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### ***Rocky Enterprise Linux 9.2 Manual Pages on command 'X509\_new.3ossl'***

***\$ man X509\_new.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() is 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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