NAME

copy, **copyin**, **copyin_nofault**, **copyout**, **copyout_nofault**, **copystr**, **copyinstr** - heterogenous address space copy functions

SYNOPSIS

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

int
copyin(*const void *uaddr, void *kaddr, size_t len*);

int
copyin_nofault(*const void *uaddr, void *kaddr, size_t len*);

int
copyout(*const void *kaddr, void *uaddr, size_t len*);

int
copyout_nofault(*const void *kaddr, void *uaddr, size_t len*);

int __deprecated
copystr(*const void *kfaddr, void *kdaddr, size_t len, size_t *done*);

int
copyinstr(*const void *uaddr, void *kaddr, size_t len, size_t *done*);

DESCRIPTION

The **copy** functions are designed to copy contiguous data from one address space to another.

copystr() is deprecated and should be replaced with strlcpy(9). It will be removed from FreeBSD 13.

The **copyin**() and **copyin_nofault**() functions copy *len* bytes of data from the user-space address *uaddr* to the kernel-space address *kaddr*.

The **copyout**() and **copyout_nofault**() functions copy *len* bytes of data from the kernel-space address *kaddr* to the user-space address *uaddr*.

The **copyin_nofault**() and **copyout_nofault**() functions require that the kernel-space and user-space data be accessible without incurring a page fault. The source and destination addresses must be physically mapped for read and write access, respectively, and neither the source nor destination addresses may be

pageable.

The **copystr**() function copies a NUL-terminated string, at most *len* bytes long, from kernel-space address *kfaddr* to kernel-space address *kdaddr*. The number of bytes actually copied, including the terminating NUL, is returned in **done* (if *done* is non-NULL).

The **copyinstr**() function copies a NUL-terminated string, at most *len* bytes long, from user-space address *uaddr* to kernel-space address *kaddr*. The number of bytes actually copied, including the terminating NUL, is returned in **done* (if *done* is non-NULL).

RETURN VALUES

The **copy** functions return 0 on success. All but **copystr**() return EFAULT if a bad address is encountered. The **copyin_nofault**() and **copyout_nofault**() functions return EFAULT if a page fault occurs. The **copystr**() and **copyinstr**() functions return ENAMETOOLONG if the string is longer than *len* bytes.

SEE ALSO

fetch(9), store(9)