



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

\$ man strcmp.3

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

NAME

strcmp, strncmp - compare two strings

SYNOPSIS

```
#include <string.h>

int strcmp(const char *s1, const char *s2);

int strncmp(const char *s1, const char *s2, size_t n);
```

DESCRIPTION

The `strcmp()` function compares the two strings `s1` and `s2`. The locale is not taken into account (for a locale-aware comparison, see `strcoll(3)`). The comparison is done using unsigned characters.

`strcmp()` returns an integer indicating the result of the comparison, as follows:

- ? 0, if the `s1` and `s2` are equal;
- ? a negative value if `s1` is less than `s2`;
- ? a positive value if `s1` is greater than `s2`.

The `strncmp()` function is similar, except it compares only the first (at most) `n` bytes of `s1` and `s2`.

RETURN VALUE

The `strcmp()` and `strncmp()` functions return an integer less than, equal to, or greater than zero if `s1` (or the first `n` bytes thereof) is found, respectively, to be less than, to match, or be greater than `s2`.

ATTRIBUTES

For an explanation of the terms used in this section, see attributes(7).

??

?Interface ? Attribute ? Value ?

??

?`strcmp()`, `strncmp()` ? Thread safety ? MT-Safe ?

??

CONFORMING TO

POSIX.1-2001, POSIX.1-2008, C89, C99, SVr4, 4.3BSD.

NOTES

POSIX.1 specifies only that:

The sign of a nonzero return value shall be determined by the sign of the difference between the values of the first pair of bytes (both interpreted as type `unsigned char`) that differ in the strings being compared.

In `glibc`, as in most other implementations, the return value is the arithmetic result of subtracting the last compared byte in `s2` from the last compared byte in `s1`. (If the two characters are equal, this difference is 0.)

EXAMPLES

The program below can be used to demonstrate the operation of `strcmp()` (when given two arguments) and `strncmp()` (when given three arguments).

First, some examples using `strcmp()`:

```
$ ./string_comp ABC ABC
```

<str1> and <str2> are equal

```
$ ./string_comp ABC AB # 'C' is ASCII 67; 'C' - ' ' = 67
```

<str1> is greater than <str2> (67)

```
$ ./string_comp ABA ABZ # 'A' is ASCII 65; 'Z' is ASCII 90
```

<str1> is less than <str2> (-25)

```
$ ./string_comp ABJ ABC
```

<str1> is greater than <str2> (7)

```
$ ./string_comp '$\201' A # 0201 - 0101 = 0100 (or 64 decimal)
```

<str1> is greater than <str2> (64)

The last example uses bash(1)-specific syntax to produce a string containing an 8-bit ASCII code; the result demonstrates that the string comparison uses unsigned characters.

And then some examples using strncmp():

```
$ ./string_comp ABC AB 3
```

<str1> is greater than <str2> (67)

```
$ ./string_comp ABC AB 2
```

<str1> and <str2> are equal in the first 2 bytes

Program source

```
/* string_comp.c

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*/

#include <stdio.h>
#include <stdlib.h>
#include <string.h>

int
main(int argc, char *argv[])
{
    int res;
    if (argc < 3) {
        fprintf(stderr, "Usage: %s <str1> <str2> [<len>]\n", argv[0]);
        exit(EXIT_FAILURE);
    }
    if (argc == 3)
        res = strcmp(argv[1], argv[2]);
    else
        res = strncmp(argv[1], argv[2], atoi(argv[3]));
    if (res == 0) {
```

```

printf("<str1> and <str2> are equal");
if (argc > 3)
    printf(" in the first %d bytes\n", atoi(argv[3]));
printf("\n");
} else if (res < 0) {
    printf("<str1> is less than <str2> (%d)\n", res);
} else {
    printf("<str1> is greater than <str2> (%d)\n", res);
}
exit(EXIT_SUCCESS);
}

```

SEE ALSO

bcmp(3), memcmp(3), strcasecmp(3), strcoll(3), string(3), strn?
 casecmp(3), strverscmp(3), wcscmp(3), wcsncmp(3), ascii(7)

COLOPHON

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