

Develop Nokia phones software by Eclipse step-by-step

Skill Level: Introductory

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This tutorial shows how to develop J2ME applications for Nokia handsets using the Eclipse IDE and the Nokia Developer's Suite for J2ME.

The Nokia developer platforms

The Series 40 Developer Platform - 7210 and 6230.

The Series 60 Developer Platform - Symbian-OS-based smart phone, 3650 and 6600.

The Series 80 Developer Platform - Symbian-OS-based high-end phone, 9500 and 9300

The Series 90 Developer Platform - Symbian-OS-based touch-screen multimedia devices, 7700.

The Nokia device SDKs

各シリーズのSDKに特定のJava API libraries + PC emulatorを含む。

The Nokia Developer's Suite for J2ME

Management interface for all the SDKs installed on the development PC.

Step 1. Installation and configuration

1. Downloading the Nokia Developer's Suite 2.2 for J2ME (serial numberが必要)
2. Installing the Nokia Developer's Suite 2.2 for J2ME (Eclipseのルートディレクトリが必要)
3. Starting Eclipse
 - Tools > Nokia Developer's Suite for J2ME** menu item and other new icons.
4. Downloading and Installing device SDKs (40, 60, 80, 90 Series)
 - serial numberが必要
 - 通常はC:\Nokia\Devicesのdirectoryにインストール
5. Adding SDKs to the Nokia Developer's Suite
 - **Tools > Nokia Developer's Suite for J2ME > Configure Emulators.**
 - **Add** to add new SDKs to the drop-down list.
 - Select the installation directory of the SDK to add it.

6. Configuring emulators
 - **Tools > Nokia Developer's Suite for J2ME > Configure Emulators.**
 - Choose the emulator SDK from the drop-down list.
 - Click Preference. You are able to set general properties of the emulator.

Step 2. Starting a new project

1. **New > Project.**
2. **Java > MIDP Project** (Nokia SDK Plug-in)
3. Specify a **name** and a **root directory** for the project.
4. Choose **one of SDKs** to develop.
5. Configuring the project paths
6. Viewing it in the Package Explorer

Step 3. Editing source code

1. **Tools > Nokia Developer's Suite for J2ME > New Class,**
2. Eclipse's new class wizard

The skeleton Java source code file generated from the wizard is as follows.

Hello class is the MIDlet class - the entry of execution for the application.

The JRE first instantiates this class and then calls its **startApp()** method to start the MIDlet. The **destroyApp()** method is called when the user terminates the MIDlet.

3. Real-time checking for errors
4. Automatic build errors

Step 4. Running the MIDlet on the emulator

1. Copying the resource files
2. Running the MIDlet

Select the target MIDlet class in the Package Explorer and then select Run > Run As > Nokia SDK.

Step 5. Debugging the MIDlet

1. Setting up the debugger
2. Setting break points
3. Running the debugger

Step 6. Packaging for Over-The-Air

1. Generating JAR and JAD files

Tools > Nokia Developer's Suite for J2ME > New Application Package wizard to generate the JAR and JAD files.

2. Customizing the attributes
MIDlet name, description, version, and many other attributes.
3. Previewing the JAR/JAD files
Click on **Preview** to preview the JAD and JAR manifest files.
4. Generating the files
Click on **Generate** to actually generate the JAD and JAR files.
5. Signing the package
Tools > Nokia Developer's Suite for J2ME > Sign Application Package wizard, digitally sign a MIDlet for distribution.
6. Testing the package in the emulator
Tools > Nokia Developer's Suite for J2ME > Start Emulators wizard, test run the JAD file in a device emulator.
7. Testing OTA in the emulator
Tools > Nokia Developer's Suite for J2ME > Start Emulators wizard, test OTA provisioning of the JAD and JAR files in a device emulator. Instead of running the JAD file directly, the emulator tries to install it from a URL and go through the security and permission checks as if it is an OTA midlet.

Step 7. Deploying the MIDlet

1. Deploying over a local connection
With the JAR and JAD files in hand, you can push them to the phone over a serial connection or a bluetooth connection using the **Tools > Nokia Developer's Suite for J2ME > Deployment** wizard.
2. Deploying to an OTA server
Through assigning FTP server information, user ID, password and destination directory, the wizard supports copying the files to the host OTA server via FTP. It also automatically generates a WML file that contains a link to the JAD file.