NOKIA SMARTPHONE HACKS™

Tips & Tools for
Your Smallest Computer

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Pick the Right Class of Nokia Phone

Nokia phones come in many shapes, sizes, and models. The Nokia Device Series provides a logical way to categorize those phones according to their features.

In 2004, Nokia announced more than 40 new models of mobile phones to satisfy the diverse needs of the mass market. Add in the older devices that are still being supported, and you've got about 100 different models of Nokia phones currently in use by consumers. For most users, this forest of devices is confusing and difficult to navigate. Here is where a little knowledge about the Nokia device series could really help. If you are considering buying a Nokia smartphone in the near future, this hack also serves as a buyer's guide.

Most Nokia devices share many common characteristics and can be grouped into several device series. The Nokia device series distinction is primarily a convenience for application developers (who need to distinguish between classes of device capabilities) rather than general consumers. Yet, as power users, knowledge about the device series helps us quickly identify the user interface (UI) style, available software, and hacking options on any Nokia device. In this book, I discuss hacks in the context of device series. For example, some hacks are applicable to only one series of devices, and others need to be applied differently on each series.

Currently, most Nokia devices are grouped into three series: Series 40, Series 60, and Series 80. You can see a complete list of devices in each series by filtering through the device series in the Forum Nokia device matrix **[Hack #1]**. Now, let's look at the key characteristics of the devices in each series.

> The device series information is especially useful when you need to purchase a new device. Based on your software and UI requirements, you can quickly narrow down your search to a specific series. Then you can dig into the detailed device specification via the Forum Nokia device matrix or the consumer home page for each device on the Nokia web site.

Series 40

Series 40 devices are mass-market consumer devices with hundreds of millions of users. Figure 1-2 shows several popular Series 40 devices in use today.

A typical Nokia Series 40 device features a 128×128 LCD display with a 12-bit color depth (4,096 colors). Some devices have 96×65 or 128×160 LCD screens and other color depths. The UI on Series 40 devices consists of a

Nokia 7210   Nokia 6230   Nokia 6800 folded

Nokia 6800 opened

Nokia 3300

Figure 1-2. Popular Nokia Series 40 devices

hierarchy of view-switch screens. It typically displays five lines of text, plus headers. The keypad has the traditional alphanumeric keys, a four-way scroll key, the Send/End keys, and two or three generic soft keys. The device displays images in common file formats, receives AM/FM radio station signals, records voice messages, and plays Musical Instrument Digital Interface (MIDI) polysynthetic ring tones. Device extensions such as cameras, full

alphabetic keyboards, and MP3 players are available on selected Series 40 device models.

> Nokia does not officially call Series 40 devices "smartphones." However, as I indicated, Series 40 devices have a lot of smartphone features. Series 40 devices are covered in this book.

The software on Series 40 devices is based on the proprietary Nokia OS. The device is shipped with native software for telephony functions (e.g., the call log), Personal Information Management (PIM—e.g., contact lists and calendar), messaging (e.g., SMS, MMS, and email), and web browsing (e.g., WAP), etc. Since the Nokia OS is not open to developers outside of Nokia, you cannot hack into the core of the phone's operating system. However, Series 40 devices do have limited programmability via their Java application environment. So, you can hack and enhance the phone with Java applications [Hack #16].

Many highly successful Nokia Series 40 devices are available. The Nokia 7210 is one of the first compact color phones to support MMS and WAP browsing. The Nokia 6230 features a camera and advanced device software. The Nokia 5140 is a rugged device designed for an active lifestyle. The Nokia 6820 features a full keyboard and a camera. The Nokia 6170 is one of Nokia's first flip-open models.

Series 60

The Nokia Series 60 devices target the midrange to high end of the consumer market. Figure 1-3 shows several popular Series 60 devices.

A Nokia Series 60 device typically has a 176×208 LCD screen capable of displaying 65,536 (16-bit) colors. Series 60 devices with other UI configurations (e.g., the 640×320 touch screen on the Nokia 7710) were starting to emerge as of early 2005. The UI of a Series 60 device is similar to that of a PDA, with icons in the grid layout and standard menus from the toolbar. Compared to a standard Series 40 keypad, a Series 60 keypad has several additional keys, including an Application key, a Clear key, and an Edit key. A Series 60 device plays Audio/Modem Riser (AMR) voice tones as well as other Series 40 audio formats.

> The Series 60 platform is a licensable product from Nokia. It is licensed to seven other device makers.

Figure 1-3. Popular Nokia Series 60 devices

Similar to Series 40 devices, Series 60 devices ship with native applications for making phone calls, PIM, messaging, web browsing, and more. However, a major difference between Series 40 and Series 60 devices is in the base software. Instead of the proprietary Nokia OS, Series 60 devices are based on the Symbian OS, which exposes core device functionality via the open Symbian C++ API. "Run Symbian Applications" **[Hack #17]** covers how to install Symbian native applications onto your Series 60 device. In addition, Series 60 devices are programmable via the Java environment. As a result, the Series 60 devices are much more "hackable" than the Series 40 devices. Some of the hacks in this book apply only to Series 60 devices.

It is important to note that two different versions of the Symbian OS are in use today on Nokia Series 60 devices. Older devices, such as the Nokia 3650, use Symbian OS 6. Devices released after 2003, such as the Nokia 6600, use Symbian OS 7. The UIs of the two OS versions are slightly different. So, throughout the book, I sometimes differentiate between "newer" and "older" Series 60 devices.

Nokia Series 60 devices are among the best-selling smartphones in the world. The Nokia 3650 camera phone is very popular. The newer Nokia 6600/6620 camera phones feature hardware and software improvements over the Nokia 3650. The Nokia N-Gage is the first smartphone that is also a mobile game console.

Series 80

The Nokia Series 80 devices target high-end enterprise users. A Series 80 device typically has two user interfaces. When the phone is unfolded, a large 640×200 screen and a full alphabetic keyboard become available. You can use the phone as a sort of mini-laptop computer with this setup. When the phone is closed, the external 128×128 color screen and keypad provide a Series 40-style user interface.

The Series 80 devices are based on the Symbian OS. However, since its UI style is different from that of the Series 60, there is no guarantee that Series 60 Symbian applications will run on Series 80 devices. The hacks in this book are not tested on Series 80 devices.

Series 80 devices include the Nokia 9500 and 9300 Communicators.

Series 90

If Nokia had a secret lab in a mountain somewhere, with giant lasers and an evil genius, it probably used this lab to make its Series 90 devices. Nokia originally planned to release a device called the 7700, which featured a wide-angle display and a touch screen. For whatever reason, it sacked this hand-set and then released the 7710, which is a very unique multimedia power-house. The larger display is great for video and for Nokia's new "Visual Radio" that it's testing in Finland, but the Series 90 platform has been swal-lowed up by other development efforts, and much of what made the Series 90 so interesting will be incorporated into the Series 60 in the future. If you have a Nokia 7710, you have an island of Nokia technology, albeit a very cool island.