NAME

casueword, casueword32, casuword, casuword32 - fetch, compare and store data from user-space

SYNOPSIS

#include <sys/types.h>
#include <sys/systm.h>

int

casueword(*volatile u_long *base*, *u_long oldval*, *u_long *oldvalp*, *u_long newval*);

int

casueword32(*volatile uint32_t *base, uint32_t oldval, uint32_t *oldvalp, uint32_t newval*);

u_long

casuword(volatile u_long *base, u_long oldval, u_long newval);

uint32_t

casuword32(*volatile uint32_t *base, uint32_t oldval, uint32_t newval*);

DESCRIPTION

The **casueword** functions are designed to perform atomic compare-and-swap operation on the value in the usermode memory of the current process.

The **casueword** routines reads the value from user memory with address *base*, and compare the value read with *oldval*. If the values are equal, *newval* is written to the **base*. In case of **casueword32**() and **casueword**(), old value is stored into the (kernel-mode) variable pointed by **oldvalp*. The userspace value must be naturally aligned.

The callers of **casuword**() and **casuword32**() functions cannot distinguish between -1 read from userspace and function failure.

RETURN VALUES

The **casuword**() and **casuword32**() functions return the data fetched or -1 on failure. The **casueword**() and **casueword32**() functions return 0 on success, -1 on failure to access memory, and 1 when comparison or store failed. The store can fail on load-linked/store-conditional architectures.

SEE ALSO

atomic(9), fetch(9), store(9)