

**NAME**

strcpy, strcpy, strcat – copy or concatenate a string

**LIBRARY**

Standard C library (*libc*, *-lc*)

**SYNOPSIS**

```
#include <string.h>
```

```
char *strcpy(char *restrict dst, const char *restrict src);
char *strcpy(char *restrict dst, const char *restrict src);
char *strcat(char *restrict dst, const char *restrict src);
```

Feature Test Macro Requirements for glibc (see **feature\_test\_macros(7)**):

**strcpy():**

Since glibc 2.10:

```
_POSIX_C_SOURCE >= 200809L
```

Before glibc 2.10:

```
_GNU_SOURCE
```

**DESCRIPTION**

**strcpy()**

**strcpy()**

These functions copy the string pointed to by *src*, into a string at the buffer pointed to by *dst*. The programmer is responsible for allocating a destination buffer large enough, that is, *strlen(src) + 1*. For the difference between the two functions, see RETURN VALUE.

**strcat()** This function concatenates the string pointed to by *src*, after the string pointed to by *dst* (overwriting its terminating null byte). The programmer is responsible for allocating a destination buffer large enough, that is, *strlen(dst) + strlen(src) + 1*.

An implementation of these functions might be:

```
char *
strcpy(char *restrict dst, const char *restrict src)
{
    char *p;

    p = memcpy(dst, src, strlen(src));
    *p = '\0';

    return p;
}

char *
strcpy(char *restrict dst, const char *restrict src)
{
    strcpy(dst, src);
    return dst;
}

char *
strcat(char *restrict dst, const char *restrict src)
{
    strcpy(dst + strlen(dst), src);
    return dst;
}
```

**RETURN VALUE****stpcpy()**

This function returns a pointer to the terminating null byte of the copied string.

**strcpy()**

**strcat()** These functions return *dst*.

**ATTRIBUTES**

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

Interface	Attribute	Value
<b>stpcpy()</b> , <b>strcpy()</b> , <b>strcat()</b>	Thread safety	MT-Safe

**STANDARDS****stpcpy()**

POSIX.1-2008.

**strcpy()**

**strcat()** POSIX.1-2001, POSIX.1-2008, C99, SVr4, 4.3BSD.

**CAVEATS**

The strings *src* and *dst* may not overlap.

If the destination buffer is not large enough, the behavior is undefined. See **\_FORTIFY\_SOURCE** in **feature\_test\_macros(7)**.

**strcat()** can be very inefficient. Read about Shlemiel the painter(<https://www.joelonsoftware.com/2001/12/11/back-to-basics/>).

**EXAMPLES**

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

int
main(void)
{
    char    *p;
    char    *buf1;
    char    *buf2;
    size_t  len, maxsize;

    maxsize = strlen("Hello ") + strlen("world") + strlen("!") + 1;
    buf1 = malloc(sizeof(*buf1) * maxsize);
    if (buf1 == NULL)
        err(EXIT_FAILURE, "malloc()");
    buf2 = malloc(sizeof(*buf2) * maxsize);
    if (buf2 == NULL)
        err(EXIT_FAILURE, "malloc()");

    p = buf1;
    p = stpcpy(p, "Hello ");
    p = stpcpy(p, "world");
    p = stpcpy(p, "!");
    len = p - buf1;

    printf("[len = %zu]: ", len);
    puts(buf1); // "Hello world!"
```

```
    free(buf1);

    strcpy(buf2, "Hello ");
    strcat(buf2, "world");
    strcat(buf2, "!");
    len = strlen(buf2);

    printf("[len = %zu]: ", len);
    puts(buf2); // "Hello world!"
    free(buf2);

    exit(EXIT_SUCCESS);
}
```

**SEE ALSO****strdup(3), string(3), wcsncpy(3), string\_copying(7)**