

# NintendoWare for CTR for Banner

## NW4C\_ForBanner Overview

2011/06/17

Version 0.3

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and should be handled accordingly.**

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# 1 Introduction

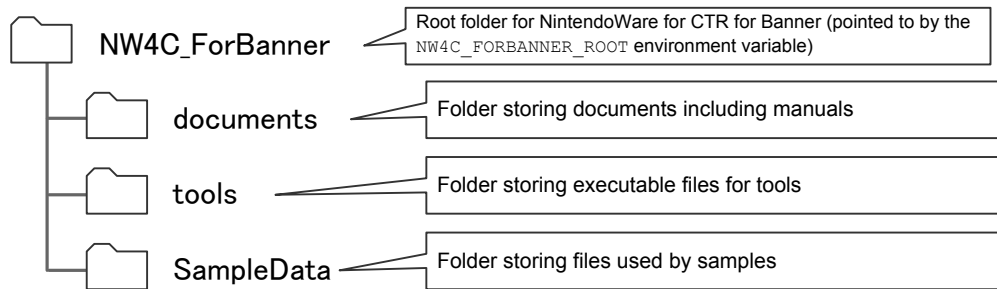
NintendoWare for CTR Banner is the collective name for the tools used to develop banner data for CTR game software. The designer is supplied with a set of tools such as an exporter, editor, and production viewer, to allow for efficient development of banner data, based on NW4C 1.3.2.

This document provides the directory structure, a summary of tools included, and an overview of the data and libraries necessary to create banners.

## 2 Folder Structure

The applications provided by NW4C\_ForBanner are all installed in the `NW4C_ForBanner` folder.

**Figure 2-1 Directory Structure**



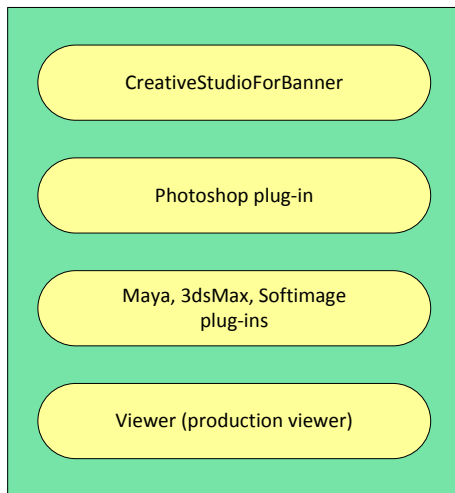
### 3 Tools Overview

NW4C\_ForBanner provides NintendoWare CreativeStudioForBanner (which integrates various graphics-related editors), an exporter for DCC tools, and a production viewer. This minimal toolset is required for the designer to create data, view, and confirm it on a production device.

**Figure 3-1 Tools Structure**

#### NW4C\_ForBanner

Environment in which the designer creates the banner data



#### CTR-SDK (HOME Menu Package)

Environment in which the programmer includes the banner data in the game

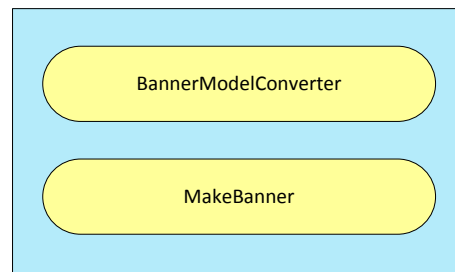
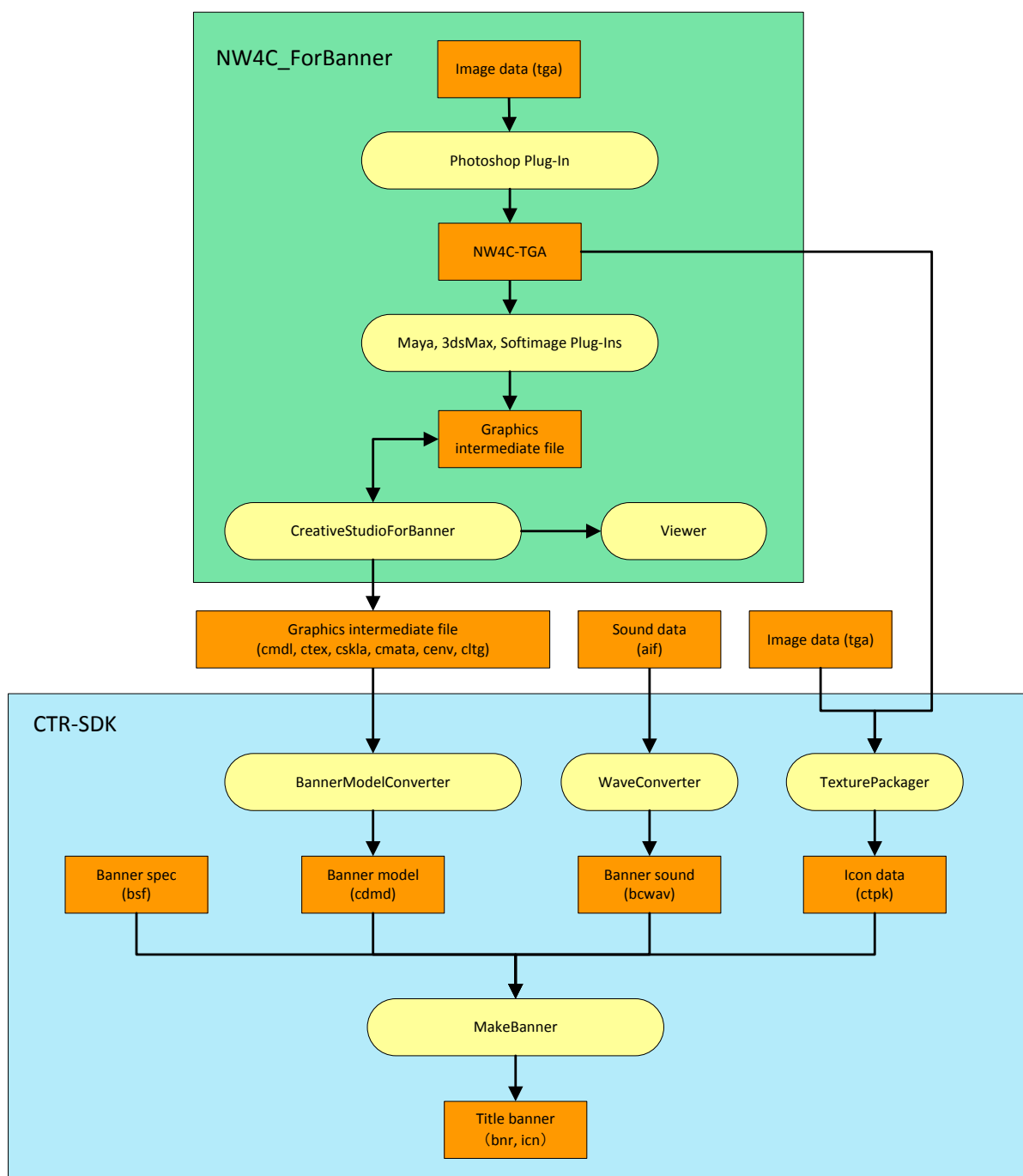


Figure 3-2 Data Flow



For details on the various types of data, see Chapter 4, *Data Required to Create Banners*.

### 3.1 NW4C 1.3.2 Base

NW4C\_ForBanner was created based on NintendoWare for CTR 1.3.2. The supplied features and known problems also follow those for NintendoWare for CTR 1.3.2.



## 3.2 Differences with the Actual Display on the HOME Menu

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Since the HOME Menu is implemented using NW4C 1.2.23, the results confirmed with NW4C\_ForBanner based on NW4C 1.3.2 may differ slightly.

Currently, we have not confirmed the differences that influence the display results, so please perform the final confirmation on the HOME Menu. See the *HOME Menu* document included with the separate CTR-SDK for instructions for confirming display on the HOME Menu.

## 4 Data Required to Create Banners

This section describes the data required to make CTR title banners.

### 4.1 Intermediate Graphics Files

This section describes intermediate graphics files output from CreativeStudio included in NW4C for Banner. Intermediate graphics files are made into banner models using the Banner Model Converter. For information on the Banner Model Converter, see `ctr_BannerModelConverter.html` in the CTR SDK.

#### 4.1.1 3D Models

3D models automatically rotate clockwise at a constant speed (once per 10 seconds) around a vertical axis on the screen. Rotation can be accelerated by blowing into the microphone. If you have a node that you do not want to rotate, set it as a billboard or make it rotate at the same speed in the opposite direction (counterclockwise). A nodes set as a billboard will not rotate even if you blow into the microphone, but a node set to rotate in reverse can be rotated by blowing into the microphone.

Model data created using NintendoWare for CTR (NW4C) is used for 3D models. 3D models and textures attached to them should be prepared by separating data into COMMON data unrelated to the language used and data that is related to the language. Language data must be prepared for each language being used in the software region. Note, however, that only COMMON data and data for the language selected under system settings will be displayed.

If you prepare different 3D models for the COMMON data model and by language models, both will be displayed. If a texture having the same name as the COMMON data exists in the by language data, the model prepared by language will be displayed. In other words, by language data is required in two cases: when a different model must be displayed for each language and when textures differing from the COMMON data model must be applied.

#### 4.1.2 Data Names

Data names based on the combination of software region and language are used. Except for texture data with serial number appended, the same file name must be used for files included in data with the proper extensions for data for the same region and language.

**Table 4-1 Correspondence Between Data Names and Region/Language**

Name	Region	Language
COMMON	(All regions)	(All languages)
JPN_JP	Japan	Japanese
USA_EN	North America and Europe	North American English
USA_FR	Americas	French (Canada)

Name	Region	Language
USA_SP	Americas	Spanish (Latin America)
USA_PO	Americas	Portuguese (Brazil)
EUR_EN	Europe	British English
EUR_FR	Europe	French
EUR_GE	Europe	German
EUR_SP	Europe	Spanish
EUR_IT	Europe	Italian
EUR_DU	Europe	Dutch
EUR_PO	Europe	Portuguese
EUR_RU	Europe	Russian

### 4.1.3 Intermediate Files

The following restrictions are placed on intermediate files included in model data. These restrictions apply to models to be displayed. They therefore apply to models that combine COMMON data and data for one language. Intermediate data having an extension not given in the table is unsupported and cannot be used. The default shader is used to display models.

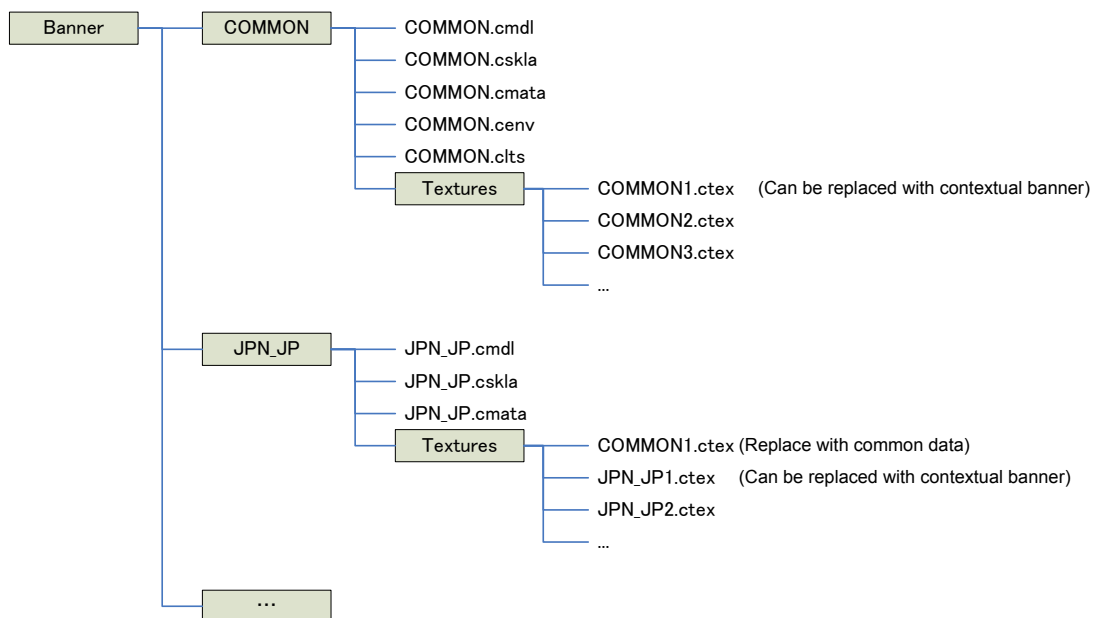
**Table 4-2 Specifications and Restrictions on Intermediate Files Included in Model Data**

Extension	Specifications and Restrictions
cmdl	Create a model consisting of up to 3000 polygons, 10 bones, and 5 materials. Any one of four different layer configs, numbered 0, 1, 2, or 3, can be selected. A stencil test cannot be executed.
ctex	There is no limit on the number of textures that can be used, only a limit on total capacity. Any texture having the same name as COMMON data included in language data is replaced with a texture applied to the COMMON data model.
cskla	Create a loop animation consisting of 600 frames or less. Rendering is carried out at 60 fps.
cmata	Create a loop animation consisting of 600 frames or less. Rendering is carried out at 60 fps.
cenv	Set up to three lights, three cameras, and one fog.
clts	Up to three lookup tables can be used.
cptl	Particles are not supported. This file type is not needed.
csdr	User shaders are not supported. This file type is not needed.
clgt	Light settings are made in the cenv file, but light animations are not supported. This file type is not needed.

Extension	Specifications and Restrictions
ccam	Camera settings are made in the cenv file, but camera animations are not supported. This file type is not needed.
cres	Merging of files is not supported. This file type is not needed.

A directory is created according to the region/language and intermediate files are placed in that directory. If there is language data where a texture needs to be replaced with a COMMON data texture, place the replacement texture in the Textures directory for the language in question under a name such as `COMMON1.ctex`. Use Banner Model Converter to convert model data.

**Figure 4-1 Directory Configuration of Intermediate Files and Model Data**



There is no limit on the number or format of textures used with the 3D model, but the total size of model data (COMMON data plus data for one language) before compression must be no more than 320 KB.

The total size of all data (COMMON data and data for all languages, and the banner itself, including banner sounds) before compression must be no more than 1 MB.

A template for displaying a panel polygon to which textures you create can be applied has been prepared for developers who lack experience creating 3D models.

**Note:** Although a CTR icon is required for child programs distributed using Nintendo 3DS download play, a CTR title banner is not required.

## 4.2 Banner Sounds

You can play back sounds (banner sounds) that last up to three seconds when your CTR title banner is displayed. Banner sounds are created by converting sound data into a bcwav file using WaveConverter. The volume of the banner sound should be set to about the same volume used by system applications.

For information on WaveConverter, see `ctr_WaveConverter.html` inside the CTR-SDK.

Note that the playback of a banner sound cannot be synchronized with the motion of the 3D model. Furthermore, an empty lead-in cannot be included at the start of the sound, because banner sound playback is slightly delayed to start after the banner appears.

**Note:** Banner sounds are played back with front bias. Sounds are, therefore, played back in stereo even if system settings have been set to surround.

The following table lists restrictions on audio data used for banner sounds.

**Table 4-3 Restrictions on Audio Data Used for Banner Sounds**

Item	Restriction
Sound duration	3 sec or less
Source file format	.wav or .aif
Number of channels	Stereo only
Compression method	One of DSP ADPCM, PCM16, or PCM8
Sampling rate	No restriction
Other	Loop setting unavailable

## 4.3 Icon Data

This icon is displayed in the lineup of icons appearing at the bottom of the screen on the HOME Menu. Use TexturePacker to convert one each of 48x48-pixel and 24x24-pixel data (TGA format) into ctpk files used for CTR icons, and then create icn files using makebanner. Usually, the 24x24-pixel image is a reduced size version of the 48x48-pixel image. Some touchup to compensate for lost detail is okay.

This icon cannot be animated as with Nintendo DSi-compatible software or replaced with an icon derived from CTR extended banner data.

## 4.4 Banner Specs

Basic game title information, such as the title name and game company name, is also displayed in various locations besides the HOME Menu, such as on friend cards, in System Settings, and on Game Notes system application. The data contained inside the banner spec file (BSF file) is used for this information. This section describes parameters set inside the banner spec file. For details, see

`ctr_makebanner.html` included in the CTR-SDK.

A one-line game title and two-line game title must be prepared for each language in the target region. Up to 64 characters can be set for the one-line version, and up to 128 characters for the two-line version; so they can be displayed within a span equivalent to the width of seventeen “%” characters of the internal font. In the case of the one-line version only, the title name will be cut off in the middle and “...” added to the end if the entire string spans more than the width of seventeen “%” characters of the internal font.

Just as with the title name, up to 64 characters can be set for the game company name so it can be displayed within a span equivalent to the width of seventeen “%” characters of the internal font and a game company name must be prepared for each language in the target region.

In the case of both the title name and game company name, only characters (including kanji) included in the internal font can be used. Because these strings will be displayed in a proportional font, you need to make sure that the one-line version is displayed properly in the “personal reminder pad” system application, and that the two-line version is displayed properly when selecting application icons on the HOME Menu.

In addition, the following information can also be included in title information, but it will not appear on the HOME Menu and similar locations.

**Table 4-4 Other Title Information**

Information	Description
ULCD flag	This specifies whether a game uses stereoscopic display.
EULA flag	This specifies whether users must consent to a user agreement when starting the application.
Auto save flag	<p>This specifies whether the application automatically saves data as part of shut-down processing.</p> <p>The dialog message that appears when exiting an application from the HOME Menu varies depending on the setting.</p> <p>If this flag is set to True, the application will just exit without displaying a message when it shuts down. However, if an attempt is made to start another application, the message “Quit this software? (Data will be saved.)” is displayed.</p> <p>If this flag is set to False, the message “Quit this software? (Data will not be saved)” will be displayed.</p> <p>If data is saved automatically when an application exits, but it is not necessarily the case that <i>all</i> data is saved, decide whether to set this flag to True or False based on whether the range of data that the user expects to be saved has been saved.</p>
Extended banner use flag	This specifies whether to use a CTR extended banner.
Save data use flag	<p>This specifies whether the application uses save data and/or extended save data.</p> <p>If this flag is enabled, a caution message is displayed when quitting the application from the HOME Menu.</p>
Animation frame	This represents the first frame in which the banner appears in a banner animation.

Information	Description
Region	This represents the region of the software. If the region of the software does not match that of the system, the application will not start. Furthermore, setting multiple regions is not supported.
Rating	This represents the software rating obtained from the rating organization for each region. The Parental Control feature restricts software from being started based on this information.

The region is set using one of the strings below. The regions and languages to be included differ depending on the string specified.

**Table 4-5 Region Specification String and Associated Regions and Languages**

Region String	Region	Language in Use
Japan	Japan	Japanese
America	Americas	North American English, French (Canada), Spanish (Latin America), Portuguese (Brazil)
Europe	Europe and Australia	British English, French, German, Spanish, Italian, Portuguese, Russian, Dutch

## 4.5 CTR Title Banner

The 3D model is displayed using 3D video as if it is located inside a showcase. The 3D model is displayed in the center of an elliptical globe-shaped space. (The elliptical shape rotates and appears as if a sphere has been squashed in the vertical direction.) Parts of the model that stick outside the boundaries of this space are not displayed. Take care that the model does not extend outside the edges of the screen when the 3D volume is at maximum. For details, see `ctr_makebanner.html` inside the CTR-SDK.

## 4.6 CTR Extended Banner Data

Some CTR title banners can be replaced with CTR extended data content for display.

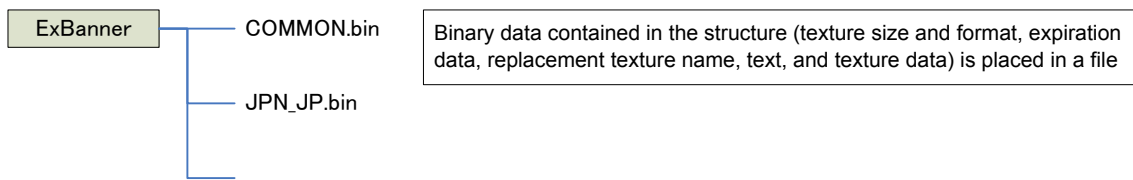
The things that can be replaced are scrolling text at the bottom of the upper screen and a texture (only one) having a name (COMMON or the target language, no serial number) selected for replacement. Icon data cannot be replaced. Data must be prepared for each language.

There are two types of CTR extended banner data: local extended banner data created by the application, and download extended banner data downloaded by means of SpotPass communication. Text, texture and size restrictions are the same for both types, but an expiration date can be placed on download extended banners.

Although local extended banner data and download extended banner data are both placed in files using the same data structure, the location where the files are stored differs. Local extended banners are placed in a directory named `ExBanner`, created in the root directory of extended save data in the form of a target language file. Download extended banners are downloaded by means of SpotPass communication.

There is a restriction that the size of a local extended banner must not exceed 128 KB per language, and the entire size of a download extended banner (not just per language) must not exceed 1 MB. For details, see `ctr_make_ex_banner.html` included in the CTR-SDK.

**Figure 4-2 Directory Configuration for CTR Extended Banner Data**



**Code 4-1 CTR Extended Banner Data Structure**

```

struct ExBanner {
    u16 tex_width; // Texture width
    u16 tex_height; // Texture height
    u8 tex_format; // Texture format (GL_XXXX)
    u8 pad[3];
    s32 limit_year; // Expiration data
    s32 limit_month;
    s32 limit_date;
    char texture_name[16]; // Name of replacement texture (COMMON1, JPN_JP, etc.)
    wchar_t text[256]; // Text
    void* tex_data; // Texture data
};

```

**Note:** The layout of this structure may change in the future.



## 5 Library Overview

NW4C\_ForBanner does not include libraries. This is because NW4C\_ForBanner is a package for designers to create banner data and does not require libraries.

### 5.1 Binary Converter

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The banner data creation command

(CTR\_SDK\tools\CommandLineTools\ctr\_BannerModelConverter32.exe) uses the binary converter (CbmdConverter.exe) included in the SDK for the binary conversion. The binary converter included in NW4C\_ForBanner is used only when displaying on the hardware viewer for confirmation.

## Revision History

Version	Revision Date	Category	Description
0.3	2011/06/17	Changed	<ul style="list-style-type: none"><li>• Changed the name of the binary converter.</li></ul>
0.2	2011/06/17	Added	<ul style="list-style-type: none"><li>• Added "4 Data Required to Create Banners."</li></ul>
		Changed	<ul style="list-style-type: none"><li>• 1 Introduction Changed some of the body text.</li><li>• 3 Tools Overview Added references for each type of data.</li></ul>
0.1	2011/01/31	—	Initial version.

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