

N I N T E N D O  
**NITRO**-System  
**Library Release Notes**

2007/03/14 Release Version

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

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## Revision History

Version	Date	Content
NA	2007/03/14	Updated for March 14, 2007 release.
NA	2004/08/02	Release.
NA	2004/06/22	Release.
NA	2004/05/24	Revised "Overview." Change "NITRO-System Information" to "NITRO-System Library Information."
NA	2004/04/12	Initial version.

# 1 Overview

This package is the March 14, 2007 version of the Nintendo NITRO-System Library.

NITRO-System is a collective term for the basic tools and libraries that are used to develop game software for the Nintendo DS system. This document contains the release notes for the NITRO-System Library that is included with NITRO-System.

## 2 Package Contents

The NITRO-System Library package contains the following.

- Foundation library (Fnd library)
- Graphics Foundation Library (Gfd library)
- 2D Graphics Library (G2D library)
- 3D Graphics Library (G3D library)
- NITRO-Composer (Sound library)
- Multiple Channel Stream library (mcs library)
- Tools for various converters
- Manuals and Function Reference

### 2.1 Extracting the NITRO-System Library Package

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Extract the NITRO-System Library package to any location on the local drive. The NITRO-System Library package is a compressed .zip file. You must use an appropriate extraction tool to extract the .zip file. When the package is extracted, a directory named NitroSystem is created.

### 2.2 NITRO-SDK Version

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The NITRO-System Library that is supplied with this release requires NITRO-SDK 4.0. If you are using an older version of the NITRO-SDK, update the NITRO-SDK.

## 3 Changes from the 2006/05/29 Version

Here are the major changes in this version. For details on the changes, see the release notes for each library.

### 3.1 Revisions to the G2D Library and Tools

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#### 3.1.1 Library Revisions

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- The function declaration portion within the library header files that was declared with static inline was changed from static inline to inline.
- The `NNS_G2dGetOamBuffer()` function was added for getting the pointer to the OAM manager module's internal buffer.
- A revision was made so that the region transferred in `NNS_G2dBGLoadScreenRect` will be clipped if it exceeds the range of the source or destination of the transfer.
- Added support for vertical writing and vertical style of character drawing.
- The three demos `PortraitHW`, `PortraitSW`, and `DrawVertical` were added to the sample demos.
- The `OBJ1D` and `MinimumCanvas` sample demos were changed so that the VRAM mode and the color mode can be switched, and if `CharCanvas` is of an illegal size, a warning or correction was made to occur.

#### 3.1.2 Binary Converter

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- There was a bug that caused illegal shutdown codes not to be returned correctly for data for which the number of displayed frames is zero for all animation frames, but this has been corrected.
- When animation frames with zero displayed frames were specified at the end of a multi-cell animation sequence, the end frame was being displayed mistakenly, but this bug has been fixed.
- If a zero is specified as the number of displayed frames at the end frame of a cell animation sequence within a multi-cell animation sequence, there were cases in which animations were not updated correctly due to the timing of the multi-cell animation updates. This bug has been fixed.
- A feature was implemented to check for illegal character numbers of OBJs within cells, and illegal data was made to cancel the conversion.
- The `-icc` option was added to disable the feature for checking for illegal character number of OBJs within cells.
- The `-cza` option was added to check animation frames for which zero was specified as the number of displayed animation frame and treat these as illegal data.

### 3.1.3 fontcvtr

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- Added a feature to output NITRO fonts for vertical writing.
- Added a feature to output NITRO fonts for vertical-style.
- Added an option to make the font size be interpreted in the same way as does general Windows software if a Windows font is being used as the input.
- Added a “soft antialiasing” feature that can improve the output quality depending on the font if converting a Windows font that is not monochrome.
- Owing to the addition of the feature to output NITRO fonts for vertical writing and vertical-style, the glyph rotation feature during BMP output was removed from the GUI version. It can be used with the CUI version.
- A bug was fixed that caused fonts not to be output correctly if a Windows font was specified as input and “Levels of Gray” was set to 2.
- A bug was fixed in the command line (CUI) version in which the `-iu` command line option had become `-iv`. `-iu` is the correct option, but `-iv` can also be used for the sake of compatibility (this doesn’t appear in the manual).
- A bug was causing the color of the width line to be processed in the same way as the color within the cell, but it has been fixed.
- A bug was fixed that caused the message window to close even when conversion failed in the GUI version.
- Characters having the same character codes had been appearing in both the European character region and the Japanese character region of the character order file (`ds_ipl.xlor`) that outputs the IPL font table, so it was corrected..
- A character order file was added to output fonts for the Chinese and Korean IPL.
- Added a character order file to output characters used by UHC (CodePage 949).

## 3.2 Graphics Foundation Library Revisions

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- Specified a debug output callback function for each type of VRAM manager, and added the `NNS_GfdDumpXXXXEx( )` function for outputting debug information.

## 3.3 NITRO-Composer Revisions

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### 3.3.1 Changes to the Sound Data

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- A feature was added to SoundPlayer that allows output effects to be changed.
- The processing load of the stream thread during stream playback was made to be displayed on the SoundPlayer screen.
- A feature was added to play multiple sounds at the same time in SoundPlayer.
- The `--align` option was added to the sound archiver for specifying the alignment of sound data within an archive.
- The `--convert` option was added to the sound archiver for specifying the files to convert by file type.

### **3.3.2 Changes to the Program**

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- The `NNS_SndArcStrmGetChannelCount` function, which gets the number of channels of the stream data being played, and the `NNS_SndArcStrmSetVolume` function, which changes the volume of a stream, were added.

### **3.3.3 Bug Fixes**

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- Fixed a bug that caused a conversion error due to a command line argument overrun when the number of files such as bank files increased.

## **3.4 NITRO-Player**

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- Added a feature for converting files by specifying the file type. Using this feature can sometimes reduce the conversion time.

## **3.5 mcs Server Revisions**

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- Added a command line option to turn on the power to the DS Game Card slot.

## **3.6 IDE Samples**

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- The file `IDE_BuildGuide.pdf` was added, which explains how to build the NITRO-System samples with CW IDE.
- Added a CW IDE project sample (`NitroSystem/build/demos/IDE`).

## 4 NITRO-System Library Information

Information regarding the Nintendo NITRO-System is located in the `docs` directory of the NITRO-System source tree. Read the following documents first.

(1) Build System

Storage location: `NitroSystem\docs\Readme\BuildSystem.pdf`

This document explains the procedures for building the Nintendo NITRO-System Library and demo programs, and the structure of the source tree.

(2) Foundation Library Release Notes

Storage location: `NitroSystem\docs\Foundation\Foundation_ReleaseNotes.pdf`

This document contains the release notes for the Nintendo NITRO-System Foundation Library.

(3) Graphics Foundation Library Release Notes

Location: `NitroSystem\docs\GraphicsFoundation\GraphicsFoundation_ReleaseNotes.pdf`

This document contains the release notes for the Nintendo NITRO-System Graphics Foundation library.

(4) G2D Library Release Notes

Storage Location: `NitroSystem\docs\G2D\G2D_ReleaseNotes.pdf`

This document contains the release notes for the NINTENDO NITRO-System G2D Library.

(5) G3D Library Release Notes

Location: `NitroSystem\docs\G3D\G3D_ReleaseNotes.pdf`

This document contains the release notes for the Nintendo NITRO-System G3D library.

(6) NITRO-Composer Release Notes

Storage location: `NitroSystem\docs\NitroComposer\NITRO_Composer_ReleaseNotes.pdf`

This document contains the release notes for the Nintendo NITRO-System NITRO-Composer.

(7) mcs (Multiple Channel Stream) Library Release Notes

Location: `NitroSystem\docs\mcs\mcs_ReleaseNotes.pdf`

This document is the release notes for the Nintendo NITRO-System mcs library.

(8) NITRO-Player Release Notes

Location: `NitroSystem\docs\NitroPlayer\NITRO_Player_ReleaseNotes.pdf`

This document contains the release notes for the Nintendo NITRO-System NITRO-Player.



## 5 Cautions

### 5.1 Operations in Multi-Thread

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NITRO-System library is not designed to be thread-safe (supporting multi-thread). Therefore, when calling API of NITRO-System's library from the interrupt handler or a different thread, it might not work properly.

However, the functions of the sound driver (SND) are thread-safe, so they can be called from the interrupt handler or different threads.

### 5.2 Using the Divider

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The G2D and G3D libraries of NITRO-System use the divider. For this reason, using NITRO-System without saving or restoring the state of the divider within the interrupt processing may cause the results of calculations at the interrupt source to be destroyed.

If using NITRO-System in the interrupt processing, be sure to use NITRO-SDK's `CP_SaveContext()` and `CP_RestoreContext()` to save and restore the state of the divider.

### 5.3 Regarding Image Data and Music Data in Samples

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Copyrights for the image data and music data used in the demo and sample programs included in this package are the property of Nintendo. This data may only be used in the demo and sample programs in this package, and may not be used in any other programs.

### 5.4 Font Licenses

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Versions released on and after 2005/06/06 of the Nintendo NITRO-System library includes a font converter (fontcvtr). By using this fontcvtr, you can convert any font installed on a PC to a form usable by Nintendo DS. However, in order to sell software that uses these fonts, you must obtain licenses for them. Please obtain the required licenses for each game program. fontcvtr and NITRO-System do not include licenses for any fonts, including LC fonts.

This package contains the software developed by Apache Software Foundation (<http://www.apache.org/>).

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