

**NAME**

BIO\_ADDR, BIO\_ADDR\_new, BIO\_ADDR\_clear, BIO\_ADDR\_free, BIO\_ADDR\_rawmake, BIO\_ADDR\_family, BIO\_ADDR\_rawaddress, BIO\_ADDR\_rawport, BIO\_ADDR\_hostname\_string, BIO\_ADDR\_service\_string, BIO\_ADDR\_path\_string - BIO\_ADDR routines

**SYNOPSIS**

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

typedef union bio_addr_st BIO_ADDR;

BIO_ADDR *BIO_ADDR_new(void);
void BIO_ADDR_free(BIO_ADDR *);
void BIO_ADDR_clear(BIO_ADDR *ap);
int BIO_ADDR_rawmake(BIO_ADDR *ap, int family,
                    const void *where, size_t whereLen, unsigned short port);
int BIO_ADDR_family(const BIO_ADDR *ap);
int BIO_ADDR_rawaddress(const BIO_ADDR *ap, void *p, size_t *l);
unsigned short BIO_ADDR_rawport(const BIO_ADDR *ap);
char *BIO_ADDR_hostname_string(const BIO_ADDR *ap, int numeric);
char *BIO_ADDR_service_string(const BIO_ADDR *ap, int numeric);
char *BIO_ADDR_path_string(const BIO_ADDR *ap);
```

**DESCRIPTION**

The **BIO\_ADDR** type is a wrapper around all types of socket addresses that OpenSSL deals with, currently transparently supporting AF\_INET, AF\_INET6 and AF\_UNIX according to what's available on the platform at hand.

**BIO\_ADDR\_new()** creates a new unfilled **BIO\_ADDR**, to be used with routines that will fill it with information, such as **BIO\_accept\_ex()**.

**BIO\_ADDR\_free()** frees a **BIO\_ADDR** created with **BIO\_ADDR\_new()**.

**BIO\_ADDR\_clear()** clears any data held within the provided **BIO\_ADDR** and sets it back to an uninitialised state.

**BIO\_ADDR\_rawmake()** takes a protocol **family**, a byte array of size **whereLen** with an address in network byte order pointed at by **where** and a port number in network byte order in **port** (except for the AF\_UNIX protocol family, where **port** is meaningless and therefore ignored) and populates the given **BIO\_ADDR** with them. In case this creates a **AF\_UNIX BIO\_ADDR**, **whereLen** is expected to be the

length of the path string (not including the terminating NUL, such as the result of a call to **strlen()**).  
Read on about the addresses in "RAW ADDRESSES" below.

**BIO\_ADDR\_family()** returns the protocol family of the given **BIO\_ADDR**. The possible non-error results are one of the constants **AF\_INET**, **AF\_INET6** and **AF\_UNIX**. It will also return **AF\_UNSPEC** if the **BIO\_ADDR** has not been initialised.

**BIO\_ADDR\_rawaddress()** will write the raw address of the given **BIO\_ADDR** in the area pointed at by **p** if **p** is non-NULL, and will set **\*l** to be the amount of bytes the raw address takes up if **l** is non-NULL. A technique to only find out the size of the address is a call with **p** set to **NULL**. The raw address will be in network byte order, most significant byte first. In case this is a **AF\_UNIX** **BIO\_ADDR**, **l** gets the length of the path string (not including the terminating NUL, such as the result of a call to **strlen()**). Read on about the addresses in "RAW ADDRESSES" below.

**BIO\_ADDR\_rawport()** returns the raw port of the given **BIO\_ADDR**. The raw port will be in network byte order.

**BIO\_ADDR\_hostname\_string()** returns a character string with the hostname of the given **BIO\_ADDR**. If **numeric** is 1, the string will contain the numerical form of the address. This only works for **BIO\_ADDR** of the protocol families **AF\_INET** and **AF\_INET6**. The returned string has been allocated on the heap and must be freed with **OPENSSL\_free()**.

**BIO\_ADDR\_service\_string()** returns a character string with the service name of the port of the given **BIO\_ADDR**. If **numeric** is 1, the string will contain the port number. This only works for **BIO\_ADDR** of the protocol families **AF\_INET** and **AF\_INET6**. The returned string has been allocated on the heap and must be freed with **OPENSSL\_free()**.

**BIO\_ADDR\_path\_string()** returns a character string with the path of the given **BIO\_ADDR**. This only works for **BIO\_ADDR** of the protocol family **AF\_UNIX**. The returned string has been allocated on the heap and must be freed with **OPENSSL\_free()**.

## RAW ADDRESSES

Both **BIO\_ADDR\_rawmake()** and **BIO\_ADDR\_rawaddress()** take a pointer to a network byte order address of a specific site. Internally, those are treated as a pointer to **struct in\_addr** (for **AF\_INET**), **struct in6\_addr** (for **AF\_INET6**) or **char \*** (for **AF\_UNIX**), all depending on the protocol family the address is for.

## RETURN VALUES

The string producing functions **BIO\_ADDR\_hostname\_string()**, **BIO\_ADDR\_service\_string()** and **BIO\_ADDR\_path\_string()** will return **NULL** on error and leave an error indication on the OpenSSL

error stack.

All other functions described here return 0 or **NULL** when the information they should return isn't available.

#### **SEE ALSO**

**BIO\_connect(3)**, **BIO\_s\_connect(3)**

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