

Nokia N97 SDK Installation Guide

Version 1.0
April 27th, 2009

S60 platform

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1 Introduction

1.1 About this Installation Guide

This document describes what you need to know and do to install the Nokia N97 SDK. This document also includes instructions on how to verify that your environment is properly configured.

The Nokia N97 SDK enables application development for Nokia N97 devices. The SDK is based on Nokia N97 and Symbian OS 9.4 and includes all key functionality needed for application development (documentation, API reference, add-on tools, emulator, target compiler), excluding the Integrated Development Environment (IDE).

1.2 Who Should Read this Guide?

You should read this guide if you plan to install Nokia N97 SDK.

1.3 Typographical Conventions

Table 1.1: Typographical conventions

Notation	Explanation
<code>Courier</code>	<ul style="list-style-type: none">• Text that you enter (as opposed to system prompts and responses)• File paths• Commands• Program code
<i>Italic</i>	<ul style="list-style-type: none">• Names of books and documents• New terminology
Bold	Names of Microsoft Windows menus, commands, buttons, and icons.
URL link	Active link to an external URL.

2 System Requirements

Before installing the SDK, check that you have the minimum hardware and software requirements listed in this section. With these minimum requirements, you can run the SDK as a standalone application. If you plan to use the SDK with an integrated development environment (IDE), please make sure you have the requirements mandated by the IDE in question.

2.1 Hardware Requirements

The minimum hardware configuration for installing and running the SDK is:

- 1 GHz processor (minimum IDE and OS requirement of processor is 500 MHz)
- 1024 MB RAM
- 16-bit color
- 1024x768 resolution
- 2 GB free hard disk space
- A Microsoft Windows compatible sound card (required for audio support)
- Keyboard and mouse

2.2 Software Requirements

The minimum software requirements for installing and running the SDK are listed below.

- Active Perl version 5.6.1 (see Section [3.1.1 "ActivePerl installation"](#) for details); - 'perl -v' command can be used to find existing perl versions
- Java Runtime version 1.5.0 (see Section [3.1.2 "Java Run-Time installation"](#) for details); - 'java -version' command can be used to find existing java versions
- ARM RVCT compiler 2.2 build 593 or newer is supported for ARMV5 compilation.

The following operating systems are supported:

- Microsoft Windows XP Professional SP2
- Microsoft Windows Vista Business (For limitations refer to release notes)

2.3 Additional Installation Requirements

- All installations must be performed using an administrator account. Otherwise, some environment variables may not be set correctly.
- The SDK must be installed in a path that does not contain any whitespace characters.
- The SDK, IDE and your project files must be located on the same logical drive as build tools to work correctly in all situations.

3 Installing the SDK

3.1 Prerequisites

Before installing the SDK you should have installed and configured:

- Perl (see Section [3.1.1 "ActivePerl installation"](#) for details)
- Java (see Section [3.1.2 "Java Run-Time installation"](#) for details)
- All peripherals you are going to use (see [Appendix B: Supported Accessories](#) on page 22)

All installations should be performed with an account that belongs to local administrators group. You should close all other applications before starting the installer.

3.1.1 ActivePerl installation

ActivePerl 5.6.1 is required and must be installed before installing this SDK. You can download ActivePerl from the [ActivePerl pages](#). See ActivePerl documentation for installation instructions.

ActivePerl must be installed on your computer with administrator rights. Otherwise the PATH environment variable is not set correctly.

3.1.2 Java Run-Time installation

Java Run-Time (JRE) 1.5.0 is required to use emulator Preferences and other Java components.

Java Run-time can be downloaded from [Sun Developer Network Downloads](#). (JRE is included in J2SE.)

JRE must be installed on your computer with administrator rights. Otherwise the PATH environment variable is not set correctly.

3.2 Running the SDK Installer

This section provides the basic steps for installing the SDK. By following the steps below you will install the SDK to your PC and be able to start application development.

Once you have downloaded the installation package (.zip file) on your PC, installing the S60 SDK takes place through the SDK Installer, that is, the **InstallShield Wizard**. The following will take you through the steps needed to install the SDK.

- 1 Start the SDK installation by running the installation executable **setup.exe** located in the SDK delivery ZIP file. the Installshield wizard panel appears:

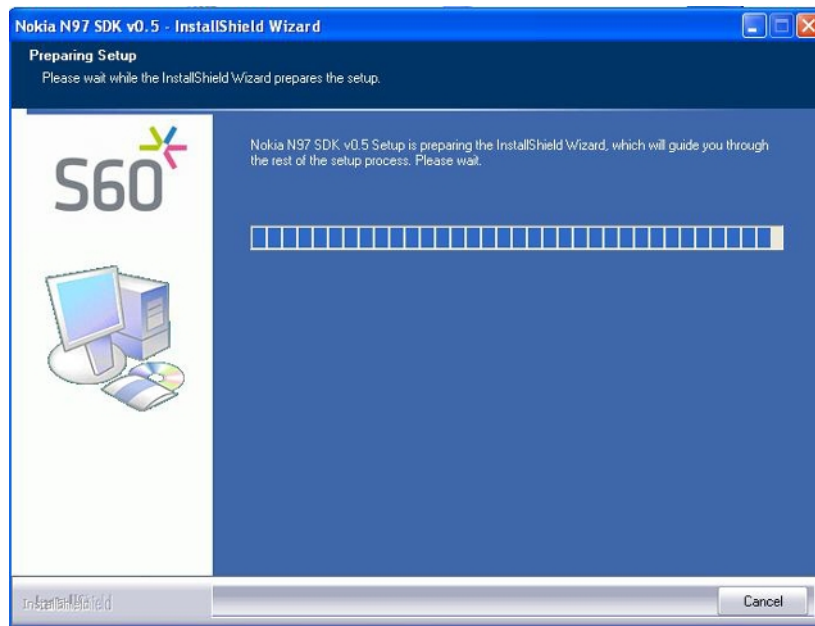


Figure 1: InstallShield Wizard

- 2 Click the **Next** button to continue.

The **License Agreement** dialog is displayed:

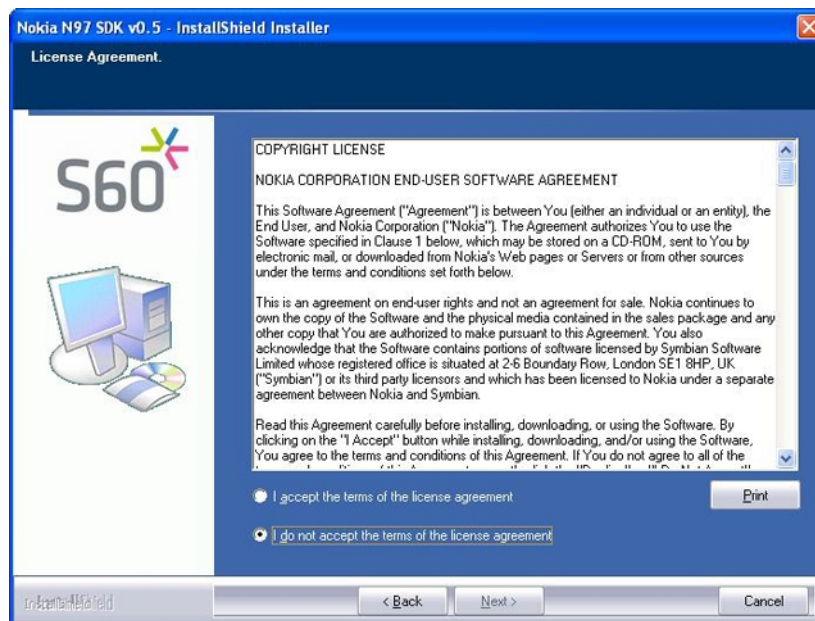


Figure 2: License Agreement

Read the license agreement carefully.

- 3 After reading (and accepting) the license agreement, click the **I accept the terms of the licensee agreement** radio button and click **Next**



Note: If you do not accept the license agreement, installation of the SDK is aborted.

The **Setup type and destination folder** dialog is displayed:

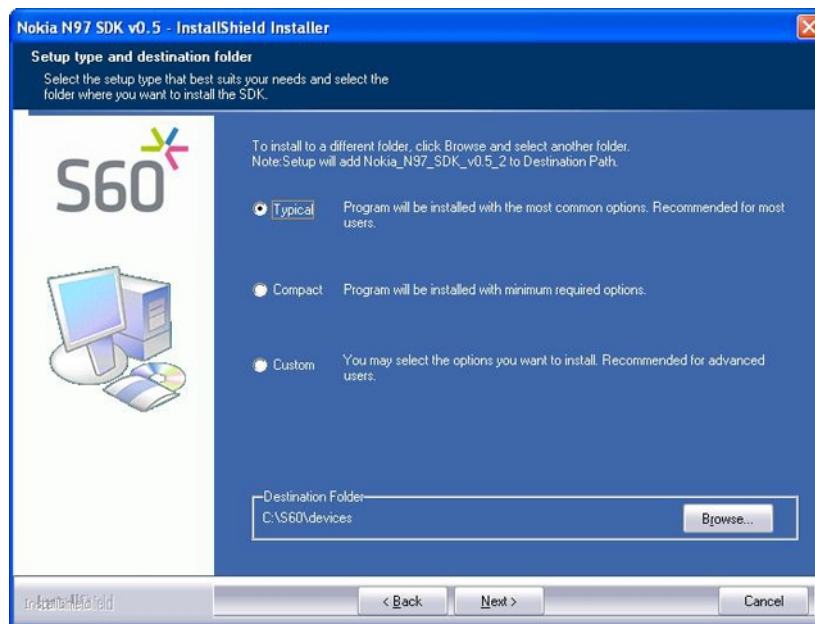


Figure 3: Setup type and destination folder dialog

The SDK installer provides the following installation options:

- **Typical:** Installs the most common, default elements with the SDK. These include documentation (C++ and MIDP), example applications, development tools and IDE integration elements (documentation plug-ins). This is the recommended installation option.
- **Compact:** Installs a restricted set of features. These include emulator and development tools.
- **Custom:** Allows you to select which features to include in the SDK (see step 4 below for a list of installation options).

Select the type of installation that you want by clicking the appropriate radio button.

If you do not want to install the SDK to the proposed default directory (C:\S60\devices) you can browse the installation directory by clicking the **Browse** button.

	Note: The installation directory should not contain whitespaces.
--	---

	Note: As the installation directory must be same as the name of the device, the installer always creates an S60\devices\Nokia_N97_SDK_v0.5 directory under the selected directory.
--	---

Once you have selected the installation type and (possibly) defined the installation directory, click **Next**.

- If you selected the **Typical** installation option, proceed to step 5.
 - If you selected the **Compact** installation option, proceed to step 6.
 - If you selected the **Custom** installation option, proceed to step 4.
- 4 If you selected the **Custom** installation option, the **Select Features** dialog is displayed:

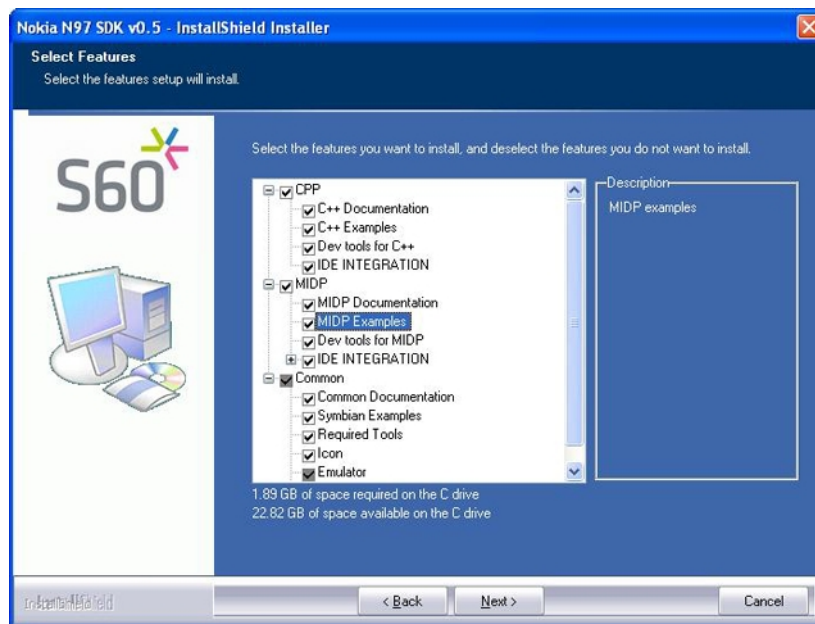


Figure 4: Select Features dialog

The options are:

- **CPP--CPP Features**

- C++ Documentation -C++ specific documentation
- C++ Examples -C++ examples
- Dev tools for C++--This contains all the CPP API headers and compiler toolchains for WINSCW and ARM build
- IDE Integration -Integrate SDK documentation into Carbide.C++

- **MIDP--MIDP Features**

- MIDP Documentation -MIDP specific documentation
- MIDP Examples -MIDP examples
- Dev tools for MIDP -It contains binaries and Java APIs for MIDP development
- IDE Integration -Integrate SDK documentation into Eclipse and Netbeans

- **COMMON--**This contains all the common components required for both CPP and MIDP application development

- Common Documentation -Common documentation.
- Symbian Examples -It contains Symbian C++ examples
- Common Tools -This contains S60 tools such as MBM viewer,S60 BT driver,ECMT etc..
- Icon -Common icon
- Emulator -Emulator
- OpenC plugins -This contains the headers,libraries,Glib sources etc for OpenC and OpenC++ application development

Click the features that you want to include in the SDK installation and click **Next**.

- 5 The **Choose Destination Location** dialog is displayed:

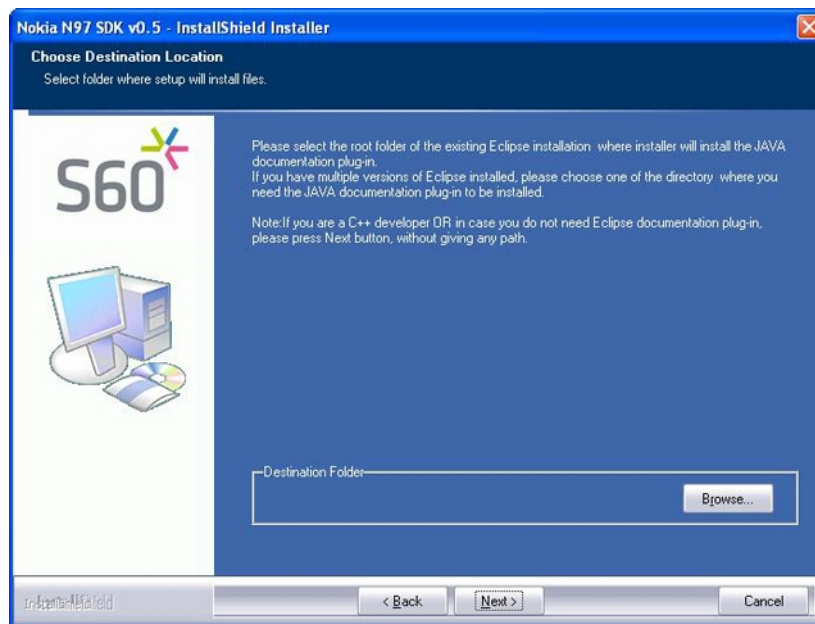


Figure 5: Choose Destination Location dialog

Define your Eclipse installation directory by clicking **Browse** and then **Next**

C++ users may skip this stage by clicking **NEXT** button, as JAVA documentation is not relevant for C++ developers



Note: This dialog is only displayed if you selected the **Typical** installation option or selected IDE integration in the **Custom** installation.

- 6 The **Ready to Copy Files** dialog is displayed. Click **Next** to start the SDK installation. (If you want to modify the installation settings, click **Back** and modify them as needed.)

The SDK installation status is displayed in the **Setup Status** dialog:

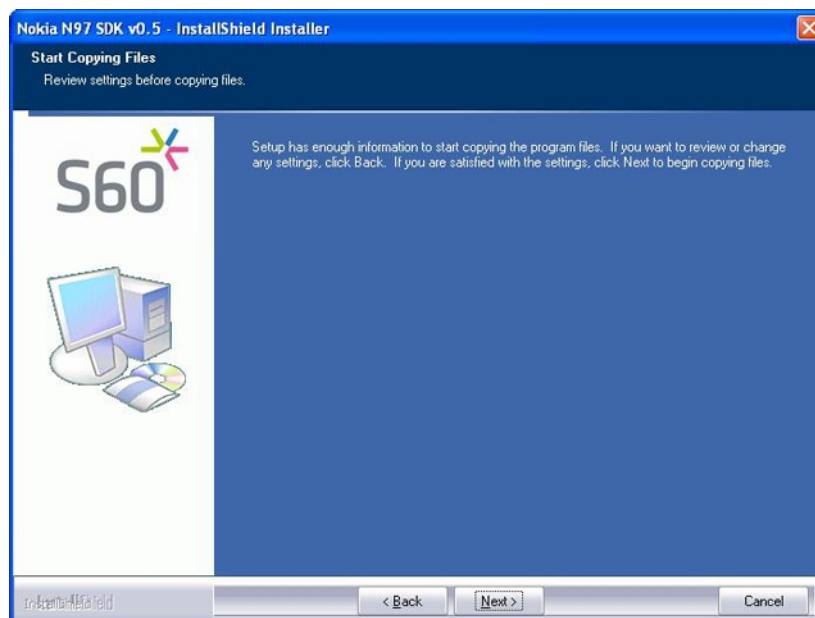


Figure 6: Ready to Copy Files

- 7 The **Start Copying Files** dialog is displayed. Click **Next** to start the SDK installation.

The SDK installation status is displayed in the **Setup Status** dialog:

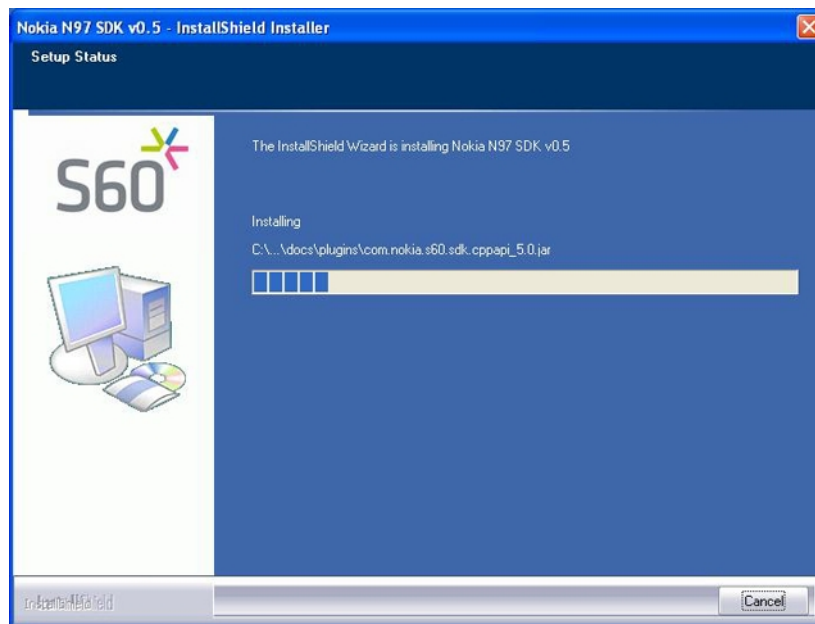


Figure 7: Setup Status dialog

- 8 If you already have other SDKs installed on your PC, the InstallShield Wizard will prompt you to select one of them as the default SDK. Select the appropriate SDK in the following dialog and click **Next**.

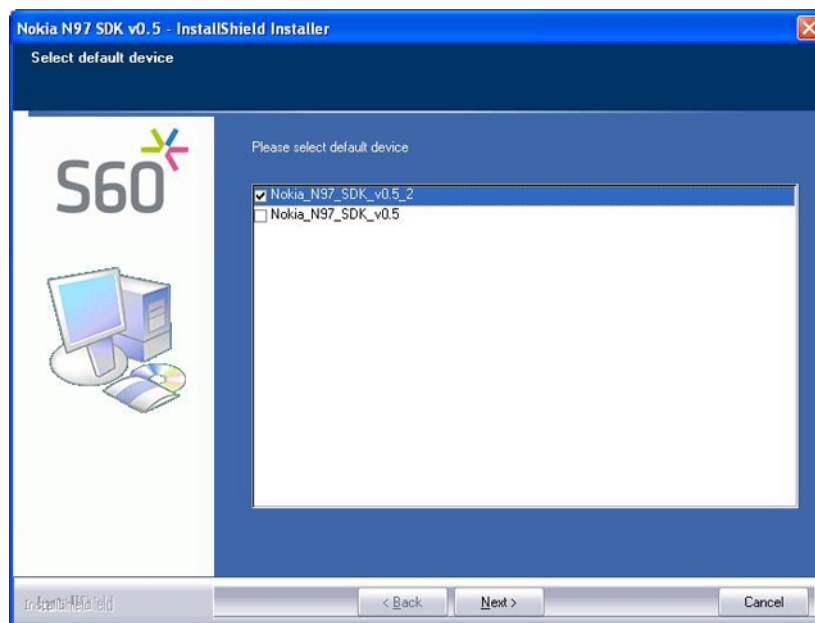


Figure 8: Select default device dialog

- 9 If you do not have the CSL ARM Toolchain installed on your PC, the following dialog will appear, prompting you to install it:

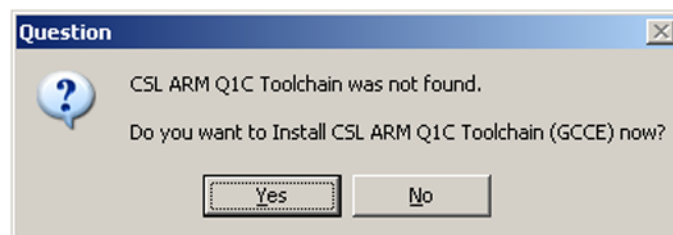


Figure 9: CSL ARM Toolchain installation prompt

As the CSL ARM Toolchain contains for example the GCCE compiler needed to build S60 applications for real devices, click **Yes** to the question and follow the instructions of the CSL ARM Toolchain installation wizard.

Once the CSL ARM Toolchain has been installed, proceed to step 10.

- 10 To complete the installation, click **Finish** in the Installation complete dialog.

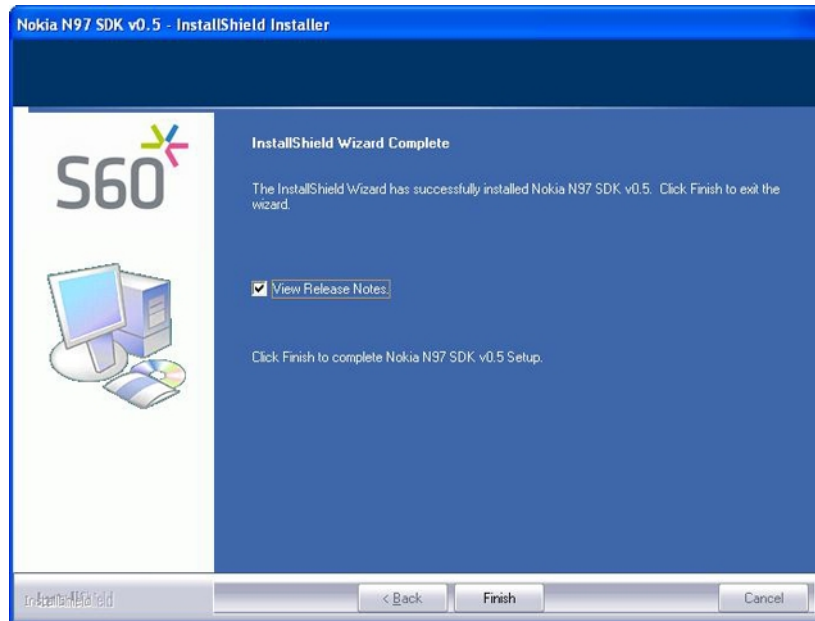


Figure 10: Installation complete

The SDK is now fully installed on your PC. You can verify this through the Windows Start menu by, for example, opening the SDK Help by selecting **Start > All Programs > Nokia Developer Tools > Nokia_N97 SDK > v0.5 > SDK Documentation**.

More detailed instructions on how to verify the SDK installation that you have just performed are provided in Chapter [4 "Verifying SDK Installation"](#).

4 Verifying SDK Installation

Once you have installed the SDK and example applications, you can verify that your environment is properly configured.



Note: To be able to verify the installation according to the instructions provided here, you will need to have access to the Hello World Basic example application. Example application are delivered with the SDK and installed by default to `<Nokia_N97_SDK_installation_directory>\S60CPPEexamples\`. Example applications are installed only in two modes 1. Typical installation and 2. If you select examples in custom installation.

4.1 Verifying command line tools

To check that SDK command line tools function correctly, you can go through the following sequence:

- 1 Open the Command Prompt.
- 2 Set the Nokia N97 SDK as the default device with the `devices` command:

```
devices -setdefault @Nokia_N97_SDK_v0.5:com.nokia.s60
```
- 3 Go to the directory that contains the Hello World Basic example application. In a default installation it can be located with the `cd` command:

```
<Nokia_N97_SDK_installation_directory>\S60CPPEexamples  
\helloworldbasic
```
- 4 Use the `cd` command to go to the group directory:

```
cd group
```

The group directory contains the `bld.inf` and `helloworldbasic.mmp` files.
- 5 Enter the `bldmake bldfiles` command. This generates the necessary build directories.
- 6 Enter the `abld build` command.

The build script starts the `make` command that will both compile and link the application for the emulator.
- 7 If your environment has been set up correctly, the build goes through without errors and you can run the Hello World Basic application in the emulator by issuing the `epoc` command. (Notice that it may take a while for the emulator to open.)

The emulator starts and displays the application grid. To verify that the Hello World Basic application has been properly compiled and can be run on the emulator, do the following:

- Use the five-way navigation key of the emulator to navigate to the **Installed** folder in the emulator's application grid.
- Open the Installed folder by clicking the center of the five-way navigation key.
- Once the **Installed** folder has been opened, use the five-way navigation key to locate the **Hello World Basic** application icon.
- Open the Hello World Basic application by clicking the left soft key under **Options** and by selecting **Open** from the list of menu options that are displayed.

Locating and opening the Hello World Basic application in the emulator's application grid means that the application has been compiled and can be run on the emulator. In other words, the command line tools of your SDK installation are OK.

4.2 Verifying IDE configuration

To check that the SDK functions correctly with an IDE, you can go through the following sequence (the IDE used in this example is Carbide.c++).

- 1 Start the Carbide.c++ IDE.
- 2 Once the Carbide.c++ IDE is opened, it should display a message informing you that the Carbide.c++ documentation plug-in has been discovered. Click **Restart**.
- 3 Once the Carbide.c++ IDE is restarted, go to **Help > Help Contents** and verify that the SDK Help is included in the Carbide.c++ Help system.
- 4 In the Carbide.c++ IDE, go to **Window > Preferences... > Carbide.c++ > SDK Preferences** and verify that the SDK is listed in **Available Symbian OS SDKs**.

5 Configuring the Emulator

Once the SDK has been installed, you need to configure Bluetooth and Ethernet for the emulator. For detailed instructions on how to do this, please refer to the **Emulator guide** in the SDK Help. The SDK Help can be opened through the Windows **Start** menu by choosing **Start > All Programs > Nokia Developer Tools > N97 SDK > v0.5 > SDK Documentation**.

6 SDK Registration Wizard

Once you have installed the SDK, you will be given a trial run for 14 days. After 14 days of your trial you will be asked for registration automatically. You need to have a registration serial number for the SDK product, which you can get from Forum Nokia site.

You have the serial number:

If you are having the product serial number, please check the relevant check box in the SDK registration wizard and click the next button. In the next window you will be asked for the Forum Nokia user name and the serial number. Click finish once you are done. Else you can even import the registration file.

Registration file should be in the following format.

- Product-Key=XXXX (Found in the SDK registration wizard window).
- Username=YYYY (Forum Nokia UserID).
- Serial-Number=ZZZZ (Serial key from Forum Nokia).

Copy the above information in a text file and then import it.

You don't have the serial number:

If you don't have the serial number then please check the relevant check-box in the SDK registration wizard and click the next button. Here you will be asked whether you have internet connection or not.

- **I have internet connection(Online registration):**

The registration wizard will launch the default browser and will guide you through the registration process. Please note that you need to have Forum Nokia userID for this registration.

- **I don't have Internet connection:(Offline registration):**

If you don't have an internet connection, then you can use a computer that has internet connection to open the page <http://www.forum.nokia.com/GetSerialNumber> on page . You can enter the product key available from the registration window to get the serial key. Enter this key for the SDK registration.



Note: You can register to Forum Nokia yourself without waiting for the SDK to prompt for it. This can be done through the "Register Now" option provided in the "Help" menu of the menu bar. This will take you to the Forum Nokia site for registration. If you have already registered the SDK with the product key, "Register now" option from the menu bar will disappear.

7 Uninstalling the SDK

To uninstall the SDK, do the following:

- 1 In the Windows **Start** menu, go to **Start > Settings > Control Panel**.
- 2 In the **Control Panel** double click the **Add/Remove Programs** icon.
- 3 In the **Add/Remove Programs** window, select the S60 SDK from the list of currently installed programs.
- 4 With the S60 SDK selected, click **Remove**.
The **InstallShield** window opens.
- 5 When prompted to confirm that you really want to uninstall the SDK, click **Yes**.
- 6 Once the SDK has been removed from your PC, InstallShield informs you of this: Click **Finish** to exit the InstallShield application.



Note: Always uninstall the SDK through the **Add/Remove Programs** application, as described above. Do not attempt to remove the SDK contents manually. For example, in the Windows Explorer.

However, if you have used the emulator prior to uninstalling the SDK there may remain some SDK-related files and folders in the `C:\S60\devices\Nokia_N97_SDK_v0.5` directory even after removing the SDK through the **Add/Remove Programs** application. These files and folders need to be removed manually by, for example, deleting them in the Windows Explorer.

8 Multiple SDKs on the Same Computer

8.1 Multiple SDK instances on the same computer

Installing multiple instances of the SDK is supported in the Nokia N97 SDK.

To install additional instances of the SDK, follow normal installation steps, as described in [Installing the SDK](#). Once an additional SDK has been installed, it is displayed in the Windows **Start** menu by, for example, opening the SDK Help by selecting **Start > All Programs > Nokia Developer Tools > N97 SDK > v0.5 > SDK Documentation**.

Notice, that the new SDK instance is numbered in the **Start** menu as **v1.0_2**. The same consecutive numbering is also applied in the default SDK installation directory, followingly:

First installed SDK instance: C:\S60\devices\Nokia_N97_SDK_v0.5\

Second installed SDK instance: C:\S60\devices\Nokia_N97_SDK_v0.5_2\

Third installed SDK instance: C:\S60\devices\Nokia_N97_SDK_v0.5_3\

8.2 Devices basics

Since Symbian OS 7.0s all S60 SDKs have supported the devices mechanism to handle multiple SDK installations on same computer. The `devices` command replaced the `EPOCROOT` environment variable used by SDKs based on Symbian OS 6.0 and 6.1.

The `devices` command is used to change between different SDKs tool chains. All SDK commands, such as `bldmake` `bldfiles` use the devices mechanism to query location of include files, link libraries and required SDK tools. To get a list of installed SDKs, or "devices", enter the following command in the command prompt:

```
C:\>devices
```

A list of installed SDKs is displayed, for example:

```
Nokia_N97_SDK_v0.5:com.nokia.S60 - default
```

```
Nokia_N97_SDK_v0.5_2:com.nokia.S60
```

The default device is indicated with `- default`. In the above case the default device is `Nokia_N97_SDK_v0.5:com.nokia.S60`. This device is the one that is used when you call Symbian OS SDK commands such as `epoc`. To switch between devices, use the `- setdefault` option of the `devices` command:

```
C:\ devices -setdefault @Nokia_N97_SDK_v0.50_2:com.nokia.S60
```

Notice, that `@` is part of the command.

You can verify that the default device has been changed by listing all devices with the `devices` command:

```
C:\devices
```

The list of installed SDKs is displayed with the new default device:

```
Nokia_N97_SDK_v0.5_2:com.nokia.S60 - default
```

```
Nokia_N97_SDK_v0.5:com.nokia.S60
```

To view information about any of the installed SDK devices, the `devices -info` option can be used:

```
C:\>devices -info @Nokia_N97_SDK_v0.5_2:com.nokia.S60
```

```
Device: Nokia_N97_SDK_v0.5_2:com.nokia.S60
```

```
Root is C:\S60\devices\Nokia_N97_SDK_v0.5_2
```

```
Tools path is C:\S60\devices\Nokia_N97_SDK_v0.5_2\epoc32\tools
```

This information is utilized by Symbian commands. When, for example, the `epoc` command is executed, a stub command is launched at `C:\Program Files\Common Files\Symbian\tools`. The command uses the path information stored by the `devices` command to launch the actual emulator at `<Tools_path>\Epoc32\release\winscw\udeb\epoc.exe`.



Note: When building a software project with multiple SDKs, please note the following. After you have changed the device, remember to regenerate your IDE project and/or makefiles by using the `bldmake bldfiles` and `makmake project.mmp <type>` commands. See documentation for `makmake` and `abl` `makefile` in the **SDK Help > Symbian Developer Library** for more information

If you wish to use Symbian OS 6.1 based SDKs, you may manually add it to devices using the `-add` command line option. See `devices` command documentation for details. Note that SDKs based on Symbian OS 6.0 are not fully compatible with devices as both the GCC target compiler and resource compiler implementation have changed since Symbian OS version 6.0.

9 Further Information

Once you have installed the SDK, you can find information on how to use the SDK from the SDK Help. You can open the SDK Help from the Windows **Start** menu by selecting **Start > All Programs > Nokia Developer Tools > N97 SDK > v0.5 > SDK Documentation**.

For late-breaking information, please refer to the **Release Notes**, which you can open directly from the Installation Package (`ReleaseNotes.txt`).

Appendix A Supported IDEs

IDEs for C++ development

The following IDEs are supported by the SDK for C++ development:

- Carbide.c++ 1.2 , 1.3 and 2.0



Note: SDK documentation is integrated automatically into the Carbide.c++ IDE Help.

IDEs for Java development

- Eclipse 3.3.1 with EclipseME 1.7.7 and MTJ.



Note: SDK documentation is integrated automatically into the Eclipse IDE Help.

- Sun NetBeans IDE 6.0, 6.1 and 6.5



Note: SDK documentation is integrated automatically into the NetBeans IDE Help.



Note: Nokia N97 SDK supports usage of SUN's Universal Emulator Interface (UEI) interfaces (OTA and D-flags are not supported by the SDK). Consequently, you can use any IDE supporting the UEI together with the S60 SDK to develop Java MIDP applications.

Appendix B Supported accessories

Nokia N97 SDK supports the following accessories:

Bluetooth cards and dongles

- TDK BRBLU04
- Brainboxes BL-500
- Casira (HCI BCSP & H4)
- Cards supporting HCI BCSP
- Wrapper for Bluetooth USB dongles (with CSR chipset) at H4 mode

Network cards

Ethernet cards that comply with IEEE 802.3 standards (Ndismedium802_3)



Note: See IDE documentation for minimum hardware requirements.

USB versions

- version 1.0
- version 1.1
- version 2.0