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## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'BIO\_up\_ref.3ossl' command**

**\$ man BIO\_up\_ref.3ossl**

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

### NAME

BIO\_new\_ex, BIO\_new, BIO\_up\_ref, BIO\_free, BIO\_vfree, BIO\_free\_all -  
BIO allocation and freeing functions

### SYNOPSIS

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

```
BIO *BIO_new_ex(OSSL_LIB_CTX *libctx, const BIO_METHOD *type);
```

```
BIO *BIO_new(const BIO_METHOD *type);
```

```
int BIO_up_ref(BIO *a);
```

```
int BIO_free(BIO *a);
```

```
void BIO_vfree(BIO *a);
```

```
void BIO_free_all(BIO *a);
```

### DESCRIPTION

The BIO\_new\_ex() function returns a new BIO using method type associated with the library context libctx (see OSSL\_LIB\_CTX(3)). The library context may be NULL to indicate the default library context.

The BIO\_new() is the same as BIO\_new\_ex() except the default library context is always used.

BIO\_up\_ref() increments the reference count associated with the BIO object.

BIO\_free() frees up a single BIO, BIO\_vfree() also frees up a single BIO but it does not return a value. If a is NULL nothing is done.

Calling BIO\_free() may also have some effect on the underlying I/O structure, for example it may close the file being referred to under certain circumstances. For more details see the individual BIO\_METHOD descriptions.

BIO\_free\_all() frees up an entire BIO chain, it does not halt if an error occurs freeing up an individual BIO in the chain. If a is NULL nothing is done.

## RETURN VALUES

BIO\_new\_ex() and BIO\_new() return a newly created BIO or NULL if the call fails.

BIO\_up\_ref() and BIO\_free() return 1 for success and 0 for failure.

BIO\_free\_all() and BIO\_vfree() do not return values.

## NOTES

If BIO\_free() is called on a BIO chain it will only free one BIO resulting in a memory leak.

Calling BIO\_free\_all() on a single BIO has the same effect as calling BIO\_free() on it other than the discarded return value.

## HISTORY

BIO\_set() was removed in OpenSSL 1.1.0 as BIO type is now opaque.

BIO\_new\_ex() was added in OpenSSL 3.0.

## EXAMPLES

Create a memory BIO:

```
BIO *mem = BIO_new(BIO_s_mem());
```

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3.0.7

2023-07-13

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