

**NAME**

**elf\_getscn**, **elf\_ndxscn**, **elf\_newscn**, **elf\_nextscn** - get/allocate section information for an ELF object

**LIBRARY**

ELF Access Library (libelf, -lelf)

**SYNOPSIS**

```
#include <libelf.h>
```

```
Elf_Scn *
```

```
elf_getscn(Elf *elf, size_t index);
```

```
size_t
```

```
elf_ndxscn(Elf_Scn *scn);
```

```
Elf_Scn *
```

```
elf_newscn(Elf *elf);
```

```
Elf_Scn *
```

```
elf_nextscn(Elf *elf, Elf_Scn *scn);
```

**DESCRIPTION**

These functions are used to iterate through the sections associated with an ELF descriptor.

Function **elf\_getscn()** will return a section descriptor for the section at index *index* in the object denoted by ELF descriptor *elf*. An error will be signalled if the specified section does not exist.

Function **elf\_ndxscn()** returns the section table index associated with section descriptor *scn*.

Function **elf\_newscn()** creates a new section and appends it to the list of sections associated with descriptor *elf*. The library will automatically increment the *e\_shnum* field of the ELF header associated with descriptor *elf*, and will set the ELF\_F\_DIRTY flag on the returned section descriptor. For ELF descriptors opened for writing, the ELF library will automatically create an empty section at index zero (SHN\_UNDEF) on the first call to **elf\_newscn()**.

Function **elf\_nextscn()** takes a section descriptor *scn* and returns a pointer to the section descriptor at the next higher index. As a consequence, **elf\_nextscn()** will never return a pointer to the empty section at index zero (SHN\_UNDEF). Argument *scn* is allowed to be NULL, in which case this function will return a pointer to the section descriptor at index 1. If no further sections are present, function **elf\_nextscn()** will return a NULL pointer.

**RETURN VALUES**

Functions **elf\_getscn()**, **elf\_newscn()** and **elf\_nextscn()** return a valid pointer to a section descriptor if successful, or NULL if an error occurs.

Function **elf\_ndxscn()** returns a valid section table index if successful, or SHN\_UNDEF if an error occurs.

**ERRORS**

These functions may fail with the following errors:

[ELF\_E\_ARGUMENT]

Arguments *elf* or *scn* were NULL.

[ELF\_E\_ARGUMENT]

Argument *index* exceeded the current number of sections in the ELF object.

[ELF\_E\_ARGUMENT]

Argument *elf* was not a descriptor for an ELF file.

[ELF\_E\_ARGUMENT]

Section descriptor *scn* was not associated with ELF descriptor *elf*.

[ELF\_E\_CLASS]

Descriptor *elf* was of an unknown ELF class.

[ELF\_E\_SECTION]

Argument *elf* specified extended section numbering in the ELF header with the section header at index SHN\_UNDEF not being of type SHT\_NULL.

**SEE ALSO**

elf(3), elf\_flagdata(3), elf\_flagscn(3), elf\_getdata(3), elf\_getshdr(3), gelf(3)