

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

Version 1.0.3

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## Revision History

Version	Revision Date	Description
1.0.3	2007/03/14	Added information display function for debugging.
1.0.2	2005/09/01	Added information display function for debugging.
1.0.1	2004/12/06	Fixed bugs in the linked list VRAM manager.
1.0.0	2004/11/10	Updated version to 1.0.0.
0.2.0	2004/10/10	Added linked list VRAM manager. Changed the search order for the free regions for frame texture VRAM manager. Added cautions relating to multi-thread operation.
0.1.0	2004/07/20	Initial version.

# 1 Graphics Foundation Library

The Graphics Foundation Library provides basic functions for handling NITRO graphics.

## 1.1 Functions Provided with the Graphics Foundation Library

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At this time, the Graphics Foundation Library provides the functions described below.

### 1.1.1 VRAM Managers

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VRAM managers dynamically allocate and release memory from VRAM. There are two types of VRAM managers. One is the texture VRAM manager for securing and releasing the texture memory, and the other is the palette VRAM for securing and releasing the palette memory. For further details, refer to the *VRAM Managers* manual and the function reference.

### 1.1.2 VRAM Transfer Manager

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The VRAM transfer manager provides functions for registering user requests to rewrite VRAM to the queue as VRAM transfer tasks, then writing the data to the VRAM according to that registered task. For further details, refer to the *VRAM Transfer Manager* manual and to the function reference.

## 1.2 Multi-Thread Operation

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The NITRO-System library is not designed to be fundamentally thread-safe (that is, support multi-threading). Therefore, it may not operate normally when calling the Graphics Foundation library functions from the interrupt handler or from a different thread.

## 2 Major Changes

### 2.1 Changes from Version 1.2.0

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#### 2.1.1 General

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

### 2.2 Changes from Version 1.1.0

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#### 2.2.1 General

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Added `NNS_GfdDumpXXX( )`. This routine outputs debugging information to the various VRAM managers.

### 2.3 Changes from Version 1.0.0

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#### 2.3.1 General

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- To improve the performance, changed some of the internal functions to inline.
- Added three sample demos that show how to use each of the VRAM Managers.

#### 2.3.2 Frame Texture VRAM Manager

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Fixed the following bug: initialization was not executed correctly when the manager was initialized multiple times, using `NNS_GfdInitFrmTexVramManager( )` with different parameters. (The bug in which the settings of the search sequence of the manager's empty regions were tied to the settings of the primary initialization was fixed. The search order of empty regions should be changed appropriately for each initialization based on parameters.)

#### 2.3.3 Linked List Texture VRAM Manager

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- Fixed the following bug: the initialization of the manager was not done properly when the control VRAM region's size was specified as smaller than the size of 1 slot (0x20000).
- Fixed the following bug: the initialization of the manager was not done properly when the control region's size was specified in units smaller than the size of 1 slot (0x20000).

## **2.4 Changes from Version 0.1.0**

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### **2.4.1 General**

Added the link list VRAM manager.

### **2.4.2 Frame Texture VRAM Manager**

Changed the order of empty space search according to the number of VRAM slots that control the frame texture VRAM manager. This change makes the use of available VRAM possible.

### 3 Known Issues

There are no known issues at this time.



## 4 Future Release Plans

There are no future release plans at this time.

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