What's new for developers in Symbian OS v9.3?

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1 Introduction

Symbian OS v9.3 is primarily targeted towards device manufacturers, delivering updates to make the process of producing a device faster and more flexible, with the resulting products working more responsively. As such, Symbian OS v9.3 delivers fewer enhancements that are of interest to developers when compared to previous releases.

Enhancements introduced since Symbian OS v9.2 include:

- **IP Telephony** – support for 3GPP R5 telephony and deprecation of obsolete parameters
- **Short Link** – emulator support for USB dongles and USB on-the-go extensions
- **PIM and Messaging** – optimisations to Contacts Model, DBMS and SyncML components
- **System software** – enhancements to low level code and new hardware support

These are discussed in section 2 below.

2 Architectural Enhancements and New APIs

2.1 IP Telephony

3GPP R5 networking QoS parameter support

Connection level APIs, such as `RSubConnection`, have been extended to support the new QoS parameters for signalling indication and source statistics descriptor which were added as part of 3GPP R5. These parameters are specified in 3GPP TS 23.107 and 3GPP TS 23.207.

The QoS parameters associated with the connection level APIs would typically be used by real-time applications like PoC, VoIP and streaming multimedia.

`RSubConnection` has also been extended to support dedicated PDP contexts for special charging and enhanced QoS, as specified in 3GPP TS 24.228, 3GPP TS 24.229 and 3GPP TS 24.008. This is an optional part of the 3GPP R5 specification.

3GPP 99/R4 QoS support for primary contexts

Support has been added for 3GPP R99/R4 QoS on primary contexts. The support includes:

- updates to CommsDat tables and fields to handle relevant parameters
- setting default R99/R4 QoS parameters within the 3G NIF implementation
- providing an implementation of the existing `RSubConnection` API which is capable of modifying R99/R4 QoS parameters on the primary PDP context.

Support for R97/R98 QoS parameters on primary contexts is deprecated. The PSD agent is deprecated and won't be updated to support R99/R4 QoS.

2.2 Short Link

Emulator support for USB dongles

The Symbian OS v9.3 emulator supports the use of Bluetooth USB dongles (such as the TDK Bluetooth USB adaptor) on the emulator. The solution uses the standard Windows USB Host APIs to access the USB dongle. The support is provided to enable third party developers access to Bluetooth on the emulator without having to buy expensive specialist hardware.

USB on-the-go extensions and plug'n'play API

Symbian OS v9.3 enables USB Host 2.0 and On-The-Go (OTG) by

- extending the USB client to support those extensions needed for OTG
- defining an API to load and unload USB host drivers

Note that, although Symbian provides this support within its framework, the provision of USB Host stack and drivers is left to licensees and partners.

2.3 PIM Applications

A number of optimisations have been made in the Contacts Model, DBMS and SyncML components. The optimisations, made within the engines, will not affect binary compatibility of code, and the file format will be unchanged. However the file location will change, therefore:

- a contacts database stored on removable media by an old device will not be visible to a new device or vice versa
- a Contacts database that was restored from a backup from an old device will not be visible to a new device or vice versa

The main performance improvement is due to moving the Contacts model to a server-side architecture. This enables support for long-running transactions which in turn enable batching of multiple Sync operations into a single transaction.

Other benefits of the new server-side architecture include:

- ability to add multiple contacts in a single DBMS transaction
- easier migration to SQL storage due to better separation of responsibilities in the design

2.4 System Software

General enhancements

Symbian OS v9.3 has a number of enhancements that are intended specifically for device creators, but which may be of interest to developers. These include:

- hand-coded assembler routines tuned or replaced with compiled versions

  Hand-coded assembler routines have been either retuned for modern CPU cores (ARM11 or XScale) or, where compiled code efficiency is equivalent to the assembler code, replaced by C/C++ routines.

- hardware-dependent support has been added for “VFP” floating point acceleration and accelerated maths functions

  Where hardware is available, device creators will be able to use versions of Symbian OS classes that have support for VFP. This will enhance the performance of applications that make extensive use of floating point arithmetic (such as in 3D games, 3D engines and Java VMs). Note that applications compiled to make use of these enhancements will not run on devices that lack the specialist hardware.

3 Conclusion

A brief summary of the key features and technical specifications of Symbian OS v9.3 can be found on the Symbian web site in the Symbian OS v 9.3 product sheet.

Further information on these changes will be available in the Migration Guides in the Symbian OS Developer Library which comes with the DevKit.

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