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## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'BIO\_meth\_get\_read\_ex.3ossl' command**

**`$ man BIO_meth_get_read_ex.3ossl`**

BIO\_METH\_NEW(3ossl)          OpenSSL          BIO\_METH\_NEW(3ossl)

### NAME

BIO\_get\_new\_index, BIO\_meth\_new, BIO\_meth\_free, BIO\_meth\_get\_read\_ex,  
BIO\_meth\_set\_read\_ex, BIO\_meth\_get\_write\_ex, BIO\_meth\_set\_write\_ex,  
BIO\_meth\_get\_write, BIO\_meth\_set\_write, BIO\_meth\_get\_read,  
BIO\_meth\_set\_read, BIO\_meth\_get\_puts, BIO\_meth\_set\_puts,  
BIO\_meth\_get\_gets, BIO\_meth\_set\_gets, BIO\_meth\_get\_ctrl,  
BIO\_meth\_set\_ctrl, BIO\_meth\_get\_create, BIO\_meth\_set\_create,  
BIO\_meth\_get\_destroy, BIO\_meth\_set\_destroy, BIO\_meth\_get\_callback\_ctrl,  
BIO\_meth\_set\_callback\_ctrl - Routines to build up BIO methods

### SYNOPSIS

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

```
int BIO_get_new_index(void);
```

```
BIO_METHOD *BIO_meth_new(int type, const char *name);
```

```
void BIO_meth_free(BIO_METHOD *biom);
```

```
int (*BIO_meth_get_write_ex(const BIO_METHOD *biom))(BIO *, const char *, size_t,  
size_t *);
```

```

int (*BIO_meth_get_write(const BIO_METHOD *biom))(BIO *, const char *, int);
int BIO_meth_set_write_ex(BIO_METHOD *biom,
    int (*bwrite)(BIO *, const char *, size_t, size_t *));
int BIO_meth_set_write(BIO_METHOD *biom,
    int (*write)(BIO *, const char *, int));

int (*BIO_meth_get_read_ex(const BIO_METHOD *biom))(BIO *, char *, size_t, size_t *);
int (*BIO_meth_get_read(const BIO_METHOD *biom))(BIO *, char *, int);
int BIO_meth_set_read_ex(BIO_METHOD *biom,
    int (*bread)(BIO *, char *, size_t, size_t *));
int BIO_meth_set_read(BIO_METHOD *biom, int (*read)(BIO *, char *, int));

int (*BIO_meth_get_puts(const BIO_METHOD *biom))(BIO *, const char *);
int BIO_meth_set_puts(BIO_METHOD *biom, int (*puts)(BIO *, const char *));

int (*BIO_meth_get_gets(const BIO_METHOD *biom))(BIO *, char *, int);
int BIO_meth_set_gets(BIO_METHOD *biom,
    int (*gets)(BIO *, char *, int));

long (*BIO_meth_get_ctrl(const BIO_METHOD *biom))(BIO *, int, long, void *);
int BIO_meth_set_ctrl(BIO_METHOD *biom,
    long (*ctrl)(BIO *, int, long, void *));

int (*BIO_meth_get_create(const BIO_METHOD *bion))(BIO *);
int BIO_meth_set_create(BIO_METHOD *biom, int (*create)(BIO *));

int (*BIO_meth_get_destroy(const BIO_METHOD *biom))(BIO *);
int BIO_meth_set_destroy(BIO_METHOD *biom, int (*destroy)(BIO *));

long (*BIO_meth_get_callback_ctrl(const BIO_METHOD *biom))(BIO *, int, BIO_info_cb *);
int BIO_meth_set_callback_ctrl(BIO_METHOD *biom,
    long (*callback_ctrl)(BIO *, int, BIO_info_cb *));

```

## DESCRIPTION

The `BIO_METHOD` type is a structure used for the implementation of new BIO types. It provides a set of functions used by OpenSSL for the implementation of the various BIO capabilities. See the `bio(7)` page for more information.

`BIO_meth_new()` creates a new `BIO_METHOD` structure. It should be given a unique integer type and a string that represents its name. Use `BIO_get_new_index()` to get the value for type.

The set of standard OpenSSL provided BIO types is provided in `<openssl/bio.h>`. Some examples include `BIO_TYPE_BUFFER` and `BIO_TYPE_CIPHER`. Filter BIOs should have a type which have the "filter" bit set (`BIO_TYPE_FILTER`). Source/sink BIOs should have the "source/sink" bit set (`BIO_TYPE_SOURCE_SINK`). File descriptor based BIOs (e.g. socket, fd, connect, accept etc) should additionally have the "descriptor" bit set (`BIO_TYPE_DESCRIPTOR`). See the `BIO_find_type(3)` page for more information.

`BIO_meth_free()` destroys a `BIO_METHOD` structure and frees up any memory associated with it.

`BIO_meth_get_write_ex()` and `BIO_meth_set_write_ex()` get and set the function used for writing arbitrary length data to the BIO respectively. This function will be called in response to the application calling `BIO_write_ex()` or `BIO_write()`. The parameters for the function have the same meaning as for `BIO_write_ex()`. Older code may call `BIO_meth_get_write()` and `BIO_meth_set_write()` instead. Applications should not call both `BIO_meth_set_write_ex()` and `BIO_meth_set_write()` or call `BIO_meth_get_write()` when the function was set with `BIO_meth_set_write_ex()`.

`BIO_meth_get_read_ex()` and `BIO_meth_set_read_ex()` get and set the

function used for reading arbitrary length data from the BIO respectively. This function will be called in response to the application calling `BIO_read_ex()` or `BIO_read()`. The parameters for the function have the same meaning as for `BIO_read_ex()`. Older code may call `BIO_meth_get_read()` and `BIO_meth_set_read()` instead. Applications should not call both `BIO_meth_set_read_ex()` and `BIO_meth_set_read()` or call `BIO_meth_get_read()` when the function was set with `BIO_meth_set_read_ex()`.

`BIO_meth_get_puts()` and `BIO_meth_set_puts()` get and set the function used for writing a NULL terminated string to the BIO respectively. This function will be called in response to the application calling `BIO_puts()`. The parameters for the function have the same meaning as for `BIO_puts()`.

`BIO_meth_get_gets()` and `BIO_meth_set_gets()` get and set the function typically used for reading a line of data from the BIO respectively (see the `BIO_gets(3)` page for more information). This function will be called in response to the application calling `BIO_gets()`. The parameters for the function have the same meaning as for `BIO_gets()`.

`BIO_meth_get_ctrl()` and `BIO_meth_set_ctrl()` get and set the function used for processing ctrl messages in the BIO respectively. See the `BIO_ctrl(3)` page for more information. This function will be called in response to the application calling `BIO_ctrl()`. The parameters for the function have the same meaning as for `BIO_ctrl()`.

`BIO_meth_get_create()` and `BIO_meth_set_create()` get and set the function used for creating a new instance of the BIO respectively. This function will be called in response to the application calling `BIO_new()` and passing in a pointer to the current `BIO_METHOD`. The `BIO_new()` function will allocate the memory for the new BIO, and a pointer to this newly allocated structure will be passed as a parameter

to the function. If a create function is set, `BIO_new()` will not mark the BIO as initialised on allocation. `BIO_set_init(3)` must then be called either by the create function, or later, by a BIO ctrl function, once BIO initialisation is complete.

`BIO_meth_get_destroy()` and `BIO_meth_set_destroy()` get and set the function used for destroying an instance of a BIO respectively. This function will be called in response to the application calling `BIO_free()`. A pointer to the BIO to be destroyed is passed as a parameter. The destroy function should be used for BIO specific clean up. The memory for the BIO itself should not be freed by this function.

`BIO_meth_get_callback_ctrl()` and `BIO_meth_set_callback_ctrl()` get and set the function used for processing callback ctrl messages in the BIO respectively. See the `BIO_callback_ctrl(3)` page for more information. This function will be called in response to the application calling `BIO_callback_ctrl()`. The parameters for the function have the same meaning as for `BIO_callback_ctrl()`.

## RETURN VALUES

`BIO_get_new_index()` returns the new BIO type value or -1 if an error occurred.

`BIO_meth_new(int type, const char *name)` returns a valid `BIO_METHOD` or `NULL` if an error occurred.

The `BIO_meth_set` functions return 1 on success or 0 on error.

The `BIO_meth_get` functions return the corresponding function pointers.

## SEE ALSO

`bio(7)`, `BIO_find_type(3)`, `BIO_ctrl(3)`, `BIO_read_ex(3)`, `BIO_new(3)`

## HISTORY

The functions described here were added in OpenSSL 1.1.0.

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3.0.7                      2023-07-13                      BIO\_METH\_NEW(3ossl)