

# **libmt19937 Reference**

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# Datatypes

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# SceMt19937Context

---

Context information for MT19937 pseudo random number computation

## Definition

---

```
#include <libmt19937.h>
typedef struct SceMt19937Context {
    SceUInt32 count;
    SceUInt32 state[624];
} SceMt19937Context;
```

## Description

---

This structure is used as a work area for computing pseudo random numbers using the MT19937 algorithm.

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

## See Also

---

```
sceMt19937Init(), sceMt19937UInt()
```

# Random Number Functions

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# sceMt19937Init

Initialize MT19937 pseudo random number work area

## Definition

```
#include <libmt19937.h>
SceInt32 sceMt19937Init (
    SceMt19937Context *pContext,
    SceUInt32 seed
);
```

## Calling Conditions

Multithread safe.

## Arguments

*pContext* Pointer to an `SceMt19937Context` structure, which represents a random number sequence as a context.

*seed* Seed for a random number sequence.

## Return Values

If an error occurs, a negative value is returned.

Value	Result
<code>SCE_OK</code>	Normal completion

## Description

This function initializes an MT19937 random number sequence, which is represented by the `SceMt19937Context` structure. This function must be executed before calling the `sceMt19937UInt()` function.

Since this function initializes only the `SceMt19937Context` structure that is pointed to by *pContext*, multiple pseudo random number sequences can be handled simultaneously by maintaining multiple `SceMt19937Context` structures.

## See Also

`SceMt19937Context`, `sceMt19937UInt()`

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## sceMt19937UInt

---

Generate pseudo random number using the MT19937 algorithm

### Definition

---

```
#include <libmt19937.h>
SceUInt32 sceMt19937UInt (
    SceMt19937Context *pContext
);
```

### Calling Conditions

---

Multithread safe.

### Arguments

---

*pContext* Pointer to an `SceMt19937Context` structure, which represents a random number sequence as a context.

### Return Values

---

A 32-bit pseudo random number is returned.

### Description

---

This function obtains a pseudo random number generated by the MT19937 algorithm. You must call the `sceMt19937Init()` function to initialize the `SceMt19937Context` structure before calling this function.

### See Also

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`SceMt19937Context`, `sceMt19937Init()`