Revolution SDK Roadmap

2009/10/15

The contents in this document are highly confidential and should be handled accordingly.

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Revision History

Version	Revision Date	Description
1.02	2009/10/15	Changed the format. Updated to match Revolution SDK 3.3.
1.01	2007/07/20	Changed the format. Updated to match Revolution SDK 3.1.
1.00	2006/03/01	Initial version.

1 Overview

This document describes the layout of the Revolution SDK. The intended audience is the programmer who will develop drivers or applications targeting the Revolution platform.

The various documents included in the Revolution SDK are described separately in the *Revolution SDK Document Roadmap* (`RVL-SDK-DocumentMap.pdf`).

2 SDK Components

This release of the Revolution Software Development Kit contains the following:

- Operating System library (OS).
- Memory Management library (MEM).
- Archive library (ARC/DACH).
- Compression/Expansion library (CX).
- Character Code Conversion library (ENC).
- Font library (FNT).
- Demonstration library (DEMO).
- System Settings library (SC).
- Devices libraries (DEBUG and Non-DEBUG), including (but not limited to):
  - Optical Disc (DVD).
  - Graphics (GX).
  - Graphics Display List (GD).
  - Matrix-Vector (MTX).
  - Texture Palette library (TPL).
  - Video Interface (VI).
  - Audio (AX).
  - Audio Interface (AI).
  - Articulator (AXART).
  - AUX Effects (AXFX).
  - Mixer (MIX).
  - Sequence (SEQ).
  - Synthesizer (SYN).
  - Sound Pipeline (SP).
  - Wii Remote Speaker Encoding (WENC).
  - Movie library (THP).
  - Wii console NAND memory library (NAND).
  - Nintendo GameCube Memory Card library (CARD).
  - Nintendo GameCube Controller library (PAD).
  - Wii Remote library (WPAD / KPAD).
  - Wii Balance Board library (WBC).
  - Host I/O library (HIO2).
  - Serial Interface (SI).
  - Human Device Interface (HID).
  - Extended Interface (EXI).
  - MIDI Adapter Library (MIDI).
  - Hardware Keyboard Library (KBD/KPR).
- NAND Application Development Kit (NADK).
- Disc Spin-Off Channel Development Environment (DISCNAND).
- Demonstration programs and source code.
- Revolution Function Reference Manual.

- Roland GM16 Wavetable
- License Information for Roland GM16 and Dolby ProLogic II.

Note: The list of included components are subject to change in the future as more features are added to the SDK.

3 SDK Layout

Table 3–1 SDK Layout Overview

Path	Description
`$(REVOLUTION_SDK_ROOT)`	Installation directory of the Revolution SDK.
`build/`	Build system, based on GNU make (version 3.80).
`buildtools/`	Rules and definitions for the build system.
`libraries/`	Source code for some libraries are included here.
`demos/`	Demo program source code.
`tools/`	Host PC based tools for converting sound/texture/etc. data.
`samplebuild/`	Simple makefile example for creating your own build.
`include/`	Header files.
`dvddata/`	Data for demo programs, accessed via disk emulator.
`data/`	Resource data.
`docs/`	Overviews and guides, in PDF format.
`man/`	Function reference, in HTML format.
`RVL/`	Binaries for the RVL target go here.
`X86/`	Binaries for host PC based tools go here.

In general, the `build/` directory contains source code and the makefiles for building some components of the SDK. For a detailed explanation of the build system, please refer to the Revolution SDK Build System Overview (`RVL-BuildSystem.pdf`).

The `RVL/` and `X86/` directories are *target* directories which contain the output of the build system. The `RVL/` directory contains binaries (libraries and executable files) for the Revolution hardware. The `X86/` directory contains tools and DLLs for the PC.

3.1 The Demos

The Revolution SDK includes several demo programs that illustrate use of the libraries and device drivers. Source code is provided, as well as pre-built executable files.

Note that several demos will read texture, audio, or other data from the (emulated) optical disc; this data is also included in the SDK under the `dvddata/` directory.

Table 3–2 on page 9 describes a portion of the demos included in the SDK. For detailed information on the demos, see **Sample Demos** in the *Revolution Function Reference Manual*.

Table 3–2 Revolution Demo Programs

Path	Description
`RVL/bin/demos/videmo/`	How to display graphics rendered by GX.
`RVL/bin/demos/dvddemo/`	How to access the optical disk.
`RVL/bin/demos/gxdemo/`	Many demos to render 2D and 3D graphics.
`RVL/bin/demos/osdemo/`	Many demos to illustrate how to use the RVL OS.
`RVL/bin/demos/axdemo/`	How to play and manipulate sounds using AX.
`RVL/bin/demos/spdemo/`	How to load and manage audio samples and related data using the Sound Pipeline.
`RVL/bin/demos/paddemo/`	Legacy Nintendo GameCube controller demo.
`RVL/bin/demos/scdemo/`	How to use the System Settings API to read system preferences.
`RVL/bin/demos/wpaddemo/` `RVL/bin/demos/kpaddemo/`	Simple usage of the Wii Remote.
`RVL/bin/demos/memdemo/`	Memory allocation and management using the MEM library.
`RVL/bin/demos/nanddemo/`	Creating, reading, and writing to files on the NAND flash memory.
`RVL/bin/demos/sample/`	A simple “Hello, World!” demo.

3.2 The Libraries

Libraries for Revolution applications can be found here:

Table 3–3 Revolution Libraries

Path	Description
RVL/lib/	Libraries for Revolution applications. Debug versions are appended with *D.a. Release versions are named *.a.
build/libraries/	Some libraries include source code. Source, object files, and binaries can be found in the build/ hierarchy.

Libraries for PC-based tools can be found here:

Table 3–4 PC-based Tool Libraries

Path	Description
X86/lib/	Libraries for PC-based tools and applications. Debug versions are appended with *D.a. Release versions are named *.a.

3.3 The Documentation

3.3.1 Function Reference Manual

The Revolution Function Reference Manual is a series of HTML documents formatted as UNIX-style man pages. Note that the DEMO programs are documented within the man pages as well.

$(REVOLUTION_SDK_ROOT)/man/en_US/index.html

3.3.2 Programming Manuals

For an overview of the Revolution SDK and development environment, a series of PDF documents are included in the following directory:

`$(REVOLUTION_SDK_ROOT)/docs/`

Table 3–5 Revolution SDK Programming Manuals

Directory	Remarks
Audio Programmer's Guide	Description of the AX library and its associated asset-management pipeline (SP).
Graphics Programmer's Guide	Description of the GX library.
Guidelines	Descriptions of cautions and specifications for application development.
Hardware Transition Guide	Describes the differences and how to migrate from the Nintendo GameCube platform.
PMIC Library Guide	Describes the icons displayed during Voice Chat and stores the Voice Chat icon data.
Programmer's Guide	Describes how to use the build system and highlights key points for developing applications on the Wii.
Quickstart	Describes settings for the Wii development environment.
THP Library Guide	Describes the THP library.

3.3.3 Licensing Information

The files that deal with licensing information for Roland GM16 and Dolby ProLogic II are included in the following directory:

`$(REVOLUTION_SDK_ROOT)/docs/en_US/License/`

3.4 Demo Data and DVD Data

Some of the DEMO programs included in the Revolution SDK will read data from (emulated) optical disks. This data is stored in the following directory:

`$(REVOLUTION_SDK_ROOT)/dvddata`

For details on how to specify this directory as the "target file system" for the disc emulator, see the *Wii Development Environment Quickstart Guide* (`RVL-QuickStartGuide.pdf`).

3.5 Resource Data

Resource data provided with the Revolution SDK is stored in the following directory.

`$(REVOLUTION_SDK_ROOT)/data`

Table 3–6 Revolution SDK Resource Data

Directory	Remarks
`iconbanner/`	Provides icon and banner template data, as well as data for the antipiracy logos.
`strap/`	Provides the Strap Usage Screen, which prompts the user to use the Wii Remote strap.
`strap_mp/`	Provides the Strap Usage Screen for Wii MotionPlus Exclusive Software, which prompts the user to use the Wii Remote strap.
`zapper/`	Provides the Wii Zapper Usage Screen, which explains how to hold the Wii Zapper.