NAME

BUF_MEM_new, BUF_MEM_new_ex, BUF_MEM_free, BUF_MEM_grow, BUF_MEM_grow_clean, BUF_reverse - simple character array structure

SYNOPSIS

```
#include <openssl/buffer.h>

BUF_MEM *BUF_MEM_new(void);

BUF_MEM *BUF_MEM_new_ex(unsigned long flags);

void BUF_MEM_free(BUF_MEM *a);

int BUF_MEM_grow(BUF_MEM *str, int len);
size_t BUF_MEM_grow_clean(BUF_MEM *str, size_t len);

void BUF_reverse(unsigned char *out, const unsigned char *in, size_t size);
```

DESCRIPTION

The buffer library handles simple character arrays. Buffers are used for various purposes in the library, most notably memory BIOs.

BUF_MEM_new() allocates a new buffer of zero size.

BUF_MEM_new_ex() allocates a buffer with the specified flags. The flag **BUF_MEM_FLAG_SECURE** specifies that the **data** pointer should be allocated on the secure heap; see **CRYPTO_secure_malloc**(3).

BUF_MEM_free() frees up an already existing buffer. The data is zeroed before freeing up in case the buffer contains sensitive data.

BUF_MEM_grow() changes the size of an already existing buffer to **len**. Any data already in the buffer is preserved if it increases in size.

BUF_MEM_grow_clean() is similar to **BUF_MEM_grow()** but it sets any free'd or additionally-allocated memory to zero.

BUF_reverse() reverses **size** bytes at **in** into **out**. If **in** is NULL, the array is reversed in-place.

RETURN VALUES

BUF_MEM_new() returns the buffer or NULL on error.

BUF_MEM_free() has no return value.

BUF_MEM_grow() and **BUF_MEM_grow_clean()** return zero on error or the new size (i.e., **len**).

SEE ALSO

bio(7), **CRYPTO_secure_malloc**(3).

HISTORY

The **BUF_MEM_new_ex()** function was added in OpenSSL 1.1.0.

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