NAME

vm_map_protect - apply protection bits to a virtual memory region

SYNOPSIS

#include <sys/param.h>
#include <vm/vm.h>
#include <vm/vm_map.h>

int
vm_map_protect(*vm_map_t map, vm_offset_t start, vm_offset_t end, vm_prot_t new_prot, vm_prot_t new_maxprot, int flags*);

DESCRIPTION

The **vm_map_protect**() function sets the protection bits and maximum protection bits of the address region bounded by *start* and *end* within the map *map*.

If the *flags* argument has the VM_MAP_PROTECT_SET_PROT bit set, then the effective protection is set to *new_prot*.

If the *flags* argument has the VM_MAP_PROTECT_SET_MAXPROT bit set, then the maximum protection is set to *new_maxprot*. Protection bits not included into *new_maxprot* will be cleared from existing entries.

The values specified by *new_prot* and *new_maxprot* are not allowed to include any protection bits that are not set in existing *max_protection* on every entry within the range. The operation will fail if this condition is violated. For instance, this prevents upgrading a shared mapping of a read-only file from read-only to read-write.

The specified range must not contain sub-maps.

IMPLEMENTATION NOTES

The function acquires a lock on the *map* for the duration, by calling vm_map_lock(9). Also, any in-progress wiring operation on the map affecting the specified range will cause **vm_map_protect** to sleep, waiting for completion.

RETURN VALUES

KERN_SUCCESS	The specified protection bits were set successfully.
KERN_INVALID_ARGUMENT	A sub-map entry was encountered in the range,

KERN_PROTECTION_FAILURE	The value of *new_prot* or *new_maxprot* exceed *max_protection* for an entry within the range.
KERN_PROTECTION_FAILURE	The map does not allow simultaneous setting of write and execute permissions, but *new_prot* has both VM_PROT_WRITE and VM_PROT_EXECUTE set.
KERN_RESOURCE_SHORTAGE	A copy-on-write mapping is transitioned from read-only to read-write, and not enough swap space is available to back the copied pages.
KERN_OUT_OF_BOUNDS	Both new protection and new maximum protection updates were requested, but the specified *new_prot* is not a subset of *new_maxprot*.

SEE ALSO

vm_map(9)

AUTHORS

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