

NAME

`X509_get_pubkey`, `X509_get0_pubkey`, `X509_set_pubkey`, `X509_get_X509_PUBKEY`,
`X509_REQ_get_pubkey`, `X509_REQ_get0_pubkey`, `X509_REQ_set_pubkey`,
`X509_REQ_get_X509_PUBKEY` - get or set certificate or certificate request public key

SYNOPSIS

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

```
EVP_PKEY *X509_get_pubkey(X509 *x);  
EVP_PKEY *X509_get0_pubkey(const X509 *x);  
int X509_set_pubkey(X509 *x, EVP_PKEY *pkey);  
X509_PUBKEY *X509_get_X509_PUBKEY(const X509 *x);  
  
EVP_PKEY *X509_REQ_get_pubkey(X509_REQ *req);  
EVP_PKEY *X509_REQ_get0_pubkey(X509_REQ *req);  
int X509_REQ_set_pubkey(X509_REQ *x, EVP_PKEY *pkey);  
X509_PUBKEY *X509_REQ_get_X509_PUBKEY(X509_REQ *x);
```

DESCRIPTION

X509_get_pubkey() attempts to decode the public key for certificate **x**. If successful it returns the public key as an **EVP_PKEY** pointer with its reference count incremented: this means the returned key must be freed up after use. **X509_get0_pubkey()** is similar except it does **not** increment the reference count of the returned **EVP_PKEY** so it must not be freed up after use.

X509_get_X509_PUBKEY() returns an internal pointer to the **X509_PUBKEY** structure which encodes the certificate of **x**. The returned value must not be freed up after use.

X509_set_pubkey() attempts to set the public key for certificate **x** to **pkey**. The key **pkey** should be freed up after use.

X509_REQ_get_pubkey(), **X509_REQ_get0_pubkey()**, **X509_REQ_set_pubkey()** and **X509_REQ_get_X509_PUBKEY()** are similar but operate on certificate request **req**.

NOTES

The first time a public key is decoded the **EVP_PKEY** structure is cached in the certificate or certificate request itself. Subsequent calls return the cached structure with its reference count incremented to improve performance.

RETURN VALUES

X509_get_pubkey(), **X509_get0_pubkey()**, **X509_get_X509_PUBKEY()**, **X509_REQ_get_pubkey()**

and **X509_REQ_get_X509_PUBKEY()** return a public key or **NULL** if an error occurred.

X509_set_pubkey() and **X509_REQ_set_pubkey()** return 1 for success and 0 for failure.

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_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_new(3)**, **X509_sign(3)**,
X509V3_get_d2i(3), **X509_verify_cert(3)**

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