

N I N T E N D O
NITRO-System

NITRO-Composer
Quick Start Guide

Version 1.2.0a

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

Confidential

These coded instructions, statements, and computer programs contain proprietary information of Nintendo of America Inc. and/or Nintendo Company Ltd. and are protected by Federal copyright law. They may not be disclosed to third parties or copied or duplicated in any form, in whole or in part, without the prior written consent of Nintendo.

Table of Contents

1	Introduction	5
2	Quick Start.....	6
2.1	Preparing the Development Tool	6
2.2	Setting Up NITRO-System	6
2.2.1	Extracting the Package	6
2.2.2	Setting Up Environment Variables.....	6
2.3	Using the SoundPlayer.....	6
2.3.1	Converting the Sample Data	6
2.3.2	Executing SoundPlayer.....	6
2.3.3	Playing Back the Sound	7
2.3.4	About NITRO-Player	8
2.4	Sound Playback method.....	8
2.4.1	Sequence Playback.....	8
2.4.2	Stream Playback	9
2.5	Sound Archives	9
2.5.1	The Flow of Sound Data Creation	9
3	The Next Step	11

Figures

Figure 2-1	SoundPlayer Screens.....	7
Figure 2-2	Flow of How Sound Data is Created	9

Revision History

Version	Revision Date	Description
1.2.0a	2007/04/27	Corrected typographical errors. Changed dates in Revision History to international format.
1.2.0	2005/10/24	General editing. Fixed figure labels. Updated TOC. Tried to improve uniformity in terminology.
1.2.0	2005/01/31	Added a description related to the NITRO-Player. Replaced the SoundPlayer screen.
1.1.2	2004/09/16	Unified the name of .sadl files as "sound label files."
1.1.1	2004/09/02	Replaced the SoundPlayer screen.
1.1.0	2004/08/10	Added an explanation of stream playback.
1.0.0	2004/07/20	SoundPlayer.bin changed to SoundPlayer.srl.
0.3.0	2004/06/01	Made revisions associated with changes in the SoundPlayer development environment. Revised the explanation of sound data.
0.2.0	2004/04/01	Made corrections associated with changes to directory organization. Made additions about general flow of sound data. Deleted "Feature Overview." Added information about "Sound System Manual."
0.1.0	2004/03/01	Initial Version.

1 Introduction

This document explains how to use NITRO-Composer to start developing sound.

2 Quick Start

This document explains how to begin sound development with NITRO-Composer.

2.1 Preparing the Development Tool

NITRO-Composer is part of the NITRO-System. To use NITRO-Composer, you must set up the NITRO-System environment.

2.2 Setting Up NITRO-System

A simple explanation of setting up NITRO-System is provided. For more information, refer to the NITRO-System documentation.

2.2.1 Extracting the Package

Obtain the NITRO-System package and extract it with a decompression tool.

2.2.2 Setting Up Environment Variables

Set the absolute path for the `NitroSystem` expanded directory to the environment variable, `NITROSYSTEM_ROOT`. This directory will be referred to as `$NitroSystem` from this point.

2.3 Using the SoundPlayer

SoundPlayer is a development environment that enables you to convert sound data and check sound using NITRO-Composer. SoundPlayer is used to create sound data. This section contains an explanation of how to use the SoundPlayer.

2.3.1 Converting the Sample Data

A demo using SoundPlayer is located in `$NitroSystem/tools/nitro/SoundPlayer/data`. Double-click on `MakeSound.bat` in the data directory to execute.

If conversion is successful, a window will appear and then close immediately. If an error occurs, the window remains open, and the system displays an error message.

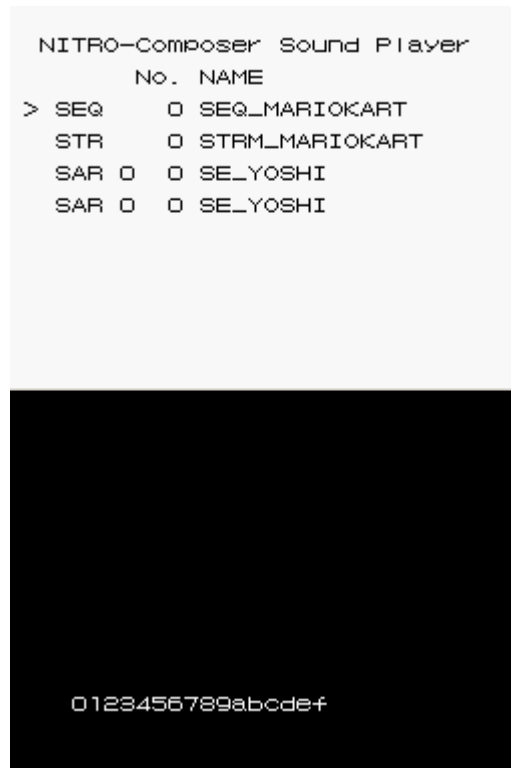
2.3.2 Executing SoundPlayer

If conversion is successful, SoundPlayer will generate a `SoundPlayer.srl` file in the data directory. To execute this file, load the file into IS-NITRO-DEBUGGER.

2.3.3 Playing Back the Sound

If the SoundPlayer is used correctly, the screens in Figure 2-1 appear.

Figure 2-1 SoundPlayer Screens



The first screen displays the operations menu, while the second screen displays the playback state.

Play back a sequence using the up and down keys on the +Control Pad to align the cursor with `SEQ` and pressing the A Button. You can select sequences using the Left and Right keys on the +Control Pad. In Figure 2-1, only one data sequence has been registered, so selection of other sequences is not possible.

Stream data can be played back by using the up and down keys on the +Control Pad to align the cursor with `SAR` and pressing the A Button. Two stream data sets can be selected by using the Left and Right keys on the +Control Pad.

A sequence in the sequence archive can be played back by aligning the cursor with `SAR` and pressing the A Button. Multiple sequences can be selected using the Left and Right keys on the +Control Pad. (The sequence archive is described in paragraph 2.4.1.1 Sequence Archives.)

The B Button stops the playback of the sound.

Refer to the *NITRO-Composer Sound Designer Guide*

(`NITRO_Composer_SoundDesignerGuide.pdf`) for more information about using the SoundPlayer.

2.3.4 About NITRO-Player

NITRO-Player, like SoundPlayer, is a tool used to check the sound data playback.

Unlike SoundPlayer, NITRO-Player can perform operations such as sequence playback in Windows. SoundPlayer cannot be used for customized playback, but NITRO-Player can be used for customized playback, such as changing playback tempo or muting selected tracks.

Although the easy-to-use SoundPlayer is introduced in this section, it is recommended that sound designers who repeatedly check playback should use NITRO-Player. After gaining an understanding of how NITRO-Composer works, try using NITRO-Player.

The documents for NITRO-Player can be found in the `$NitroSystem/docs/NitroPlayer` directory.

2.4 Sound Playback method

There are two main methods for playing back sound data, sequence playback and stream playback.

2.4.1 Sequence Playback

Three types of data are required for a sequence playback. The following three types of data must be loaded into main memory before you can play a sequence.

- Sequence data
- Bank data
- Waveform data

Sequence data corresponds to sheet music, and contains information about the order in which the notes are played and the pitch of those notes. The file is stored in the `data/mid` directory.

Bank data is similar to a set of musical instruments. The bank data only contains information about instrument types. The instrument voices are in waveform data. The sequence data uses the bank data to play sounds. Bank data can be found in the `data/bnk` directory and waveform data can be found in the `data/aif` directory.

2.4.1.1 Sequence Archives

A sequence archive is a single file that contains the sequence data sets. Sequence archives permit multiple sequences to be played from a single data set and are used primarily for creating sound effects sequences. Sequence data sets for sound effects are usually small but diverse in form.

Because it is inefficient to handle sequence data of sound effects as separate data sets, data sets are consolidated into a sequence archive.

Sequence archives are stored in the `data/mus` directory.

2.4.2 Stream Playback

For stream playback, only the waveform data is needed. When playback starts, the selected waveform data is simply played back, as is. The waveform data for stream playback is in the `data/strm` directory.

Unlike sequence playback, stream playback does not require that the waveform data be loaded into main memory in advance. Because small portions of the waveform data are loaded during playback, a waveform that extends over a long time can be played back using a minimal amount of memory.

For the proper use of sequence playback and stream playback, see the *NITRO-Composer Sound System Manual*.

2.5 Sound Archives

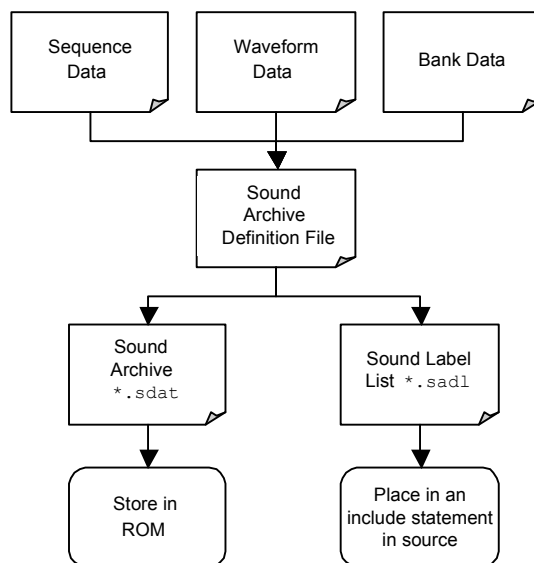
Sound data is composed of various types of data, but each data set is ultimately consolidated into a single sound archive file. Consolidating it into a single file makes collaboration between sound designers and programmers easier and improves program efficiency.

The sound archive is called `sound_data.sdat` and stored in the `data` directory. The sound designer uses the sound archive definition file `sound_data.sarc` in the `data` directory to define the sound data types to include in the sound archive.

2.5.1 The Flow of Sound Data Creation

Figure 2-2 depicts the creation of the sound data.

Figure 2-2 Flow of How Sound Data is Created



When using the Sound Archiver `sndarc` tool to convert the sound archive definition file, the generated sound archive contains the grouped sets of sound data. To perform this operation, double click the `MakeSound.bat` to convert the sample data.

This sound archive is stored in ROM until it is loaded and played back. The sound label file is output at the same time as the sound archive. The sound label file has the `*.sadl` file extension and it assigns the sequence numbers as labels. By including this file in an include statement, the sound programmer can specify sequences using labels instead of numbers.

3 The Next Step

To learn the basics about NITRO-Composer, refer to the *NITRO-Composer Sound System Manual* (NITRO_Composer_SoundSystemManual.pdf).

To learn how to create sound data, refer to the *NITRO-Composer Sound Designer Guide* (NITRO_Composer_SoundDesignerGuide.pdf).

To learn how to create a program using sound data, refer to the *NITRO-Composer Sound Programmer Guide* (NITRO_Composer_SoundProgrammerGuide.pdf).

Microsoft Windows is a registered trademark or a trademark of Microsoft Corporation in the United States and other countries.

Other company names, product names, etc., are registered trademarks or trademarks of their respective companies.

© 2004-2007 Nintendo

Any duplication, reproduction, transcription, distribution, or lending of the content of this manual or any part of it without the authorization of Nintendo Co. Ltd. is prohibited.