

**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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