

NAME

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

SYNOPSIS

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

```
#include <sys/system.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)