

Revolution

SDK Roadmap

SDK Version 1.00

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Revision History

Revision No.	Date Revised	Items (Chapter)	Description
22-Mar-2006	3/22/2006	-	First release by Nintendo of America Inc.

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.

2 SDK Components

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

- Operating System library (OS).
- Memory Management library (MEM).
- Devices libraries (DEBUG and Non-DEBUG), including (but not limited to):
 - Optical Disc (DVD).
 - Graphics (GX).
 - Video Interface (VI).
 - Audio (AX).
 - Audio Interface (AI).
 - NAND Secure Flash File System (NAND).
 - Nintendo GameCube Memory Card Library (CARD).
 - Nintendo GameCube Controller Library (PAD).
 - Revolution Controller Library (WPADEmu).
 - DEMO Library (DEMO).
 - Host I/O library (HIO2).
- Demonstration programs and source code.
- Overview documentation.
- Revolution API Reference Manual.
- Roland GM16 Wavetable
- License Information for Roland GM16 and Dolby ProLogic II.

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

3 SDK Layout

The Revolution SDK layout is very similar to that of the Nintendo GameCube SDK.

Table 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.

Table 1 - SDK Layout Overview

Path	Description
docs	Overviews and guides, in PDF format.
man	API Manuals, 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 [insert reference].

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 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 Configuration API to read and write system preferences.
RVL/bin/demos/wpaddemo/	Simple usage of the Revolution controller.
RVL/bin/demos/carddemo/	Legacy Nintendo GameCube memory card library demo.
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 - Revolution Libraries

Path	Description
RVL/lib/	Libraries for Revolution applications. Debug versions are appended with *.a. Release versions are named *.a.
RVL/build/libraries/MEM	Some libraries include source code. Source, object files, and binaries can be found in the build/ hierarchy.
RVL/build/libraries/DEMO	
RVL/build/libraries/G2D	
RVL/build/libraries/MTX	
(etc.)	

Libraries for PC-based tools can be found here:

Table 4 - PC-based Tool Libraries

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

3.3 The Documentation

The Revolution API Manual is a series of HTML documents formatted as UNIX-style man pages. They are very similar to the Nintendo GameCube man pages.

Note that the DEMO programs are documented within the man pages as well.

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

Table 5 - Revolution Libraries

Document	Remarks
Architecture Guide	An overview of the Revolution hardware and software SDK architecture. This document highlights the differences from Nintendo GameCube to facilitate migration.
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.
Hardware Transition Guide	Describes the differences and how to migrate from the Nintendo GameCube platform.

Table 5 - Revolution Libraries

Document	Remarks
Programmer's Guide	Describes how to use the build system and highlights key points for developing applications on Revolution.
Quickstart Guide	How to install and setup your development environment for the Revolution SDK. Also discusses tips on maintaining multiple Nintendo game platform environments on a single machine.

3.4 Demos and dvddata

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

```
(REVOLUTION_SDK_ROOT)/dvddata
```

For details on how to specify this directory as the “target file system” for the disc emulator, please refer to the installation notes under the Quickstart Guide of the Revolution SDK documentation.