

**NAME**

BIO\_get\_ex\_new\_index, BIO\_set\_ex\_data, BIO\_get\_ex\_data, BIO\_set\_app\_data, BIO\_get\_app\_data, DH\_get\_ex\_new\_index, DH\_set\_ex\_data, DH\_get\_ex\_data, DSA\_get\_ex\_new\_index, DSA\_set\_ex\_data, DSA\_get\_ex\_data, EC\_KEY\_get\_ex\_new\_index, EC\_KEY\_set\_ex\_data, EC\_KEY\_get\_ex\_data, ENGINE\_get\_ex\_new\_index, ENGINE\_set\_ex\_data, ENGINE\_get\_ex\_data, EVP\_PKEY\_get\_ex\_new\_index, EVP\_PKEY\_set\_ex\_data, EVP\_PKEY\_get\_ex\_data, RSA\_get\_ex\_new\_index, RSA\_set\_ex\_data, RSA\_get\_ex\_data, RSA\_set\_app\_data, RSA\_get\_app\_data, SSL\_get\_ex\_new\_index, SSL\_set\_ex\_data, SSL\_get\_ex\_data, SSL\_set\_app\_data, SSL\_get\_app\_data, SSL\_CTX\_get\_ex\_new\_index, SSL\_CTX\_set\_ex\_data, SSL\_CTX\_get\_ex\_data, SSL\_CTX\_set\_app\_data, SSL\_CTX\_get\_app\_data, SSL\_SESSION\_get\_ex\_new\_index, SSL\_SESSION\_set\_ex\_data, SSL\_SESSION\_get\_ex\_data, SSL\_SESSION\_set\_app\_data, SSL\_SESSION\_get\_app\_data, UI\_get\_ex\_new\_index, UI\_set\_ex\_data, UI\_get\_ex\_data, UI\_set\_app\_data, UI\_get\_app\_data, X509\_STORE\_CTX\_get\_ex\_new\_index, X509\_STORE\_CTX\_set\_ex\_data, X509\_STORE\_CTX\_get\_ex\_data, X509\_STORE\_CTX\_set\_app\_data, X509\_STORE\_CTX\_get\_app\_data, X509\_STORE\_get\_ex\_new\_index, X509\_STORE\_set\_ex\_data, X509\_STORE\_get\_ex\_data, X509\_get\_ex\_new\_index, X509\_set\_ex\_data, X509\_get\_ex\_data - application-specific data

**SYNOPSIS**

```
#include <openssl/x509.h>
```

```
int TYPE_get_ex_new_index(long argl, void *argp,
                          CRYPTO_EX_new *new_func,
                          CRYPTO_EX_dup *dup_func,
                          CRYPTO_EX_free *free_func);
```

```
int TYPE_set_ex_data(TYPE *d, int idx, void *arg);
```

```
void *TYPE_get_ex_data(const TYPE *d, int idx);
```

```
#define TYPE_set_app_data(TYPE *d, void *arg)
```

```
#define TYPE_get_app_data(TYPE *d)
```

The following functions have been deprecated since OpenSSL 3.0, and can be hidden entirely by defining **OPENSSL\_API\_COMPAT** with a suitable version value, see **openssl\_user\_macros(7)**:

```
int DH_get_ex_new_index(long argl, void *argp, CRYPTO_EX_new *new_func,
                       CRYPTO_EX_dup *dup_func, CRYPTO_EX_free *free_func);
```

```
int DH_set_ex_data(DH *type, int idx, void *arg);
```

```
void *DH_get_ex_data(DH *type, int idx);
```

```

int DSA_get_ex_new_index(long argl, void *argp, CRYPTO_EX_new *new_func,
                        CRYPTO_EX_dup *dup_func, CRYPTO_EX_free *free_func);
int DSA_set_ex_data(DSA *type, int idx, void *arg);
void *DSA_get_ex_data(DSA *type, int idx);
int EC_KEY_get_ex_new_index(long argl, void *argp, CRYPTO_EX_new *new_func,
                           CRYPTO_EX_dup *dup_func, CRYPTO_EX_free *free_func);
int EC_KEY_set_ex_data(EC_KEY *type, int idx, void *arg);
void *EC_KEY_get_ex_data(EC_KEY *type, int idx);
int RSA_get_ex_new_index(long argl, void *argp, CRYPTO_EX_new *new_func,
                        CRYPTO_EX_dup *dup_func, CRYPTO_EX_free *free_func);
int RSA_set_ex_data(RSA *type, int idx, void *arg);
void *RSA_get_ex_data(RSA *type, int idx);
int RSA_set_app_data(RSA *type, void *arg);
void *RSA_get_app_data(RSA *type);
int ENGINE_get_ex_new_index(long argl, void *argp, CRYPTO_EX_new *new_func,
                           CRYPTO_EX_dup *dup_func, CRYPTO_EX_free *free_func);
int ENGINE_set_ex_data(ENGINE *type, int idx, void *arg);
void *ENGINE_get_ex_data(ENGINE *type, int idx);

```

## DESCRIPTION

In the description here, *TYPE* is used a placeholder for any of the OpenSSL datatypes listed in **CRYPTO\_get\_ex\_new\_index(3)**.

All functions with a *TYPE* of **DH**, **DSA**, **RSA** and **EC\_KEY** are deprecated. Applications should instead use **EVP\_PKEY\_set\_ex\_data()**, **EVP\_PKEY\_get\_ex\_data()** and **EVP\_PKEY\_get\_ex\_new\_index()**.

All functions with a *TYPE* of **ENGINE** are deprecated. Applications using engines should be replaced by providers.

These functions handle application-specific data for OpenSSL data structures.

**TYPE\_get\_ex\_new\_index()** is a macro that calls **CRYPTO\_get\_ex\_new\_index()** with the correct **index** value.

**TYPE\_set\_ex\_data()** is a function that calls **CRYPTO\_set\_ex\_data()** with an offset into the opaque exdata part of the *TYPE* object.

**TYPE\_get\_ex\_data()** is a function that calls **CRYPTO\_get\_ex\_data()** with an offset into the opaque exdata part of the *TYPE* object.

For compatibility with previous releases, the exdata index of zero is reserved for "application data." There are two convenience functions for this. **TYPE\_set\_app\_data()** is a macro that invokes **TYPE\_set\_ex\_data()** with **idx** set to zero. **TYPE\_get\_app\_data()** is a macro that invokes **TYPE\_get\_ex\_data()** with **idx** set to zero.

## RETURN VALUES

**TYPE\_get\_ex\_new\_index()** returns a new index on success or -1 on error.

**TYPE\_set\_ex\_data()** returns 1 on success or 0 on error.

**TYPE\_get\_ex\_data()** returns the application data or NULL if an error occurred.

## SEE ALSO

**CRYPTO\_get\_ex\_new\_index(3)**.

## HISTORY

The functions **DH\_get\_ex\_new\_index()**, **DH\_set\_ex\_data()**, **DH\_get\_ex\_data()**, **DSA\_get\_ex\_new\_index()**, **DSA\_set\_ex\_data()**, **DSA\_get\_ex\_data()**, **EC\_KEY\_get\_ex\_new\_index()**, **EC\_KEY\_set\_ex\_data()**, **EC\_KEY\_get\_ex\_data()**, **ENGINE\_get\_ex\_new\_index()**, **ENGINE\_set\_ex\_data()**, **ENGINE\_get\_ex\_data()**, **RSA\_get\_ex\_new\_index()**, **RSA\_set\_ex\_data()**, **RSA\_get\_ex\_data()**, **RSA\_set\_app\_data()** and **RSA\_get\_app\_data()** were deprecated in OpenSSL 3.0.

## COPYRIGHT

Copyright 2015-2021 The OpenSSL Project Authors. All Rights Reserved.

Licensed under the Apache License 2.0 (the "License"). You may not use this file except in compliance with the License. You can obtain a copy in the file LICENSE in the source distribution or at <<https://www.openssl.org/source/license.html>>.