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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'X509_up_ref.3ossl' command

$ man X509_up_ref.3ossl

X509_NEW(3ossl) OpenSSL X509_NEW(3ossl)

NAME

X509_new, X509_new_ex, X509_free, X509_up_ref, X509_chain_up_ref - X509 certificate ASN1 allocation functions

SYNOPSIS

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

X509 *X509_new(void);
X509 *X509_new_ex(OSSL_LIB_CTX *libctx, const char *propq);
void X509_free(X509 *a);
int X509_up_ref(X509 *a);
STACK_OF(X509) *X509_chain_up_ref(STACK_OF(X509) *x);
```

DESCRIPTION

The X509 ASN1 allocation routines, allocate and free an X509 structure, which represents an X509 certificate.

X509_new_ex() allocates and initializes a X509 structure with a library context of libctx, property query of propq and a reference count of 1. Many X509 functions such as X509_check_purpose(), and X509_verify() use this library context to select which providers supply the fetched

algorithms (SHA1 is used internally). This created X509 object can then be used when loading binary data using d2i_X509().

X509_new() is similar to X509_new_ex() but sets the library context and property query to NULL. This results in the default (NULL) library context being used for any X509 operations requiring algorithm fetches.

X509_free() decrements the reference count of X509 structure a and frees it up if the reference count is zero. If a is NULL nothing is done.

X509_up_ref() increments the reference count of a.

X509_chain_up_ref() increases the reference count of all certificates in chain x and returns a copy of the stack, or an empty stack if a is NULL.

NOTES

The function X509_up_ref() if useful if a certificate structure is being used by several different operations each of which will free it up after use: this avoids the need to duplicate the entire certificate structure.

The function X509_chain_up_ref() doesn't just up the reference count of each certificate. It also returns a copy of the stack, using sk_X509_dup(), but it serves a similar purpose: the returned chain persists after the original has been freed.

RETURN VALUES

If the allocation fails, X509_new() returns NULL and sets an error code that can be obtained by ERR_get_error(3). Otherwise it returns a pointer to the newly allocated structure.

X509_up_ref() returns 1 for success and 0 for failure.

X509_chain_up_ref() returns a copy of the stack or NULL if an error occurred.

SEE ALSO

d2i_X509(3), ERR_get_error(3), X509_CRL_get0_by_serial(3), X509_get0_signature(3), X509_get_ext_d2i(3), X509_get_extension_flags(3), X509_get_pubkey(3), X509_get_subject_name(3), X509_get_version(3), X509_NAME_add_entry_by_txt(3), X509_NAME_ENTRY_get_object(3), X509_NAME_get_index_by_NID(3), X509_NAME_print_ex(3), X509_sign(3), X509V3_get_d2i(3), X509_verify_cert(3)

HISTORY

The function X509_new_ex() was added in OpenSSL 3.0.

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