



Rocky Enterprise Linux 9.2 Manual Pages on command 'offsetof.3'

C:\>man offsetof.3

OFFSETOF(3) Linux Programmer's Manual OFFSETOF(3)

NAME

offsetof - offset of a structure member

SYNOPSIS

```
#include <stddef.h>
```

```
size_t offsetof(type, member);
```

DESCRIPTION

The macro `offsetof()` returns the offset of the field `member` from the start of the structure type.

This macro is useful because the sizes of the fields that compose a structure can vary across implementations, and compilers may insert different numbers of padding bytes between fields. Consequently, an element's offset is not necessarily given by the sum of the sizes of the previous elements.

A compiler error will result if `member` is not aligned to a byte boundary (i.e., it is a bit field).

RETURN VALUE

`offsetof()` returns the offset of the given member within the given type, in units of bytes.

CONFORMING TO

POSIX.1-2001, POSIX.1-2008, C89, C99.

EXAMPLE

On a Linux/i386 system, when compiled using the default `gcc(1)` options, the program

below produces the following output:

```
$ ./a.out
```

```
offsets: i=0; c=4; d=8 a=16
```

```
sizeof(struct s)=16
```

Program source

```
#include <stddef.h>
#include <stdio.h>
#include <stdlib.h>

int
main(void)
{
    struct s {
        int i;
        char c;
        double d;
        char a[];
    };
    /* Output is compiler dependent */
    printf("offsets: i=%zd; c=%zd; d=%zd a=%zd\n",
           offsetof(struct s, i), offsetof(struct s, c),
           offsetof(struct s, d), offsetof(struct s, a));
    printf("sizeof(struct s)=%zd\n", sizeof(struct s));
    exit(EXIT_SUCCESS);
}
```

COLOPHON

This page is part of release 5.05 of the Linux man-pages project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at <https://www.kernel.org/doc/man-pages/>.