

**NAME**

BIO\_lookup\_type, BIO\_ADDRINFO, BIO\_ADDRINFO\_next, BIO\_ADDRINFO\_free, BIO\_ADDRINFO\_family, BIO\_ADDRINFO\_socktype, BIO\_ADDRINFO\_protocol, BIO\_ADDRINFO\_address, BIO\_lookup\_ex, BIO\_lookup - BIO\_ADDRINFO type and routines

**SYNOPSIS**

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

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

```
typedef union bio_addrinfo_st BIO_ADDRINFO;
```

```
enum BIO_lookup_type {
    BIO_LOOKUP_CLIENT, BIO_LOOKUP_SERVER
};
```

```
int BIO_lookup_ex(const char *host, const char *service, int lookup_type,
                 int family, int socktype, int protocol, BIO_ADDRINFO **res);
```

```
int BIO_lookup(const char *host, const char *service,
              enum BIO_lookup_type lookup_type,
              int family, int socktype, BIO_ADDRINFO **res);
```

```
const BIO_ADDRINFO *BIO_ADDRINFO_next(const BIO_ADDRINFO *bai);
```

```
int BIO_ADDRINFO_family(const BIO_ADDRINFO *bai);
```

```
int BIO_ADDRINFO_socktype(const BIO_ADDRINFO *bai);
```

```
int BIO_ADDRINFO_protocol(const BIO_ADDRINFO *bai);
```

```
const BIO_ADDR *BIO_ADDRINFO_address(const BIO_ADDRINFO *bai);
```

```
void BIO_ADDRINFO_free(BIO_ADDRINFO *bai);
```

**DESCRIPTION**

The **BIO\_ADDRINFO** type is a wrapper for address information types provided on your platform.

**BIO\_ADDRINFO** normally forms a chain of several that can be picked at one by one.

**BIO\_lookup\_ex()** looks up a specified **host** and **service**, and uses **lookup\_type** to determine what the default address should be if **host** is **NULL**. **family**, **socktype** and **protocol** are used to determine what protocol family, socket type and protocol should be used for the lookup. **family** can be any of AF\_INET, AF\_INET6, AF\_UNIX and AF\_UNSPEC. **socktype** can be SOCK\_STREAM, SOCK\_DGRAM or 0. Specifying 0 indicates that any type can be used. **protocol** specifies a protocol such as IPPROTO\_TCP, IPPROTO\_UDP or IPPROTO\_SCTP. If set to 0 than any protocol can be used. **res** points at a pointer to hold the start of a **BIO\_ADDRINFO** chain.

For the family **AF\_UNIX**, **BIO\_lookup\_ex()** will ignore the **service** parameter and expects the **host** parameter to hold the path to the socket file.

**BIO\_lookup()** does the same as **BIO\_lookup\_ex()** but does not provide the ability to select based on the protocol (any protocol may be returned).

**BIO\_ADDRINFO\_family()** returns the family of the given **BIO\_ADDRINFO**. The result will be one of the constants **AF\_INET**, **AF\_INET6** and **AF\_UNIX**.

**BIO\_ADDRINFO\_socktype()** returns the socket type of the given **BIO\_ADDRINFO**. The result will be one of the constants **SOCK\_STREAM** and **SOCK\_DGRAM**.

**BIO\_ADDRINFO\_protocol()** returns the protocol id of the given **BIO\_ADDRINFO**. The result will be one of the constants **IPPROTO\_TCP** and **IPPROTO\_UDP**.

**BIO\_ADDRINFO\_address()** returns the underlying **BIO\_ADDR** of the given **BIO\_ADDRINFO**.

**BIO\_ADDRINFO\_next()** returns the next **BIO\_ADDRINFO** in the chain from the given one.

**BIO\_ADDRINFO\_free()** frees the chain of **BIO\_ADDRINFO** starting with the given one.

## RETURN VALUES

**BIO\_lookup\_ex()** and **BIO\_lookup()** return 1 on success and 0 when an error occurred, and will leave an error indication on the OpenSSL error stack in that case.

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

## NOTES

The **BIO\_lookup\_ex()** implementation uses the platform provided **getaddrinfo()** function. On Linux it is known that specifying 0 for the protocol will not return any SCTP based addresses when calling **getaddrinfo()**. Therefore, if an SCTP address is required then the **protocol** parameter to **BIO\_lookup\_ex()** should be explicitly set to **IPPROTO\_SCTP**. The same may be true on other platforms.

## HISTORY

The **BIO\_lookup\_ex()** function was added in OpenSSL 1.1.1.

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