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## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'X509\_LOOKUP\_meth\_set\_get\_by\_alias.3oss1' command**

**`$ man X509_LOOKUP_meth_set_get_by_alias.3oss1`**

X509\_LOOKUP\_METHOD\_NEW(3oss1)    OpenSSL    X509\_LOOKUP\_METHOD\_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)