

**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.

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