line execution, breakpoints, and other debugging tools to resolve testing issues.

All the SDKs provide support for a wide range of languages — including simplified and traditional Chinese, Japanese, and many European languages — making it easier for developers to build and test applications for the international market.

In addition, the emulators provide a number of tools that assist with the development of Java applications, in ways that include the following:

- Generation of events, such as incoming calls and loss of signal.
- A diagnostics window that provides information about Internet traffic and memory usage.
- Control of MIDP security domains.
- Control of various device features, such as memory card size.

## Series 40 SDKs

The Series 40 platform SDKs provide full emulation of the MIDP implementation delivered on Series 40 devices. The emulators also provide features such as KVM speed emulation, a comprehensive diagnostics window, simulation of key phone events (such as an incoming call), and the ability to override a device's default behavior.

With the latest Series 40 SDK, developers have access to the following:

- FileConnection and Personal Information Management (PIM) APIs in PDA Optional Packages for the J2ME™ Platform (JSR-75).
- Java™ APIs for Bluetooth (JSR-82).
- Wireless Messaging API (JSR-120).
- An updated Mobile Media API (JSR-135).
- J2ME™ Web Services Specification (JSR-172).
- Security and Trust Services API for J2ME™ (JSR-177), including the Application Protocol Data Unit (SATSA-APDU) and SATSA-CRYPTO optional packages.

- Mobile 3D Graphics API for J2ME™ (JSR-184).
- Java™ Technology for the Wireless Industry (JSR-185).
- Wireless Messaging API (JSR-205).
- Scalable 2D Vector Graphics API for J2ME™ (JSR-226).
- Advanced Multimedia Supplements (JSR-234), providing 3D audio and music support.

## Nokia 6131 NFC SDK

Based on Series 40 3rd Edition, Feature Pack 1, the Nokia 6131 NFC phone can act as a virtual smart card. The Nokia 6131 NFC SDK provides an implementation of the Contactless Communication API (JSR-257), which allows Java developers to create applications using the phone's Near Field Communication (NFC) features.

## S60 SDKs

The S60 Platform SDKs for Symbian OS, for Java™ MIDP provide full emulation of the MIDP implementation delivered on S60 devices. In addition to having access to tools for tasks such as diagnostics and event generation, developers of location-based applications have access to a tool that simulates location events in the emulator.

With the latest S60 SDK, developers have access to the following:

- FileConnection and Personal Information Management (PIM) APIs in PDA Optional Packages for the J2ME™ Platform (JSR-75).
- Java™ APIs for Bluetooth (JSR-82).
- Wireless Messaging API (JSR-120).
- Mobile Media API (JSR-135).
- J2ME™ Web Services Specification (JSR-172).
- Security and Trust Services API for J2ME™ (JSR-177), including the Public Key Infrastructure (PKI) (SATSA-PKI) and SATSA-CRYPTO optional packages.
- Location API for J2ME™ (JSR-179).
- SIP API for J2ME™ (JSR-180).
- Mobile 3D Graphics API for J2ME™ (JSR-184).
- Wireless Messaging API 2.0 (JSR-205).
- Scalable 2D Vector Graphics API for J2ME™ (JSR-226).
- Advanced Multimedia Supplements (JSR-234).

## Documentation

All of Nokia's tools for Java development are delivered with comprehensive documentation, including online help and various developer guides.

## Availability

All of Nokia's tools for the development of Java applications can be downloaded free of charge, from the Tools and SDKs section of the Forum Nokia Web site ([www.forum.nokia.com/tools](http://www.forum.nokia.com/tools)).

[www.forum.nokia.com/java](http://www.forum.nokia.com/java)

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