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. *d* **MUST NOT** be NULL.

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. *d* **MUST NOT** be NULL.

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 in vokes **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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