

**NAME**

**elftc\_bfd\_find\_target**, **elftc\_bfd\_target\_byteorder**, **elftc\_bfd\_target\_class**, **elftc\_bfd\_target\_flavor**, **elftc\_bfd\_target\_machine** - binary object descriptor handling

**LIBRARY**

library "libelftc"

**SYNOPSIS**

```
#include <libelftc.h>
```

```
struct Elftc_Bfd_Target;
```

```
Elftc_Bfd_Target *
```

```
elftc_bfd_find_target(const char *target_name);
```

```
unsigned int
```

```
elftc_bfd_target_class(Elftc_Bfd_Target *target);
```

```
unsigned int
```

```
elftc_bfd_target_byteorder(Elftc_Bfd_Target *target);
```

```
Elftc_Bfd_Target_Flavor
```

```
elftc_bfd_target_flavor(Elftc_Bfd_Target *target);
```

```
unsigned int
```

```
elftc_bfd_target_machine(Elftc_Bfd_Target *target);
```

```
unsigned int
```

```
elftc_bfd_target_osabi(Elftc_Bfd_Target *target);
```

**DESCRIPTION**

Function **elftc\_bfd\_find\_target**() locates a binary object descriptor corresponding to the descriptor name in argument *target\_name*. Binary object descriptors encapsulate properties of an object format such as its file representation, ELF class, and byte endianness.

Known descriptor names and their properties include:

| <i>Name</i>  | <i>Object Format</i> | <i>Byte Order</i> | <i>Bit Width</i> |
|--------------|----------------------|-------------------|------------------|
| binary       | Binary               | -                 | -                |
| efi-app-ia32 | PE                   | LSB               | 32               |

|                       |     |     |    |
|-----------------------|-----|-----|----|
| efi-app-x86_64        | PE  | LSB | 64 |
| elf32-avr             | ELF | LSB | 32 |
| elf32-big             | ELF | MSB | 32 |
| elf32-bigarm          | ELF | MSB | 32 |
| elf32-bigmips         | ELF | MSB | 32 |
| elf32-i386            | ELF | LSB | 32 |
| elf32-i386-freebsd    | ELF | LSB | 32 |
| elf32-ia64-big        | ELF | MSB | 32 |
| elf32-little          | ELF | LSB | 32 |
| elf32-littlearm       | ELF | LSB | 32 |
| elf32-littlemips      | ELF | LSB | 32 |
| elf32-powerpc         | ELF | MSB | 32 |
| elf32-powerpc-freebsd | ELF | MSB | 32 |
| elf32-powerpcle       | ELF | LSB | 32 |
| elf32-riscv           | ELF | LSB | 32 |
| elf64-riscv           | ELF | LSB | 64 |
| elf64-riscv-freebsd   | ELF | LSB | 64 |
| elf32-sh              | ELF | MSB | 32 |
| elf32-shl             | ELF | LSB | 32 |
| elf32-sh-nbsd         | ELF | MSB | 32 |
| elf32-shl-nbsd        | ELF | LSB | 32 |
| elf32-shbig-linux     | ELF | MSB | 32 |
| elf32-shl-linux       | ELF | LSB | 32 |
| elf32-sparc           | ELF | MSB | 32 |
| elf32-tradbigmips     | ELF | MSB | 32 |
| elf32-tradlittlemips  | ELF | LSB | 32 |
| elf64-alpha           | ELF | LSB | 64 |
| elf64-alpha-freebsd   | ELF | LSB | 64 |
| elf64-big             | ELF | MSB | 64 |
| elf64-bigmips         | ELF | MSB | 64 |
| elf64-ia64-big        | ELF | MSB | 64 |
| elf64-ia64-little     | ELF | LSB | 64 |
| elf64-little          | ELF | LSB | 64 |
| elf64-littleaarch64   | ELF | LSB | 64 |
| elf64-littlemips      | ELF | LSB | 64 |
| elf64-powerpc         | ELF | MSB | 64 |
| elf64-powerpc-freebsd | ELF | MSB | 64 |
| elf64-powerpcle       | ELF | LSB | 64 |
| elf64-sh64            | ELF | MSB | 64 |
| elf64-sh64l           | ELF | LSB | 64 |

|                      |      |     |    |
|----------------------|------|-----|----|
| elf64-sh64-nbsd      | ELF  | MSB | 64 |
| elf64-sh64l-nbsd     | ELF  | LSB | 64 |
| elf64-sh64big-linux  | ELF  | MSB | 64 |
| elf64-sh64-linux     | ELF  | LSB | 64 |
| elf64-sparc          | ELF  | MSB | 64 |
| elf64-sparc-freebsd  | ELF  | MSB | 64 |
| elf64-tradbigmips    | ELF  | MSB | 64 |
| elf64-tradlittlemips | ELF  | LSB | 64 |
| elf64-x86-64         | ELF  | LSB | 64 |
| elf64-x86-64-freebsd | ELF  | LSB | 64 |
| ihex                 | IHEX | -   | -  |
| pei-i386             | PE   | LSB | 32 |
| pei-x86-64           | PE   | LSB | 64 |
| srec                 | SREC | -   | -  |
| symbolsrec           | SREC | -   | -  |

Function **elftc\_bfd\_target\_byteorder()** returns the ELF byte order associated with target descriptor *target*.

Function **elftc\_bfd\_target\_class()** returns the ELF class associated with target descriptor *target*.

Function **elftc\_bfd\_target\_flavor()** returns the object format associated with target descriptor *target*. The known object formats are:

|            |  |
|------------|--|
| ETF_ELF    | An ELF object.                         |
| ETF_BINARY | Raw binary.                            |
| ETF_IHEX   | An object encoded in Intel hex format. |
| ETF_NONE   | An unknown object format.              |
| ETF_SREC   | An object encoded as S-records.        |

## RETURN VALUES

Function **elftc\_bfd\_find\_target()** returns a valid pointer to an opaque binary target descriptor if successful, or NULL in case of an error.

Function **elftc\_bfd\_target\_byteorder()** returns the ELF byte order associated with the target descriptor; one of ELFDATA2MSB or ELFDATA2LSB.

Function **elftc\_bfd\_target\_class()** returns the ELF class associated with the target descriptor; one of ELFCLASS32 or ELFCLASS64.

Function **elftc\_bfd\_target\_machine()** returns the ELF architecture associated with the target descriptor.

Function **elftc\_bfd\_target\_flavor()** returns one of ETF\_BINARY, ETF\_ELF, ETF\_IHEX or ETF\_SREC if successful or ETF\_NONE in case of error.

### EXAMPLES

To return descriptor information associated with target name "elf64-big" use:

```
struct Elftc_Bfd_Target *t;

if ((t = elftc_bfd_find_target("elf64-big")) == NULL)
    errx(EXIT_FAILURE, "Cannot find target descriptor");

printf("Class: %s\n", elftc_bfd_target_class(t) == ELFCLASS32 ?
    "ELFCLASS32" : "ELFCLASS64");
printf("Byteorder: %s\n",
    elftc_bfd_target_byteorder(t) == ELFDATA2LSB ? "LSB" : "MSB");
printf("Flavor: %d\n", elftc_bfd_target_flavor(t));
```

### SEE ALSO

elf(3)