libdeflt Overview

PlayStation®Vita Programmer Tool Runtime Library Release 3.50

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1 Library Overview

Characteristics

libdeflt is a library for expanding data in ZLIB format, DEFLATE format, and GZIP format, which are defined in RFC 1950, RFC 1951, and RFC 1952, and PK0304 ZIP format. Compressing and storing data and then expanding it at the time of use enables the efficient use of memory, a reduction in data loading times, etc.

Files

The files which are required in order to use libdeflt are as follows.

Filename	Description
libdeflt.h	Header file
libSceDeflt.a	Static link library file
libSceDeflt_stub.a	Stub library file
libSceDeflt_stub_weak.a	weak import stub library file
libdeflt.suprx	PRX module file

Sample Program

samples/sample_code/system/api_libdeflt/

This is sample code which expands a file that has been compressed in GZIP format.

2 Usage Procedure

Basic Usage Procedure

(1) GZIP Data Expansion

Expanding a so-called .gz file with a header is performed in a manner such as that shown below.

```
#include <libdeflt.h>

char dstbuf[BUFSIZE];
unsigned int uiCrc32;
int res;

res = sceGzipDecompress(dstbuf, sizeof(dstbuf), gzipdata, &uiCrc32);
```

When using libdeflt, initialization is not necessary. Expansion is performed by simply using the `sceGzipDecompress()` function as shown above. However, the .gz file must first be loaded into the `gzipdata[]` array in the above code using a file IO function or the like. (The same also applies below.) The `sceGzipDecompress()` function returns a negative value if there was an error, or the size of the expanded data if it completed normally.

(2) DEFLATE Data Expansion

In HTTP/1.1, data is sometimes compressed using the DEFLATE format. In that case, the DEFLATE-format compressed data alone is provided as-is, without an added GZIP header or ZLIB header. In such cases the data can be expanded using the `sceDeflateDecompress()` function.

```
#include <libdeflt.h>

char dstbuf[BUFSIZE];
int res;
res = sceDeflateDecompress(dstbuf, sizeof(dstbuf), infdata, NULL);
```

The `sceDeflateDecompress()` function returns a negative value if there was an error, or the size of the expanded data if it completed normally.

(3) ZLIB Data Expansion

To expand data stored in the ZLIB format (with a ZLIB header), such as PNG raster data, use the `sceZlibDecompress()` function.

```
#include <libdeflt.h>

char dstbuf[BUFSIZE];
unsigned int uiAdler32;
int res;
res = sceZlibDecompress(dstbuf, sizeof(dstbuf), infdata, &uiAdler32);
```

The `sceZlibDecompress()` function returns a negative value if there was an error, or the size of the expanded data if it completed normally.

Precautions

When libdeflt performs expansion, all of the data is expanded unconditionally. There is no functionality to perform, for instance, partial expansion. Consequently, an output buffer which is at least the size of the expanded data must be prepared beforehand.

If this consideration presents a problem, employ a method wherein, for example, data is broken into smaller segments when it is compressed.

Moreover, to perform expansion while performing partial input of data in a format other than DEFLATE, the `sceDeflateDecompressPartial()` function must be called after getting the start position of the data using a function to detect the data body for the data format that is used (for example, in the case of the GZIP format, the `sceGzipGetCompressedData()` function). Note that the data body detection function itself does not support partial input of data.