Mastering Tools Quick Start Guide

Version Date 2007/09/03

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Revision History

Version	Revision Date	Description
1.8	2007/09/03	Revised entire document.
	2007/08/07	Chapter 7: Revised description of update methods.
		Section 8.2: Added an explanation concerning the Revolution Disc Check Tool.
		Section 8.1: Deleted the section "Build Targets."
		Section 8.3: Deleted the section "Applications Created with Previous Versions of the Revolution SDK."
1.7	2007/07/20	Made format changes to entire document.
		Chapters 3 and 5: Revised description concerning rrvlwriter.
		Chapter 4: Added supplemental description of openssl downloads.
		Chapter 5: Added explanation for creating double-layered discs.
		Section 8.3: Deleted section "RVT-R Reader Distributed at E3."
1.6	2007/01/15	Chapter 4: Added description for the installation warnings.
1.5	2006/09/22	Complete revision of comments related to the SDK version.
		Section 8.5: Added a description of time reduction of Makemaster.
1.4	2006/09/21	Chapters 1 and 8: Revised the supported SDK version
		Chapter 7: Deleted a description of automatic update
1.3	2006/09/08	Chapters 1 and 8: Revised the corresponding SDK version.
		Chapter 5: Added a description of setcountrycode and revised the value of FSTUserEnd.
		Chapter 7: Revised the description of the update method.
1.2	2006/08/25	Chapter 5: Added 64 MB setting for setmem2size.
		Chapter 7: Added NDEV firmware version.
1.1	2006/08/17	Added the following chapter and section:
		• 7 Firmware Update for the RVT-R Reader
		• 8.4 Applications Created with Previous Versions of the Revolution SDK
1.0	2006/08/14	Initial release.

1   Overview

This document describes mastering-related tools such as the makemaster tool, which generates the Wii disc image RVM files.

2   System Requirements

The Revolution Mastering tool runs on x86-compatible PCs using Microsoft Windows XP SP2. The minimum system requirements are as follows:

- 1.0 GHz Pentium/Athlon-class CPU
- 512 MB of RAM
- 20 GB of free hard disc space (40 GB for creating double-sided disc images)

3 Included Software

- `makemaster_XXXXXX`   RVM (Revolution Master File) creation tool
- `rdpack_XXXXXX`   Revolution dlf/dvdroot packager
- `makeUpdateDisc_XXXXXX`   Update Disc creation tool for the RVT-R Reader

4   Installation

For information on installing each software tool, see the readme files in each directory.

Note that the openssl utility included in Cygwin is needed to run makemaster. The version that is confirmed to work, openssl 0.9.8b-1, is not currently included in the cygwin package. Please download openssl 0.9.8b-1 from http://www.warioworld.com, the Nintendo Software Development Support home page.

5   Procedure for Creating Master Data

The chapter outlines the procedure for creating master data.

5.1   Set the MEM2 Memory Size and Country Code

1. Set the MEM2 memory size to 64 MB, the same as the actual console. It is not possible to make RVM files that use 128 MB of MEM2. Execute the following command:

        > setsmem2size 64

2. Execute the following command to set the disc's country code:

        > setcountrycode [jp|us|eu]

3. Confirm that the following is true for the `.ddf` file (`$NDEV/bin/NdevRun.ddf`):

    · [DiscID] section is set appropriately
    · [BB2] section FSTuserEnd is 0x100000000 for a single-layer disc or 0x1DC000000 for a double-layer disc

4. Execute the following command to create the `.dlf` file:

        > ndrun xxx.elf

    Note: In an environment where the NDEV is connected, run the following command instead of `ndrun` to create the `.dlf` file:

        > NdevRun xxx.elf

5.2   Create the Master Data

Execute makemaster to create master data, using the `.dlf` file as an argument. See the documents in the `makemaster` directory in this package for more on using makemaster.

5.3   Confirm That It Runs on NDEV

Before burning it to the RVT-R disc, we recommend using the NDEV to confirm that the master data has been authored correctly.

To confirm that master data has been authored correctly, run the following:

        > ODEM -l -r xxx.rvm

5.4   Create an RVT-R Disc

Use rvlwriter to create an RVT-R disc. See the manual in the rvlwriter package for more information.

6   Transferring Master Data

Given the large size of RVM files, master data can take time to transfer. On the other hand, if you choose to transfer the `.dlf` file and the files under the `$DVDROOT` directory instead, you might miss one of the necessary files, even though the total amount of data to transfer is minimized.

To avoid these problems, it is convenient to package the necessary files, including the `.dlf` file and those in the `$DVDROOT` directory, into a `.rpf` format file. The rdpack tool is available for conversions. For more information, see the document in the `rdpack` directory.

7 Firmware Update for the RVT-R Reader

For original applications to run on the RVT-R Reader, you must confirm that the firmware required by those applications is installed on the RVT-R Reader.

In SDK 3.1 and later, it is possible to add every official release of the firmware to date to the RVM file as update data. When a disc burned with this RVM file is run, all the firmware is automatically installed on the RVT-R Reader.

- When the RVT-R Reader needs no firmware installed, it is also possible to create an RVM file without update data.

- It is also possible to use `makeUpdateDisc` to install specific firmware, as was done in SDKs prior to SDK 3.1. This creates an RVM file used for updating, so make an RVT-R disc from this RVM file and run it on the RVT-R Reader.

Note: The previous status of the firmware cannot be restored after firmware is updated.

8 Notes

8.1 Execution Results for makemaster

Every time makemaster is run, the master data will be different, even when the original files are the same. Qualitatively speaking, the same data is created, and there is no impact on execution. To determine whether the data is qualitatively the same, use the Revolution Disc Check Tool.

8.2 About makemaster Time Reduction

Although time is required to create `rvm` files using makemaster, the amount of time can be reduced by using the following methods.

- Defragment the hard disc drive.
  Although Windows includes a defragmenting tool, commercially available software for this purpose can be more effective.

- Use a different hard drive from the one on which the OS is installed.
  If more than one hard drive is connected, use a hard drive that does *not* have the OS installed on it.

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