

NAME

`malloc_get_state`, `malloc_set_state` - record and restore state of malloc implementation

SYNOPSIS

```
#include <malloc.h>

void* malloc_get_state(void);

int malloc_set_state(void *state);
```

DESCRIPTION

The `malloc_get_state()` function records the current state of all `malloc(3)` internal bookkeeping variables (but not the actual contents of the heap or the state of `malloc_hook(3)` functions pointers). The state is recorded in a system-dependent opaque data structure dynamically allocated via `malloc(3)`, and a pointer to that data structure is returned as the function result. (It is the caller's responsibility to `free(3)` this memory.)

The `malloc_set_state()` function restores the state of all `malloc(3)` internal bookkeeping variables to the values recorded in the opaque data structure pointed to by `state`.

RETURN VALUE

On success, `malloc_get_state()` returns a pointer to a newly allocated opaque data structure. On error (for example, memory could not be allocated for the data structure), `malloc_get_state()` returns NULL.

On success, `malloc_set_state()` returns 0. If the implementation detects that `state` does not point to a correctly formed data structure, `malloc_set_state()` returns -1. If the implementation detects that the version of the data structure referred to by `state` is a more recent version than this implementation knows about, `malloc_set_state()` returns -2.

CONFORMING TO

These functions are GNU extensions.

NOTES

These functions are useful when using this `malloc(3)` implementation as part of a shared library, and the heap contents are saved/restored via some other method. This technique is used by GNU Emacs to implement its dumping function.

Hook function pointers are never saved or restored by these functions, with two exceptions: if malloc checking (see `mallopt(3)`) was in use when `malloc_get_state()` was called, then `malloc_set_state()` resets malloc checking hooks if possible; if malloc checking was not in use in the recorded state, but the caller has requested malloc checking, then the hooks are reset to 0.

SEE ALSO

`malloc(3)`, `mallopt(3)`

COLOPHON

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