NAME

elf_begin − initialize an ELF descriptor

SYNOPSIS

#include <libelf.h>

Elf *elf_begin(int fildes, Elf_Cmd cmd, Elf *ref);

DESCRIPTION

Initialize and return a handle to an ELF file for use with the elfutils **libelf** library and related elfutils libraries such as **libdw**.

The returned **Elf** descriptor must be released using **elf_end(3)**.

elf_version(3) must be called before using any **libelf** library including **elf_begin(3)**.

PARAMETERS

fildes A file descriptor referring to an ELF object. The descriptor should be open for reading, and optionally for writing, depending on the intended operation. If *ref* is non-NULL, then *fildes* must either be -1 or be set to the same file descriptor as the one associated with *ref*.

cmd Specifies the action to perform. Common values include:

ELF_C_NULL
Return a NULL pointer instead of initializing an ELF descriptor. Ignores*r ef*.

ELF_C_READ
Open an ELF descriptor for reading.

ELF_C_WRITE
Open an ELF descriptor for writing. The descriptor initially refers to an empty file.

ELF_C_RDWR
Open an ELF descriptor for reading and writing.

ELF_C_READ_MMAP
Open an ELF descriptor for reading using mmap, if available. The**ELF_C_*_MMAP** commands are an elfutils libelf extension and may not be available in other libelf implementations. Once the mmap size is set attempts to extend the size may fail. Therefore, **ELF_C_*_MMAP** commands tend to be more useful for in-place modifications or removal of data from an ELF descriptor.

ELF_C_WRITE_MMAP
Open an ELF descriptor for writing using mmap, if available. The descriptor initially refers to an empty file.

ELF_C_RDWR_MMAP
Open an ELF descriptor for reading and writing using mmap, if available.

ELF_C_READ_MMAP_PRIVATE
Open an ELF descriptor for reading using mmap, if available. This command invokes mmap with MAP_PRIVATE whereas the other **ELF_C_*_MMAP** commands invoke mmap with MAP_SHARED. See **mmap(2)** for more information.

ref A reference to an existing Elf descriptor. If*r ef* refers to regular ELF binary (not an AR file), then **elf_begin** will duplicate *ref*. The reference count associated with*r ef* will be incremented and **elf_end(3)** will need to be called an additional time to deallocate *ref*. *ref* must have been opened with read/write permissions consistent with *cmd*.

If *ref* refers to an AR file, then the ELF descriptor returned will be the first available object member of the archive (see **elf_next(3)** for more information).

ref may be NULL, in which case this argument is ignored.

RETURN VALUE

On success, **elf_begin()** returns a pointer to a new Elf descriptor. If*cmd* is **ELF_C_NULL** then NULL is returned. If*r ef* is non-NULL and isn't an AR file, then a copy of *ref* is returned. On failure, **elf_begin()** returns NULL and sets an internal error state that can be retrieved with **elf_errmsg(3)**.

SEE ALSO

mmap(2), **elf_clone**(3), **elf_end**(3), **elf_next**(3), **elf_rand**(3), **libelf**(3), **elf**(5)

ATTRIBUTES

Interface	**Attribute**	**Value**
elf_begin()	Thread safety	MT-Safe

REPORTING BUGS

Report bugs to <elfutils-devel@sourceware.org> or https://sourceware.org/bugzilla/.