Rocky Enterprise Linux 9.2 Manual Pages on command 'X509_LOOKUP_init.3ossl'

$ man X509_LOOKUP_init.3ossl

X509_LOOKUP(3ossl) OpenSSL X509_LOOKUP(3ossl)

NAME

X509_LOOKUP, X509_LOOKUP_TYPE, X509_LOOKUP_new, X509_LOOKUP_free, X509_LOOKUP_init, X509_LOOKUP_shutdown, X509_LOOKUP_set_method_data, X509_LOOKUP_get_method_data, X509_LOOKUP_ctrl_ex, X509_LOOKUP_ctrl, X509_LOOKUP_load_file_ex, X509_LOOKUP_load_file, X509_LOOKUP_add_dir, X509_LOOKUP_add_store_ex, X509_LOOKUP_add_store, X509_LOOKUP_load_store_ex, X509_LOOKUP_load_store, X509_LOOKUP_get_store, X509_LOOKUP_by_subject_ex, X509_LOOKUP_by_subject, X509_LOOKUP_by_issuer_serial, X509_LOOKUP_by_fingerprint, X509_LOOKUP_by_alias - OpenSSL certificate lookup mechanisms

SYNOPSIS

```
#include <openssl/x509_vfy.h>

typedef x509_lookup_st X509_LOOKUP;

typedef enum X509_LOOKUP_TYPE;

X509_LOOKUP *X509_LOOKUP_new(X509_LOOKUP_METHOD *method);

int X509_LOOKUP_init(X509_LOOKUP *ctx);
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int X509_LOOKUP_shutdown(X509_LOOKUP *ctx);
void X509_LOOKUP_free(X509_LOOKUP *ctx);
int X509_LOOKUP_set_method_data(X509_LOOKUP *ctx, void *data);
void *X509_LOOKUP_get_method_data(const X509_LOOKUP *ctx);
int X509_LOOKUP_ctrl_ex(X509_LOOKUP *ctx, int cmd, const char *argc, long argl,
                        char **ret, OSSL_LIB_CTX *libctx, const char *propq);
int X509_LOOKUP_ctrl(X509_LOOKUP *ctx, int cmd, const char *argc,
                     long argl, char **ret);
int X509_LOOKUP_load_file_ex(X509_LOOKUP *ctx, char *name, long type,
                             OSSL_LIB_CTX *libctx, const char *propq);
int X509_LOOKUP_load_file(X509_LOOKUP *ctx, char *name, long type);
int X509_LOOKUP_load_file_ex(X509_LOOKUP *ctx, char *name, long type,
                             OSSL_LIB_CTX *libctx, const char *propq);
int X509_LOOKUP_add_dir(X509_LOOKUP *ctx, char *name, long type);
int X509_LOOKUP_add_store_ex(X509_LOOKUP *ctx, char *uri, OSSL_LIB_CTX *libctx,
                             const char *propq);
int X509_LOOKUP_add_store(X509_LOOKUP *ctx, char *uri);
int X509_LOOKUP_load_store_ex(X509_LOOKUP *ctx, char *uri, OSSL_LIB_CTX *libctx,
                              const char *propq);
int X509_LOOKUP_load_store(X509_LOOKUP *ctx, char *uri);
X509_STORE *X509_LOOKUP_get_store(const X509_LOOKUP *ctx);
int X509_LOOKUP_by_subject_ex(X509_LOOKUP *ctx, X509_LOOKUP_TYPE type,
                              const X509_NAME *name, X509_OBJECT *ret,
                              OSSL_LIB_CTX *libctx, const char *propq);
int X509_LOOKUP_by_subject(X509_LOOKUP *ctx, X509_LOOKUP_TYPE type,
                           const X509_NAME *name, X509_OBJECT *ret);
int X509_LOOKUP_by_issuer_serial(X509_LOOKUP *ctx, X509_LOOKUP_TYPE type,
                                 const X509_NAME *name,
                                 const ASN1_INTEGER *serial, X509_OBJECT *ret);
int X509_LOOKUP_by_fingerprint(X509_LOOKUP *ctx, X509_LOOKUP_TYPE type,
                               const unsigned char *bytes, int len,
                               X509_OBJECT *ret);
int X509_LOOKUP_by_alias(X509_LOOKUP *ctx, X509_LOOKUP_TYPE type,
```

const char *str, int len, X509_OBJECT *ret);

DESCRIPTION

The X509_LOOKUP structure holds the information needed to look up certificates and CRLs according to an associated X509_LOOKUP_METHOD(3). Multiple X509_LOOKUP instances can be added to an X509_STORE(3) to enable lookup in that store.

X509_LOOKUP_new() creates a new X509_LOOKUP using the given lookup method. It can also be created by calling X509_STORE_add_lookup(3), which will associate a X509_STORE with the lookup mechanism.

X509_LOOKUP_init() initializes the internal state and resources as needed by the given X509_LOOKUP to do its work.

X509_LOOKUP_shutdown() tears down the internal state and resources of the given X509_LOOKUP.

X509_LOOKUP_free() destructs the given X509_LOOKUP.

X509_LOOKUP_set_method_data() and X509_LOOKUP_get_method_data() associates and retrieves a pointer to application data to and from the given X509_LOOKUP, respectively.

X509_LOOKUP_ctrl_ex() is used to set or get additional data to or from a X509_LOOKUP structure or its associated X509_LOOKUP_METHOD(3). The arguments of the control command are passed via argc and argl, its return value via *ret. The library context libctx and property query propq are used when fetching algorithms from providers. The meaning of the arguments depends on the cmd number of the control command. In general, this function is not called directly, but wrapped by a macro call, see below. The control cmds known to OpenSSL are discussed in more depth in "Control Commands".

X509_LOOKUP_ctrl() is similar to X509_LOOKUP_ctrl_ex() but uses NULL for the library context libctx and property query propq.

X509_LOOKUP_load_file_ex() passes a filename to be loaded immediately into the associated X509_STORE. The library context libctx and property query propq are used when fetching algorithms from providers. type indicates what type of object is expected. This can only be used with a lookup using the implementation X509_LOOKUP_file(3).

X509_LOOKUP_load_file() is similar to X509_LOOKUP_load_file_ex() but uses NULL for the library context libctx and property query propq.

X509_LOOKUP_add_dir() passes a directory specification from which certificates and CRLs are loaded on demand into the associated X509_STORE. type indicates what type of object is expected. This can only be used with a lookup using the implementation X509_LOOKUP_hash_dir(3).

X509_LOOKUP_add_store_ex() passes a URI for a directory-like structure from which containers with certificates and CRLs are loaded on demand into the associated X509_STORE. The library context libctx and property query propq are used when fetching algorithms from providers.

X509_LOOKUP_add_store() is similar to X509_LOOKUP_add_store_ex() but uses NULL for the library context libctx and property query propq.

X509_LOOKUP_load_store_ex() passes a URI for a single container from which certificates and CRLs are immediately loaded into the associated X509_STORE. The library context libctx and property query propq are used when fetching algorithms from providers. These functions can only be used with a lookup using the implementation X509_LOOKUP_store(3).

X509_LOOKUP_load_store() is similar to X509_LOOKUP_load_store_ex() but uses NULL for the library context libctx and property query propq.

X509_LOOKUP_load_file_ex(), X509_LOOKUP_load_file(), X509_LOOKUP_add_dir(), X509_LOOKUP_add_store_ex() X509_LOOKUP_add_store(), X509_LOOKUP_load_store_ex() and X509_LOOKUP_load_store() are implemented as macros that use X509_LOOKUP_ctrl().

X509_LOOKUP_by_subject_ex(), X509_LOOKUP_by_subject(), X509_LOOKUP_by_issuer_serial(), X509_LOOKUP_by_fingerprint(), and X509_LOOKUP_by_alias() look up certificates and CRLs in the X509_STORE(3) associated with the X509_LOOKUP using different criteria, where the looked up object is stored in ret. Some of the underlying X509_LOOKUP_METHODs will also cache objects matching the criteria in the associated X509_STORE, which makes it possible to handle cases where the criteria have more than one hit.

Control Commands

The X509_LOOKUP_METHODs built into OpenSSL recognize the following X509_LOOKUP_ctrl() cmds:

X509_L_FILE_LOAD

This is the command that X509_LOOKUP_load_file_ex() and X509_LOOKUP_load_file() use. The filename is passed in argc, and the type in argl.

X509_L_ADD_DIR

This is the command that X509_LOOKUP_add_dir() uses. The directory specification is passed in argc, and the type in argl.

X509_L_ADD_STORE

This is the command that X509_LOOKUP_add_store_ex() and X509_LOOKUP_add_store() use. The URI is passed in argc.

X509_L_LOAD_STORE

This is the command that X509_LOOKUP_load_store_ex() and X509_LOOKUP_load_store() use. The URI is passed in argc.

RETURN VALUES

X509_LOOKUP_new() returns a X509_LOOKUP pointer when successful, or NULL on error.

X509_LOOKUP_init() and X509_LOOKUP_shutdown() return 1 on success, or 0 on error.

X509_LOOKUP_ctrl() returns -1 if the X509_LOOKUP doesn't have an associated X509_LOOKUP_METHOD, or 1 if the doesn't have a control function. Otherwise, it returns what the control function in the X509_LOOKUP_METHOD returns, which is usually 1 on success and 0 in error.

X509_LOOKUP_get_store() returns a X509_STORE pointer if there is one, otherwise NULL.

X509_LOOKUP_by_subject_ex(), X509_LOOKUP_by_subject(), X509_LOOKUP_by_issuer_serial(), X509_LOOKUP_by_fingerprint(), and X509_LOOKUP_by_alias() all return 0 if there is no X509_LOOKUP_METHOD or that method doesn't implement the corresponding function.

Otherwise, it returns what the corresponding function in the

X509_LOOKUP_METHOD returns, which is usually 1 on success and 0 in error.

SEE ALSO

X509_LOOKUP_METHOD(3), X509_STORE(3)

HISTORY

The functions X509_LOOKUP_by_subject_ex() and X509_LOOKUP_ctrl_ex() were added in OpenSSL 3.0.

The macros X509_LOOKUP_load_file_ex(), X509_LOOKUP_load_store_ex() and 509_LOOKUP_add_store_ex() were added in OpenSSL 3.0.

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