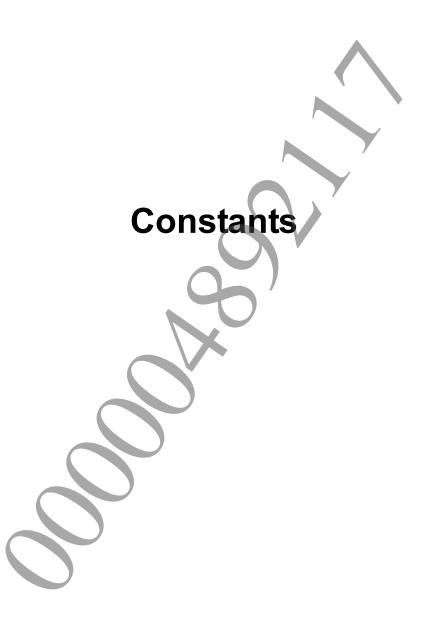


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SCE SFMT44497 ARRAY SIZE

Array size for SFMT44497 pseudo random number calculation

Definition

#include <libsfmt44497.h> #define SCE SFMT44497 ARRAY SIZE /* (44497 / 128) + 1 */ 348

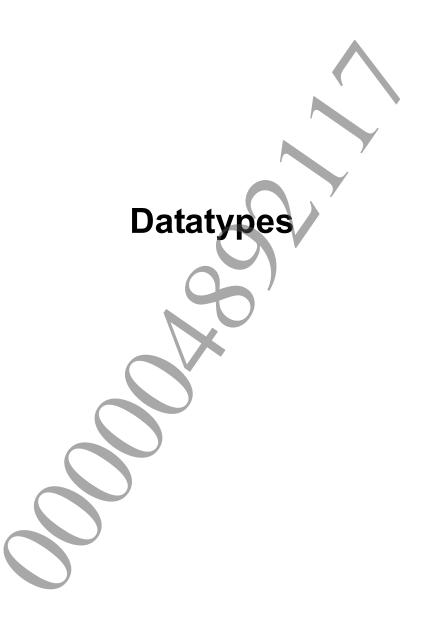
Description

This constant defines the array size for pseudo random numbers in conformance with SFMT44497. In addition to indicating the array size that is maintained as state in the SceSfmt44497Context structure, this constant is also used by the sceSfmt44497FillArray32() and sceSfmt44497FillArray64() functions to indicate the minimum size for generating random numbers.

See Also

SceSfmt44497Context, sceSfmt44497FillArray32(), sceSfmt44497FillArray64()





SceSfmt44497Context

Context information for SFMT44497 pseudo random number calculation

Definition

```
#include <libsfmt44497.h>
typedef struct SceSfmt44497Context {
          unsigned int idx;
          unsigned int sfmt[SCE_SFMT44497_ARRAY_SIZE][4];
} SceSfmt44497Context;
```

Description

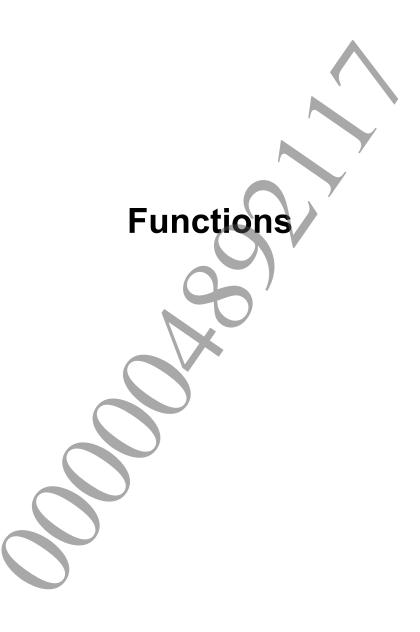
This structure is a work area for calculating pseudo random numbers in conformance with SFMT44497

One instance of this work area must be prepared for each random number sequence.

See Also

SCE SFMT44497 ARRAY SIZE, sceSfmt44497InitGenRand(), sceSfmt44497InitByArray()





sceSfmt44497InitGenRand

Initialize SFMT44497 pseudo random number work area

Definition

Calling Conditions

Multithread safe

Arguments

Pointer to an SceSfmt44497Context structure, which represents a random number sequence as a context.Specifies a random number sequence.

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Return Values

If an error occurs, a negative value is returned.

Value	
SCE OK	Normal completion

Description

This function uses a 32-bit seed to initialize an SFMT44497 random number sequence, which is represented by the SceSfmt44497Context structure. This function must be executed before the sceSfmt44497GenRand32(), sceSfmt44497GenRand64(), sceSfmt44497FillArray32(), and sceSfmt44497FillArray64() functions.

Since only the SceSfmt44497Context structure indicated by pCtx is initialized, multiple random number sequences can be handled simultaneously by having multiple SceSfmt44497Context structures.

See Also

SceSfmt44497Context, sceSfmt44497InitByArray()

sceSfmt44497InitByArray

Initialize SFMT44497 pseudo random number work area

Definition

Calling Conditions

Multithread safe

Arguments

Return Values

If an error occurs, a negative value is returned.

Value	
SCE_OK	Normal completion

Description

This function uses an array of 32-bit seeds to initialize an SFMT44497 random number sequence, which is represented by the SceSfmt44497Context structure. This function must be executed before the sceSfmt44497GenRand32(), sceSfmt44497GenRand64(), sceSfmt44497FillArray32(), and sceSfmt44497FillArray64() functions.

Since only the SceSfmt44497Context structure indicated by pCtx is initialized, multiple random number sequences can be handled simultaneously by having multiple SceSfmt44497Context structures.

See Also

SceSfmt44497Context, sceSfmt44497InitGenRand()

Document serial number: 000004892117

sceSfmt44497GenRand32

Generate an SFMT44497 32-bit pseudo random number

Definition

Calling Conditions

Multithread safe

Arguments

PCtx Pointer to an SceSfmt44497Context structure, which represents a random number sequence as a context.

Return Values

32-bit pseudo random number

Description

This function generates a 32-bit pseudo random number that conforms to SFMT44497.

Before using this function, the SceSfmt44497Context structure must be initialized by calling the sceSfmt44497InitGenRand() or sceSfmt44497InitByArray() functions.

See Also

SceSfmt44497Context, sceSfmt44497InitGenRand(), sceSfmt44497InitByArray()

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sceSfmt44497GenRand64

Generate an SFMT44497 64-bit pseudo random number

Definition

Calling Conditions

Multithread safe

Arguments

PCtx Pointer to an SceSfmt44497Context structure, which represents a random number sequence as a context.

Return Values

64-bit pseudo random number

Description

This function generates a 64-bit pseudo random number that conforms to SFMT44497.

Before using this function, the SceSfmt44497Context structure must be initialized by calling the sceSfmt44497InitGenRand() or sceSfmt44497InitByArray() functions.

Note that if the sceSfmt44497GenRand32() and sceSfmt44497GenRand64() functions are used together and the sceSfmt44497GenRand64() function is called after the sceSfmt44497GenRand32() function has been called an odd number of times, a full 64-bit random number will not be obtained. Instead, this function will return a 64-bit value in which the upper 32 bits are zero.

See Also

SceSfmt44497Context, sceSfmt44497InitGenRand(), sceSfmt44497InitByArray()

sceSfmt44497FillArray32

Generate an array of SFMT44497 32-bit pseudo random numbers

Definition

Calling Conditions

Multithread safe

Arguments

```
    Pointer to an SceSfmt44497Context structure, which represents a random number sequence as a context.
    Buffer for receiving the generated random numbers
    Size Number of elements in array (multiple of 4 that is larger than SCE_SFMT44497_ARRAY_SIZE*4)
```

Return Values

If an error occurs, a negative value is returned.

Value	
SCE_OK	Normal completion

Description

This function generates an arbitrary number of 32-bit pseudo random numbers that conform to SFMT44497. size specifies the number of elements in array and must be a multiple of 4 that is larger than (SCE SFMT44497 ARRAY SIZE * 4).

Before using this function, the SceSfmt44497Context structure must be initialized by calling the sceSfmt44497InitGenRand() or sceSfmt44497InitByArray() functions.

When the sceSfmt44497Fillarray32() function is used together with the sceSfmt44497GenRand32() function, the sceSfmt44497Fillarray32() function can be called only after the sceSfmt44497GenRand32() function has been called (SCE SFMT44497 ARRAY SIZE * 4) times.

When the sceSfmt44497FillArray32() function is used together with the sceSfmt44497GenRand64() function, the sceSfmt44497FillArray32() function can be called only after the sceSfmt44497GenRand64() function has been called (SCE_SFMT44497_ARRAY_SIZE * 2) times.

See Also

SceSfmt44497Context, sceSfmt44497InitGenRand(), sceSfmt44497InitByArray()

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sceSfmt44497FillArray64

Generate an array of SFMT44497 64-bit pseudo random numbers

Definition

Calling Conditions

Multithread safe

Arguments

```
Pointer to an SceSfmt44497Context structure, which represents a random number sequence as a context.
Buffer for receiving the generated random numbers
Size
Number of elements in array (multiple of 2 that is larger than
SCE_SFMT44497_ARRAY_SIZE*2)
```

Return Values

If an error occurs, a negative value is returned.

Value	
SCE_OK	Normal completion

Description

This function generates an arbitrary number of 64-bit pseudo random numbers that conform to SFMT44497. size specifies the number of elements in array and must be a multiple of 2 that is larger than (SCE SFMT44497 ARRAY SIZE * 2).

Before using this function, the SceSfmt44497Context structure must be initialized by calling the sceSfmt44497InitGenRand() or sceSfmt44497InitByArray() functions.

When the sceSfmt44497Fillarray64() function is used together with the sceSfmt44497GenRand32() function, the sceSfmt44497Fillarray64() function can be called only after the sceSfmt44497GenRand32() function has been called (SCE SFMT44497 ARRAY SIZE * 4) times.

When the sceSfmt44497FillArray64() function is used together with the sceSfmt44497GenRand64() function, the sceSfmt44497FillArray64() function can be called only after the sceSfmt44497GenRand64() function has been called (SCE_SFMT44497_ARRAY_SIZE * 2) times.

See Also

SceSfmt44497Context, sceSfmt44497InitGenRand(), sceSfmt44497InitByArray()

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