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## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'BIO\_new\_file.3openssl' command**

**\$ man BIO\_new\_file.3openssl**

BIO\_S\_FILE(3openssl)          OpenSSL          BIO\_S\_FILE(3openssl)

### NAME

BIO\_s\_file, BIO\_new\_file, BIO\_new\_fp, BIO\_set\_fp, BIO\_get\_fp,  
BIO\_read\_filename, BIO\_write\_filename, BIO\_append\_filename,  
BIO\_rw\_filename - FILE bio

### SYNOPSIS

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

```
const BIO_METHOD *BIO_s_file(void);
```

```
BIO *BIO_new_file(const char *filename, const char *mode);
```

```
BIO *BIO_new_fp(FILE *stream, int flags);
```

```
BIO_set_fp(BIO *b, FILE *fp, int flags);
```

```
BIO_get_fp(BIO *b, FILE **fpp);
```

```
int BIO_read_filename(BIO *b, char *name);
```

```
int BIO_write_filename(BIO *b, char *name);
```

```
int BIO_append_filename(BIO *b, char *name);
```

```
int BIO_rw_filename(BIO *b, char *name);
```

### DESCRIPTION

`BIO_s_file()` returns the BIO file method. As its name implies it is a wrapper round the stdio FILE structure and it is a source/sink BIO.

Calls to `BIO_read_ex()` and `BIO_write_ex()` read and write data to the underlying stream. `BIO_gets()` and `BIO_puts()` are supported on file BIOs.

`BIO_flush()` on a file BIO calls the `fflush()` function on the wrapped stream.

`BIO_reset()` attempts to change the file pointer to the start of file using `fseek(stream, 0, 0)`.

`BIO_seek()` sets the file pointer to position `ofs` from start of file using `fseek(stream, ofs, 0)`.

`BIO_eof()` calls `feof()`.

Setting the `BIO_CLOSE` flag calls `fclose()` on the stream when the BIO is freed.

`BIO_new_file()` creates a new file BIO with mode `mode` the meaning of `mode` is the same as the stdio function `fopen()`. The `BIO_CLOSE` flag is set on the returned BIO.

`BIO_new_fp()` creates a file BIO wrapping stream. Flags can be: `BIO_CLOSE`, `BIO_NOCLOSE` (the close flag) `BIO_FP_TEXT` (sets the underlying stream to text mode, default is binary: this only has any effect under Win32).

`BIO_set_fp()` sets the fp of a file BIO to `fp`. `flags` has the same meaning as in `BIO_new_fp()`, it is a macro.

BIO\_get\_fp() retrieves the fp of a file BIO, it is a macro.

BIO\_seek() is a macro that sets the position pointer to offset bytes from the start of file.

BIO\_tell() returns the value of the position pointer.

BIO\_read\_filename(), BIO\_write\_filename(), BIO\_append\_filename() and BIO\_rw\_filename() set the file BIO b to use file name for reading, writing, append or read write respectively.

## NOTES

When wrapping stdout, stdin or stderr the underlying stream should not normally be closed so the BIO\_NOCLOSE flag should be set.

Because the file BIO calls the underlying stdio functions any quirks in stdio behaviour will be mirrored by the corresponding BIO.

On Windows BIO\_new\_files reserves for the filename argument to be UTF-8 encoded. In other words if you have to make it work in multi-lingual environment, encode filenames in UTF-8.

## RETURN VALUES

BIO\_s\_file() returns the file BIO method.

BIO\_new\_file() and BIO\_new\_fp() return a file BIO or NULL if an error occurred.

BIO\_set\_fp() and BIO\_get\_fp() return 1 for success or  $\leq 0$  for failure (although the current implementation never return 0).

BIO\_seek() returns 0 for success or negative values for failure.

BIO\_tell() returns the current file position or negative values for failure.

BIO\_read\_filename(), BIO\_write\_filename(), BIO\_append\_filename() and BIO\_rw\_filename() return 1 for success or <=0 for failure.

## EXAMPLES

File BIO "hello world":

```
BIO *bio_out;

bio_out = BIO_new_fp(stdout, BIO_NOCLOSE);
BIO_printf(bio_out, "Hello World\n");
```

Alternative technique:

```
BIO *bio_out;

bio_out = BIO_new(BIO_s_file());
if (bio_out == NULL)
    /* Error */
if (BIO_set_fp(bio_out, stdout, BIO_NOCLOSE) <= 0)
    /* Error */
BIO_printf(bio_out, "Hello World\n");
```

Write to a file:

```
BIO *out;

out = BIO_new_file("filename.txt", "w");
if (!out)
    /* Error */
BIO_printf(out, "Hello World\n");
```

```
BIO_free(out);
```

Alternative technique:

```
BIO *out;
```

```
out = BIO_new(BIO_s_file());
```

```
if (out == NULL)
```

```
    /* Error */
```

```
if (BIO_write_filename(out, "filename.txt") <= 0)
```

```
    /* Error */
```

```
BIO_printf(out, "Hello World\n");
```

```
BIO_free(out);
```

## BUGS

BIO\_reset() and BIO\_seek() are implemented using fseek() on the underlying stream. The return value for fseek() is 0 for success or -1 if an error occurred this differs from other types of BIO which will typically return 1 for success and a non positive value if an error occurred.

## SEE ALSO

BIO\_seek(3), BIO\_tell(3), BIO\_reset(3), BIO\_flush(3), BIO\_read\_ex(3),  
BIO\_write\_ex(3), BIO\_puts(3), BIO\_gets(3), BIO\_printf(3),  
BIO\_set\_close(3), BIO\_get\_close(3)

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