

g2dcvtr Manual

Version 1.0.4

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

Table of Contents

1	Introduction	4
2	Use	5
3	How to Use Output Files	8
4	How to Use Output Files (C Source File Format).....	9
5	How to Use the Label Definition Header File	10
6	Using the -oua Option.....	11
7	Others	12
7.1	Converting ncg (character data) Files	12
7.2	Replacing Incorrect Scale Parameters.....	12

Revision History

Version	Revision Date	Description
1.0.4	05/29/2006	<ul style="list-style-type: none"> Fixed a problem with border radius calculation. Added the <code>-afs</code> option.
1.0.2	09/01/2005	<ul style="list-style-type: none"> Added <code>-cr</code> option Corrected a problem concerning an excessive output of VRAM transfer information. Added <code>-rtp</code> option. Added <code>-oua</code> option.
1.0.1	06/06/2005	<ul style="list-style-type: none"> Added warning about 1D mapping character data with invalid size. Added <code>-ncn</code> option (uses nce file titles as output NCGR and NCBP file names).
1.0.0	01/31/2005	<ul style="list-style-type: none"> Fixed the bug that cause file conversion to fail when the related file path information used absolute path names. Applied the extended comment information to the label definition header file. Fixed the bug that caused the cell animation playback mode information to be set incorrectly when converting multicell data. Deleted the source file format output feature.
0.9.1	12/06/2004	<ul style="list-style-type: none"> Added <code>-aXXX</code> options (specification of animation element types).
0.9.0	10/12/2004	<ul style="list-style-type: none"> Changed the specifications for output messages. Added the control option (<code>-v</code>). Added the <code>-pcm</code> option (to output palette compression format data). Added the <code>-br</code> option (to output cell rectangle area information data). Added a description of converter return values.
0.8.0	09/16/2004	<ul style="list-style-type: none"> Implemented the BG screen data conversion feature.
0.7.0	09/02/2004	<ul style="list-style-type: none"> Corrected typos. Added command line examples. Describe the feature that replaces incorrect scale parameters.
0.6.0	08/10/2004	<ul style="list-style-type: none"> Added the <code>-bg</code> option. Added the <code>-lbl</code> option. Added the sections on using label definition header files and converting character files.
0.5.0	08/2/2004	<ul style="list-style-type: none"> Changed the names of the converter and manual. Support for the 8/2 version. Added an option.
0.4.0	07/20/2004	Support for the 8/20 version.
0.3.0	6/22/2004	Support for the 6/22 version.
0.2.0	6/10/2004	Support for the 6/10 version. Corrected errors.
0.1.0	5/10/2004	Initial version.

1 Introduction

This document describes how to use the `g2dcvtr.exe` (`g2dcvtr`) program. `g2dcvtr` is a Windows application that converts the intermediate binary format that is output by NITRO-CHARACTER to the runtime binary that is used by the NITRO-System G2D runtime library. (NITRO-CHARACTER is a 2D graphics editing software that is supplied with NITRO-System).

2 Use

`g2dcvtr.exe [filename] [-m] [-bmp] ...`

Returns 0 if the output is successful and returns a non-zero value if output fails.

<code>[filename]</code>	Required	<p>Specifies the path + filename + extension to be converted.</p> <p><code>g2dcvtr</code> outputs the specified files and the files related to the specified files in a chain. (e.g., when specified, <code>nce</code>, <code>ncg</code>, and <code>ncl</code> files are also output.) If the file extension is omitted, then output for path + filename + supported file extensions will be attempted (in this case, related files are not output).</p>
<code>[-bmp]</code>	Optional	<p>Converts to and outputs bitmap format when there is character file input (when using software sprite rendering, bitmap format character data (=texture data) is required).</p> <p>Caution: If using bitmap format data, it must be a size that can be referenced as texture data. (Use caution when using custom-size characters.)</p>
<code>[-vta]</code>	Optional	<p>Outputs the data into a VRAM transfer animation format. To use this data, the data must be output with the character compression mode set to OFF and in 1D mapping mode.</p>
<code>[-o/]</code>	Optional	<p>Specifies the data output directory. Describe the path without leaving a blank space after <code>-o/</code>.</p> <p>There will be no output if the specified directory does not exist.</p>
<code>[-pcm]</code>	Optional	<p>Extracts the used palette number parts from the palette data, and outputs them as data. If all 16 colors of a 16-color palette are set to black—RGB(0,0,0)—or if all 256 colors of a 256-color extended palette are set to black, the palette number is treated as unused. This option is meaningless in 256-color palette mode.</p> <p>In order to properly recover data output with this option, the data must be loaded using <code>NNS_G2dLoadPaletteEx()</code>.</p>

- | | | |
|--------|----------|--|
| [-bg] | Optional | Converts the character file (ncg) to character data for BG. If you convert the file as OBJ character data without using the -bg option, associated cell data is needed. (It is automatically specified when converting a *.ncg file that is referenced from a *.nsc file as an associated file.) |
| [-v] | Optional | Enables output of the detailed operation messages of the converter. If this option is not specified, error messages output only when an error occurs to the standard output. If this option is specified, detailed operation messages are output to the standard output. |
| [-lbl] | Optional | Outputs a header file that defines another name for the animation sequence numbers upon output. For details, see section 5 - How to Use the Label Definition Header File. |
| [-br] | Optional | Outputs cell information that includes rectangular area information. To use the data output specified by this option, you must use the October 12, 2004 version of the G2D Runtime Library. |

<code>[-aXXX]</code>	Optional	Specifies the animation element type for the output animation data. Thee options are <code>-ai</code> , <code>-aisrt</code> , and <code>-ait</code> . When set to <code>-ai</code> , it outputs as the animation with only the index value; when set to <code>-aisrt</code> , it outputs the animation with index value + SRT (scale, rotate, translate) value; and when set to <code>-ait</code> , it outputs the animation with index value + T value.
<code>[-ncn]</code>	Optional	Uses <code>nce</code> file titles as output NCGR (NCBR) file titles. Use this option when several 1D mapping format <code>nce</code> files are referencing a single <code>.ncg</code> file.
<code>-cr/ [XYWH]</code>	Optional	Defines the input rectangle used when converting <code>.ncg</code> files. X and Y define the placement of the upper left corner of the input rectangle of the character unit within the character data set. W and H specify the size of the character unit input rectangle. Specify each value so the total character size is not exceeded. Currently, values for X and W are invalid. (Regardless of the values specified, X=0 and W=total character data width are used.)
<code>[-rtp]</code>	Optional	Removes transparent pixels from the boundary region when calculating boundary region information.
<code>[-oua]</code>	Optional	Extracts and outputs the comment characters in the extended comment field as extended attribute information. (For a detailed description see chapter 6 - Using the <code>-oua</code> Option.)
<code>[-afs]</code>	Optional	Aligns the size of the output file to be a multiple of 4 bytes.

Deleted options

<code>[-src]</code>	Optional	Outputs the output data converted into C source file format.
<code>[-m]</code>	Optional	When there is animation input, forces the conversion of animation to multi-cell animation. (This feature is provisional until multi-cell animation support is available with NITRO-CHARACTER.)

Example:

```
>g2dcvtr.exe c:/data/test.nce -bmp
>g2dcvtr.exe c:/data/test.nce -o/d:/data
```

3 How to Use Output Files

Load each project with the NITRO-SDK file system using the output file. (See the file system documentation for details.)

The majority of test programs in the `$(NITROSYSTEM_ROOT)/build/tests/g2d/` folder use the file system to load resources. Use these test programs as examples.

4 How to Use Output Files (C Source File Format)

With the previous version of `g2dcvtr.exe`, there was a feature that output a C source file format, but this feature was eliminated. (With G2D, the standard resource load method is used for the NITRO-SDK file system and binary format. In the previous version of G2DConv, the feature for C source file format output provided a means to load resources with the old NITRO-SDK, which did not have a fully developed file system.

5 How to Use the Label Definition Header File

If you specify the `-lbl` option, the converter generates a header file that defines the label number alias based on the label character string information in the animation data. Because the label number and the animation sequence number correspond one-on-one, the alias can be used as an alias of the animation sequence number.

The naming convention follows:

File names

```
File title name_file extension_LBLDEFS.h
```

Aliases

```
File extension_File title name_Label name
```

The converter does not detect identical alias names. The user must deal with these identical alias names to prevent issues.

Output Example: Label definition file output for `data.NANR`

Output file: `data_NANR_LBLDEFS.h`

Contents:

```
//-----  
// This file was generated by g2dcvtr.exe converter.  
// Avoid editing this file.  
// data ==> Thursday, August 05, 2004.  
//-----  
#define    NANR_data_walk1    // Extended comment information is inserted as a  
comment statement.  
#define    NANR_data_walk2    // Comment not set  
#define    NANR_data_run     // Comment not set  
#define    NANR_data_stop    // Comment not set  
#define    NANR_data_sleep    // Comment not set  
#define    NANR_data_atack    // Comment not set
```

6 Using the `-oua` Option

`-oua` became available for use starting with g2dcvtr v2.8. This option is used to output extended user attributes.

If `-oua` is specified, the converter looks for the extended comment string and attempts to extract attribute data.

Attributes within the extended comment appear as `<XXX>`, where `XXX` is a character string that can be interpreted as a 32-bit unsigned hexadecimal integer.

The extraction algorithm process is shown below.

1. The software searches within the extended comment for a character string that starts with `@A`.
2. If the string `@A<` is found, the software searches for `<`.
3. Once the character `<` is found, the character string between `@A<` and `<` is read as a 32-bit unsigned hexadecimal number.

Be sure to note the following points.

- If the search fails to find `@A<` or `<` within the extended comment string, the attribute value will be set to zero.
- `.nce` files versions 1.04 and later by NITRO-CHARACTER versions 1.5 and later support `-oua`. If these conditions are not met, a warning is displayed and no attributes are output.

7 Others

7.1 Converting ncg (character data) Files

`g2dcvtr` is not allowed to perform binary conversions on unpaired `ncg` files used for OBJ character data. To convert `.ncg` files, each `.ncg` file must be paired with a `.nce` file (cell definition data).

This restriction is to prevent the creation of invalid data and reduce the burden of data management.

`.ncg` and `.nce` files are associated to each other, and `.nce` data is required to correctly convert `.ncg` data that uses 1D mapping mode.

Therefore, if the conversion of unpaired `.ncg` files were permitted, invalid `.ncg` files without corresponding `.nce` files may be generated.

When converting unpaired `ncg` files, use the `-bg` option to indicate that the `ncg` file is for BG character data.

`.ncg` files are always converted as files in the 2D mapping mode.

When converting a `.ncg` file that is referenced by a `.nsc` (screen data) file as an associated file, the conversion is performed because the `-bg` option is specified and there is no need to specify the `-bg` option.

7.2 Replacing Incorrect Scale Parameters

When `g2dcvtr` finds an incorrect scale parameter in SRT (Scale, Rotate, and Translate) animation that is stored in the NCE or NMC file, the value is replaced with the default scale value (scale = 1.0).

Also, when `g2dcvtr` finds the scale value that has an absolute value that is smaller than the smallest possible value $1/4096$ (≈ 0.00024) for the scale value format (fx32) to be expressed in the runtime library, it replaces with $1/4096$ (or with $-1/4096$).

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