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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'strcmp.3' command

\$ 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 at?

tributes(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

This page is part of release 5.10 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/>.

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