

**NAME**

x509 - X.509 certificate handling

**SYNOPSIS**

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

**DESCRIPTION**

An X.509 certificate is a structured grouping of information about an individual, a device, or anything one can imagine. An X.509 CRL (certificate revocation list) is a tool to help determine if a certificate is still valid. The exact definition of those can be found in the X.509 document from ITU-T, or in RFC3280 from PKIX. In OpenSSL, the type `X509` is used to express such a certificate, and the type `X509_CRL` is used to express a CRL.

A related structure is a certificate request, defined in PKCS#10 from RSA Security, Inc, also reflected in RFC2896. In OpenSSL, the type `X509_REQ` is used to express such a certificate request.

To handle some complex parts of a certificate, there are the types `X509_NAME` (to express a certificate name), `X509_ATTRIBUTE` (to express a certificate attribute), `X509_EXTENSION` (to express a certificate extension) and a few more.

Finally, there's the supertype `X509_INFO`, which can contain a CRL, a certificate and a corresponding private key.

`X509_XXX`, `d2i_X509_XXX`, and `i2d_X509_XXX` functions handle X.509 certificates, with some exceptions, shown below.

`X509_CRL_XXX`, `d2i_X509_CRL_XXX`, and `i2d_X509_CRL_XXX` functions handle X.509 CRLs.

`X509_REQ_XXX`, `d2i_X509_REQ_XXX`, and `i2d_X509_REQ_XXX` functions handle PKCS#10 certificate requests.

`X509_NAME_XXX` functions handle certificate names.

`X509_ATTRIBUTE_XXX` functions handle certificate attributes.

`X509_EXTENSION_XXX` functions handle certificate extensions.

**SEE ALSO**

`X509_NAME_ENTRY_get_object(3)`, `X509_NAME_add_entry_by_txt(3)`,  
`X509_NAME_add_entry_by_NID(3)`, `X509_NAME_print_ex(3)`, `X509_NAME_new(3)`,

**PEM\_X509\_INFO\_read(3), d2i\_X509(3), d2i\_X509\_ALGOR(3), d2i\_X509\_CRL(3),  
d2i\_X509\_NAME(3), d2i\_X509\_REQ(3), d2i\_X509\_SIG(3), crypto(7)**

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