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X509_LOOKUP_METH_NEW(3oss1) OpenSSL X509_LOOKUP_METH_NEW(3oss1)

NAME

X509_LOOKUP_METHOD, X509_LOOKUP_meth_new, X509_LOOKUP_meth_free,
X509_LOOKUP_meth_set_new_item, X509_LOOKUP_meth_get_new_item,
X509_LOOKUP_meth_set_free, X509_LOOKUP_meth_get_free,
X509_LOOKUP_meth_set_init, X509_LOOKUP_meth_get_init,
X509_LOOKUP_meth_set_shutdown, X509_LOOKUP_meth_get_shutdown,
X509_LOOKUP_ctrl_fn, X509_LOOKUP_meth_set_ctrl,
X509_LOOKUP_meth_get_ctrl, X509_LOOKUP_get_by_subject_fn,
X509_LOOKUP_meth_set_get_by_subject,
X509_LOOKUP_meth_get_get_by_subject,
X509_LOOKUP_get_by_issuer_serial_fn,
X509_LOOKUP_meth_set_get_by_issuer_serial,
X509_LOOKUP_meth_get_get_by_issuer_serial,
X509_LOOKUP_get_by_fingerprint_fn,
X509_LOOKUP_meth_set_get_by_fingerprint,
X509_LOOKUP_meth_get_get_by_fingerprint, X509_LOOKUP_get_by_alias_fn,
X509_LOOKUP_meth_set_get_by_alias, X509_LOOKUP_meth_get_get_by_alias,
X509_OBJECT_set1_X509, X509_OBJECT_set1_X509_CRL - Routines to build up
X509_LOOKUP methods

SYNOPSIS

```
#include <openssl/x509_vfy.h>  
  
typedef x509_lookup_method_st X509_LOOKUP_METHOD;
```

```

X509_LOOKUP_METHOD *X509_LOOKUP_meth_new(const char *name);
void X509_LOOKUP_meth_free(X509_LOOKUP_METHOD *method);
int X509_LOOKUP_meth_set_new_item(X509_LOOKUP_METHOD *method,
    int (*new_item) (X509_LOOKUP *ctx));
int (*X509_LOOKUP_meth_get_new_item(const X509_LOOKUP_METHOD* method))
    (X509_LOOKUP *ctx);
int X509_LOOKUP_meth_set_free(X509_LOOKUP_METHOD *method,
    void (*free) (X509_LOOKUP *ctx));
void (*X509_LOOKUP_meth_get_free(const X509_LOOKUP_METHOD* method))
    (X509_LOOKUP *ctx);
int X509_LOOKUP_meth_set_init(X509_LOOKUP_METHOD *method,
    int (*init) (X509_LOOKUP *ctx));
int (*X509_LOOKUP_meth_get_init(const X509_LOOKUP_METHOD* method))
    (X509_LOOKUP *ctx);
int X509_LOOKUP_meth_set_shutdown(X509_LOOKUP_METHOD *method,
    int (*shutdown) (X509_LOOKUP *ctx));
int (*X509_LOOKUP_meth_get_shutdown(const X509_LOOKUP_METHOD* method))
    (X509_LOOKUP *ctx);
typedef int (*X509_LOOKUP_ctrl_fn)(X509_LOOKUP *ctx, int cmd, const char *argc,
    long argl, char **ret);
int X509_LOOKUP_meth_set_ctrl(X509_LOOKUP_METHOD *method,
    X509_LOOKUP_ctrl_fn ctrl_fn);
X509_LOOKUP_ctrl_fn X509_LOOKUP_meth_get_ctrl(const X509_LOOKUP_METHOD *method);
typedef int (*X509_LOOKUP_get_by_subject_fn)(X509_LOOKUP *ctx,
    X509_LOOKUP_TYPE type,
    const X509_NAME *name,
    X509_OBJECT *ret);
int X509_LOOKUP_meth_set_get_by_subject(X509_LOOKUP_METHOD *method,
    X509_LOOKUP_get_by_subject_fn fn);
X509_LOOKUP_get_by_subject_fn X509_LOOKUP_meth_get_get_by_subject(
    const X509_LOOKUP_METHOD *method);
typedef int (*X509_LOOKUP_get_by_issuer_serial_fn)(X509_LOOKUP *ctx,
    X509_LOOKUP_TYPE type,

```

```

        const X509_NAME *name,
        const ASN1_INTEGER *serial,
        X509_OBJECT *ret);

int X509_LOOKUP_meth_set_get_by_issuer_serial(
    X509_LOOKUP_METHOD *method, X509_LOOKUP_get_by_issuer_serial_fn fn);
X509_LOOKUP_get_by_issuer_serial_fn X509_LOOKUP_meth_get_get_by_issuer_serial(
    const X509_LOOKUP_METHOD *method);

typedef int (*X509_LOOKUP_get_by_fingerprint_fn)(X509_LOOKUP *ctx,
        X509_LOOKUP_TYPE type,
        const unsigned char* bytes,
        int len,
        X509_OBJECT *ret);

int X509_LOOKUP_meth_set_get_by_fingerprint(X509_LOOKUP_METHOD *method,
    X509_LOOKUP_get_by_fingerprint_fn fn);
X509_LOOKUP_get_by_fingerprint_fn X509_LOOKUP_meth_get_get_by_fingerprint(
    const X509_LOOKUP_METHOD *method);

typedef int (*X509_LOOKUP_get_by_alias_fn)(X509_LOOKUP *ctx,
        X509_LOOKUP_TYPE type,
        const char *str,
        int len,
        X509_OBJECT *ret);

int X509_LOOKUP_meth_set_get_by_alias(X509_LOOKUP_METHOD *method,
    X509_LOOKUP_get_by_alias_fn fn);
X509_LOOKUP_get_by_alias_fn X509_LOOKUP_meth_get_get_by_alias(
    const X509_LOOKUP_METHOD *method);

int X509_OBJECT_set1_X509(X509_OBJECT *a, X509 *obj);
int X509_OBJECT_set1_X509_CRL(X509_OBJECT *a, X509_CRL *obj);

```

DESCRIPTION

The X509_LOOKUP_METHOD type is a structure used for the implementation of new X509_LOOKUP types. It provides a set of functions used by OpenSSL for the implementation of various X509 and X509_CRL lookup capabilities. One instance of an X509_LOOKUP_METHOD can be associated to many instantiations of an X509_LOOKUP structure.

X509_LOOKUP_meth_new() creates a new X509_LOOKUP_METHOD structure. It should be given a human-readable string containing a brief description of the lookup method.

X509_LOOKUP_meth_free() destroys a X509_LOOKUP_METHOD structure.

X509_LOOKUP_get_new_item() and X509_LOOKUP_set_new_item() get and set the function that is called when an X509_LOOKUP object is created with X509_LOOKUP_new(). If an X509_LOOKUP_METHOD requires any per-X509_LOOKUP specific data, the supplied new_item function should allocate this data and invoke X509_LOOKUP_set_method_data(3).

X509_LOOKUP_get_free() and X509_LOOKUP_set_free() get and set the function that is used to free any method data that was allocated and set from within new_item function.

X509_LOOKUP_meth_get_init() and X509_LOOKUP_meth_set_init() get and set the function that is used to initialize the method data that was set with X509_LOOKUP_set_method_data(3) as part of the new_item routine.

X509_LOOKUP_meth_get_shutdown() and X509_LOOKUP_meth_set_shutdown() get and set the function that is used to shut down the method data whose state was previously initialized in the init function.

X509_LOOKUP_meth_get_ctrl() and X509_LOOKUP_meth_set_ctrl() get and set a function to be used to handle arbitrary control commands issued by X509_LOOKUP_ctrl(). The control function is given the X509_LOOKUP ctx, along with the arguments passed by X509_LOOKUP_ctrl. cmd is an arbitrary integer that defines some operation. argc is a pointer to an array of characters. argl is an integer. ret, if set, points to a location where any return data should be written to. How argc and argl are used depends entirely on the control function.

X509_LOOKUP_set_get_by_subject(),

X509_LOOKUP_set_get_by_issuer_serial(),

X509_LOOKUP_set_get_by_fingerprint(), X509_LOOKUP_set_get_by_alias()

set the functions used to retrieve an X509 or X509_CRL object by the object's subject, issuer, fingerprint, and alias respectively. These functions are given the X509_LOOKUP context, the type of the

X509_OBJECT being requested, parameters related to the lookup, and an

X509_OBJECT that will receive the requested object.

Implementations must add objects they find to the X509_STORE object using X509_STORE_add_cert() or X509_STORE_add_crl(). This increments its reference count. However, the X509_STORE_CTX_get_by_subject() function also increases the reference count which leads to one too many references being held. Therefore, applications should additionally call X509_free() or X509_CRL_free() to decrement the reference count again.

Implementations should also use either X509_OBJECT_set1_X509() or X509_OBJECT_set1_X509_CRL() to set the result. Note that this also increments the result's reference count.

Any method data that was created as a result of the new_item function set by X509_LOOKUP_meth_set_new_item() can be accessed with X509_LOOKUP_get_method_data(3). The X509_STORE object that owns the X509_LOOKUP may be accessed with X509_LOOKUP_get_store(3). Successful lookups should return 1, and unsuccessful lookups should return 0.

X509_LOOKUP_get_get_by_subject(),

X509_LOOKUP_get_get_by_issuer_serial(),

X509_LOOKUP_get_get_by_fingerprint(), X509_LOOKUP_get_get_by_alias()

retrieve the function set by the corresponding setter.

RETURN VALUES

The X509_LOOKUP_meth_set functions return 1 on success or 0 on error.

The X509_LOOKUP_meth_get functions return the corresponding function pointers.

SEE ALSO

X509_STORE_new(3), SSL_CTX_set_cert_store(3)

HISTORY

The functions described here were added in OpenSSL 1.1.0i.

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X509_LOOKUP_METH_NEW(3ossl)