

[SCE CONFIDENTIAL DOCUMENT]

PLAYSTATION(R)3 Programmer Tool Runtime Library 102.002

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The following are known bugs, limitations and cautions on the Reference Tool SDK package.

New updates have the release version of this package.

Reference Tool

- A problem has been found that when a program that outputs voice from RSX(TM) is activated, and then one of the following is performed, voice is not output.
 - Plug-in/out the HDMI cable
 - Switch the TV monitor power from Off to On (including the AV Amp)
 - Switch between the TV monitor channels and set the HDMI input again (including the AV Amp)

- The following devices are not supported now.

- CompactFlash(R)
- SD Memory Card
- FOOT SW

The wireless feature (Bluetooth(R)/Wireless LAN) can only be used on Reference Tools DEH-R1040 and later, which have the necessary authorization tools.

The antenna for the wireless feature is bundled with DEH-1040 and later Reference Tools. Do not attempt to connect DEH-R1030 and earlier Reference Tools.

- For specifications regarding the Reference Tool, please refer to info/PS3-FAQ_*.pdf.
- Currently, the status does not change even if the DRIVE SELECT switch of the front panel is pressed.

However, by resetting (or rebooting) the Reference Tool after switching between "BD emulator (HDD)" and "BD drive" in "Blu-ray Disc access" of "Boot parameters" on the Administration Tool, it is possible to switch the LED to be illuminated on the front panel ("HDD drive LED" or "Blu-ray Disc drive LED").

CBE Specifications

- Currently, the CBE that is equipped with each tool version can use six SPUs.

System Utilities

<Web Browser Utility>

- Files cannot be downloaded with the downloader.

(Added in Release 102.002)

- When terminating the game application from the Quit Game menu that is displayed by holding the PS button down(5sec) while the Basic Authentication dialog is being displayed, the utility cannot return to the system software.

<Video Setting Utility>

- In the description of the structure CellVideoOutColorInfo within the reference manual, it is described that "the low-order 6 bits are always 0". However, it should be described that "the high-order 6 bits are always 0".

BD Emulator (HDD)

- When using the BD emulator on Windows, dtcfsutil.exe does not operate on the msys. Please use dtcfsutil.exe on the command prompt. There is no problem when using the BD emulator on Linux.

File System

<CFS>

- The error code returned by the following interfaces is CELL_FS_EACCES, not CELL_FS_EPERM.
cellFsRename(), cellFsUnlink(), cellFsMkdir(), cellFsRmdir()

Cell OS Lv-2

- If you try to create upper limit or more memory containers with sys_memory_container_create(), an ID that is the same as that of the memory container that has already been allocated is returned for a new memory container. When this occurs, the older memory container may not be destroyed with sys_memory_container_destroy() and may not be retrieved by the system even at the time of game process termination.

[Workaround]

Please make sure that the number of memory containers to be created with a game process at the same time is less than 10.

CODEC

<libvdec>

- It is assumed that the outputs of the samples are output to a PC monitor with a resolution of SXGA or more or to an HDMI monitor that supports 1280x720/60p input. Therefore, if the monitor setting is not performed appropriately in advance with the setmonitor utility, the samples will display an error message and will be aborted.

<libdmux>

- It is assumed that the outputs of the samples are output to a PC monitor with a resolution of SXGA or more or to an HDMI monitor that supports 1280x720/60p input. Therefore, if the monitor setting is not performed appropriately in advance with the setmonitor utility, the samples will display an error message and will be aborted.

(Added in Release 102.002)

- When calling cellDmuxDisableEs(), please make sure that the video/audio decoder is not decoding the applicable ES (Elementary Stream) before calling.
Specifically, it is recommended to call cellDmuxDisableEs() after CELL_VDEC_MSG_TYPE_AUDONE/CELL_ADEC_MSG_TYPE_AUDONE for the AU input to the video/audio decoder is received or after cellVdecClose()/cellAdecClose() is called.

<libvpost>

- It is assumed that the outputs of the samples are output to a PC monitor with a resolution of SXGA or more or to an HDMI monitor that supports 1280x720/60p input. Therefore, if the monitor setting is not performed appropriately in advance with the setmonitor utility, the samples will display an error message and will be aborted.

<libjpgdec>

- It is assumed that the outputs of the samples are output to a PC monitor with a resolution of SXGA or more or to an HDMI monitor that supports 1280x720/60p input. Therefore, if the monitor setting is not performed appropriately in advance with the setmonitor utility, the samples will display an error message and will be aborted.

<libpngdec>

- It is assumed that the outputs of the samples are output to a PC monitor with a resolution of SXGA or more or to an HDMI monitor that supports 1280x720/60p input. Therefore, if the monitor setting is not performed appropriately in advance with the setmonitor utility, the samples will display an error message and will be aborted.

- Even if the information of sCAL chunk exists in the stream, the bit supported by dataOutInfo->chunkInformation is not validated.

(Added in Release 102.002)

<libadec>

- SPURS stops with an exceptional event when using ATRAC3plus decoder.

Details:

SPURS may stop with an exceptional event when ATRAC3plus decoder is in use. This problem may occur when either one of the following conditions is met:

- libsail is used to play ATRAC3plus data that is created by Stream Composer.
- libadec is used to decode the same data as above directly.

Note that this problem does not occur when you use libatrac3plus to play data created by at3tool.

Workaround

Do not include ATRAC3plus data in PAMF file.

libfont

- With the following functions, hangul characters cannot be rendered to the correct base line position.
When using hangul characters, please do not use them.

Functions for getting outline glyph
 cellFontGenerateCharGlyph()
 cellFontGenerateCharGlyphVertical()

Functions for rendering from outline glyph
 cellFontGlyphRenderImage()
 cellFontGlyphRenderImageHorizontal()
 cellFontGlyphRenderImageVertical()

Functions for vertical rendering
 cellFontRenderCharGlyphImageVertical()

- The initial size of the rendering work buffer is allocated as the buffer initial size that is specified with the argument CellFontRendererConfig of cellFontCreateRenderer(), but when a rendering function is called, it is changed to the buffer size that becomes necessary at that time. Therefore, it is meaningless to specify the initial size.
(With CellFontRendererConfig_setAllocateBuffer(&config, initSize, maxSize), it is not possible to control the memory allocation operation even when initSize == maxSize.)

Standard C/C++ Library

- If the following compile options are specified when compiling a program on the PPU side, many warnings may be output.
 -Wall -Wundef -Wundef -Wsystem-headers -Wcast-qual
- When compiling an SPU program that included math.h, an error occurs if -fsingle-precision-constant is specified as the compile option.
- When including the system header, include it outside extern "C" or extern "C++".

For example, an error may occur if a program such as below is compiled:

```
extern "C" {
  ...
  #include <yyyy> // NG : Including within extern "C".
} ...
```

The error can be avoided by rewriting the program as shown below:

```
#include <yyyy>
extern "C" {
  ...
}
```

<PPU>

- There are following limitations on the usage of atexit function.
 - * If a function in a PRX module is registered using atexit function, and if main function finishes or exit function is invoked after the PRX module is stopped, a DSI (data storage interrupt) will occur.
 - * If atexit function is used in a C++ global constructor, the behavior

is different from the C++ standard. All the registered functions are invoked prior to all the global destructors.

<PPU>

- If you use class `ios_base` or any of its derived classes (`fstream`, `iostream`, `stringstream`, `strstream`, etc.) in PRX, create their instances in ELF, and pass the pointers to them to PRX. If they are created in PRX, a DSI (data storage interrupt) may occur in function `_Fac_tidy()` at the termination of the PPU program.

<SPU>

- If rounding mode is set by function `fesetround` in `fenv.h`, there is a bug that the setting is effective in only the operations on slice 1 of vector double type. Round to nearest even mode (default) is used for the operations on double type and on slice 0 of vector double type.

The problem can be worked around by using the following code instead of `fesetround`. Replace `FE_TOWARDZERO` with the mode to be set.

```
vector unsigned int r=spu_mffpscr();
r=spu_sel(r,spu_splats(((unsigned int)FE_TOWARDZERO*5)<<8),
          ((vector unsigned int){0x0000FF00,0,0,0}));
spu_mtfpscr(r);
```

See also technical notes "Rounding control of SPU double-precision floating-point operations".

<PPU/SPU>

- If programs that include header `stdlib.h` are compiled with any of the following options, errors will be reported at link-time (PPU side) or compile-time (SPU side, C++).
 - D_NO_INLINE_DEFINITIONS
 - std=c89
 - std=gnu89
 - std=c++98

<SPU>

- If very large amount of stack or heap area is used, heap area may be destroyed. SPU ABI allows accessing memory at negative offsets from stack pointer up to -2000 as well as positive offsets, but using negative offsets is not guaranteed in some cases due to a bug. Negative offsets from stack pointer are used in `spu_printf()`, leaf functions, etc.

USB

<USB Driver>

- When performing isochronous IN transfer with a Full-Speed device, data whose size per frame exceeds 512 bytes cannot be transferred correctly.
This problem will be fixed in a future release.
- Multi isochronous transfer of a High-Speed device is not supported.
This problem will be fixed in a future release.
- From SDK090, the `usb/usbphone` sample is attached to LDD within the system. Therefore, it does not operate.
- If an inserted USB device is extracted once and inserted again, it may not be recognized.
- When connecting or disconnecting a device to a USB port of the machine body, other USB devices already connected may be disconnected or may have an impact on its data communication.
To avoid these problems, connect a self power hub to one of the USB ports of the machine body.

libsail

- The call of the following functions is not terminated normally during playback:
 - `cellSailPlayerOpenEsAudio()`
 - `cellSailPlayerOpenEsVideo()`
 - `cellSailPlayerCloseEsAudio()`
 - `cellSailPlayerCloseEsVideo()`

(Added in Release 102.002)

- When `cellSailPlayerStop()` is called immediately after a `CELL_SAIL_EVENT_SOURCE_EOS` event occurred during playback, the notification of STOP is not received depending on the timing.

and the player operation will no longer be available.

(Added in Release 102.002)

- The value of pitch of the structure `CellSaiVideoFormat` that is obtained when `cellSaiGraphicsAdapterGetFormat()` is called is doubled.

NP Score Ranking Utility

- The score that is registered to the ranking board that is used in the sample is cleared irregularly.
- Just after aborting a transaction with `sceNpScoreAbortTransaction()`, it is not possible to destroy an NP score ranking transaction context by using `sceNpScoreDestroyTransactionCtx()`. Please note that it is always required to check that the transaction has ended.

(Added in Release 102.002)

- When `sceNpScoreRecordScore()` is called on a specific hardware, it always fails returning `SCE_NP_COMMUNITY_SERVER_ERROR_BAD_REQUEST (0x8002a401)`. No action is required at the game title side to resolve this problem.

For details, see the Technical Note.

<https://ps3.scedev.net/technotes/view/357/>

(Added in Release 102.002)

- In the reference manual, there are mistakes in the descriptions of how to calculate the temporary rank of a score and the highest rank achieved when the scores are the same. In the reference manual, it is written that "For same scores, the first one registered to the server will rank higher". However, for both the temporary rank of a score and the highest rank achieved, it should be written that "For same scores, scores will be ranked equally".

libgcm

- `cellGcmSetSecondVFrequency()` does not work properly even though it is set with `CELL_GCM_DISPLAY_FREQUENCY_SCANOUT`. For details, see the Technical Note 200609-24. <https://ps3.scedev.net/technotes/view/321>

libgcm/PSGL

- Flip completion notice is returned before completion. For details, see the Technical Note 200609-23. <https://ps3.scedev.net/technotes/view/320/>

libdbgfont

- With the function `cellDbgFontInitGcm()` included in `libdbgfont_gcm.a`, if an invalid value is included in the member `localBufAddr` or `mainBufAddr` of the structure `CellDbgFontConfigGcm` to be set as the argument, -1 is returned or a hang-up occurs within the function. An invalid value is an address within the range that cannot be accessed by `libgcm`.

When it is set so as not to use the main memory, the setting of the member `mainBufAddr` will be ignored.

(When neither `CELL_DBGFONT_VERTEX_MAIN` nor `CELL_DBGFONT_TEXTURE_MAIN` is specified for the member option.)

SPU ELF Binary Translator (replace_hbr.pl)

- On a SPU program described by assembler, data located in `.text` section may be replaced by the binary translator. Thus data should be located at area except `.text` section when using the binary translator.