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

\$ man CMS_RecipientInfo_type.3ossl

CMS_GET0_RECIPIENTINFOS(3ossl) OpenSSL CMS_GET0_RECIPIENTINFOS(3ossl)

NAME

CMS_get0_RecipientInfos, CMS_RecipientInfo_type,
CMS_RecipientInfo_ktri_get0_signer_id, CMS_RecipientInfo_ktri_cert_cmp,
CMS_RecipientInfo_set0_pkey, CMS_RecipientInfo_kekri_get0_id,
CMS_RecipientInfo_kari_set0_pkey_and_peer,
CMS_RecipientInfo_kari_set0_pkey, CMS_RecipientInfo_kekri_id_cmp,
CMS_RecipientInfo_set0_key, CMS_RecipientInfo_decrypt,
CMS_RecipientInfo_encrypt - CMS envelopedData RecipientInfo routines

SYNOPSIS

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

```
STACK_OF(CMS_RecipientInfo) *CMS_get0_RecipientInfos(CMS_ContentInfo *cms);
```

```
int CMS_RecipientInfo_type(CMS_RecipientInfo *ri);
```

```
int CMS_RecipientInfo_ktri_get0_signer_id(CMS_RecipientInfo *ri,
```

```

        ASN1_OCTET_STRING **keyid,
        X509_NAME **issuer,
        ASN1_INTEGER **sno);

int CMS_RecipientInfo_ktri_cert_cmp(CMS_RecipientInfo *ri, X509 *cert);
int CMS_RecipientInfo_set0_pkey(CMS_RecipientInfo *ri, EVP_PKEY *pkey);
int CMS_RecipientInfo_kari_set0_pkey_and_peer(CMS_RecipientInfo *ri,
        EVP_PKEY *pk, X509 *peer);
int CMS_RecipientInfo_kari_set0_pkey(CMS_RecipientInfo *ri, EVP_PKEY *pk);
int CMS_RecipientInfo_kekri_get0_id(CMS_RecipientInfo *ri, X509_ALGOR **palg,
        ASN1_OCTET_STRING **pid,
        ASN1_GENERALIZEDTIME **pdate,
        ASN1_OBJECT **potheid,
        ASN1_TYPE **pothertype);
int CMS_RecipientInfo_kekri_id_cmp(CMS_RecipientInfo *ri,
        const unsigned char *id, size_t idlen);
int CMS_RecipientInfo_set0_key(CMS_RecipientInfo *ri,
        unsigned char *key, size_t keylen);

int CMS_RecipientInfo_decrypt(CMS_ContentInfo *cms, CMS_RecipientInfo *ri);
int CMS_RecipientInfo_encrypt(CMS_ContentInfo *cms, CMS_RecipientInfo *ri);

```

DESCRIPTION

The function `CMS_get0_RecipientInfos()` returns all the `CMS_RecipientInfo` structures associated with a CMS EnvelopedData structure.

`CMS_RecipientInfo_type()` returns the type of `CMS_RecipientInfo` structure `ri`. It will currently return `CMS_RECIPINFO_TRANS`, `CMS_RECIPINFO_AGREE`, `CMS_RECIPINFO_KEK`, `CMS_RECIPINFO_PASS`, or `CMS_RECIPINFO_OTHER`.

`CMS_RecipientInfo_ktri_get0_signer_id()` retrieves the certificate recipient identifier associated with a specific `CMS_RecipientInfo`

structure `ri`, which must be of type `CMS_RECIPINFO_TRANS`. Either the keyidentifier will be set in `keyid` or both issuer name and serial number in `issuer` and `sno`.

`CMS_RecipientInfo_ktri_cert_cmp()` compares the certificate `cert` against the `CMS_RecipientInfo` structure `ri`, which must be of type `CMS_RECIPINFO_TRANS`. It returns zero if the comparison is successful and non zero if not.

`CMS_RecipientInfo_set0_pkey()` associates the private key `pkey` with the `CMS_RecipientInfo` structure `ri`, which must be of type `CMS_RECIPINFO_TRANS`.

`CMS_RecipientInfo_kari_set0_pkey_and_peer()` associates the private key `pkey` and peer certificate `peer` with the `CMS_RecipientInfo` structure `ri`, which must be of type `CMS_RECIPINFO_AGREE`.

`CMS_RecipientInfo_kari_set0_pkey()` associates the private key `pkey` with the `CMS_RecipientInfo` structure `ri`, which must be of type `CMS_RECIPINFO_AGREE`.

`CMS_RecipientInfo_kekri_get0_id()` retrieves the key information from the `CMS_RecipientInfo` structure `ri` which must be of type `CMS_RECIPINFO_KEK`. Any of the remaining parameters can be `NULL` if the application is not interested in the value of a field. Where a field is optional and absent `NULL` will be written to the corresponding parameter. The `keyEncryptionAlgorithm` field is written to `palg`, the `keyIdentifier` field is written to `pid`, the `date` field if present is written to `pdate`, if the other field is present the components `keyAttrId` and `keyAttr` are written to parameters `pothetid` and `pothertype`.

`CMS_RecipientInfo_kekri_id_cmp()` compares the ID in the `id` and `idlen`

parameters against the keyIdentifier CMS_RecipientInfo structure ri, which must be of type CMS_RECIPINFO_KEK. It returns zero if the comparison is successful and non zero if not.

CMS_RecipientInfo_set0_key() associates the symmetric key key of length keylen with the CMS_RecipientInfo structure ri, which must be of type CMS_RECIPINFO_KEK.

CMS_RecipientInfo_decrypt() attempts to decrypt CMS_RecipientInfo structure ri in structure cms. A key must have been associated with the structure first.

CMS_RecipientInfo_encrypt() attempts to encrypt CMS_RecipientInfo structure ri in structure cms. A key must have been associated with the structure first and the content encryption key must be available: for example by a previous call to CMS_RecipientInfo_decrypt().

NOTES

The main purpose of these functions is to enable an application to lookup recipient keys using any appropriate technique when the simpler method of CMS_decrypt() is not appropriate.

In typical usage and application will retrieve all CMS_RecipientInfo structures using CMS_get0_RecipientInfos() and check the type of each using CMS_RecipientInfo_type(). Depending on the type the CMS_RecipientInfo structure can be ignored or its key identifier data retrieved using an appropriate function. Then if the corresponding secret or private key can be obtained by any appropriate means it can then associated with the structure and CMS_RecipientInfo_decrypt() called. If successful CMS_decrypt() can be called with a NULL key to decrypt the enveloped content.

The CMS_RecipientInfo_encrypt() can be used to add a new recipient to

an existing enveloped data structure. Typically an application will first decrypt an appropriate CMS_RecipientInfo structure to make the content encryption key available, it will then add a new recipient using a function such as CMS_add1_recipient_cert() and finally encrypt the content encryption key using CMS_RecipientInfo_encrypt().

RETURN VALUES

CMS_get0_RecipientInfos() returns all CMS_RecipientInfo structures, or NULL if an error occurs.

CMS_RecipientInfo_ktri_get0_signer_id(), CMS_RecipientInfo_set0_pkey(), CMS_RecipientInfo_kekri_get0_id(), CMS_RecipientInfo_set0_key() and CMS_RecipientInfo_decrypt() return 1 for success or 0 if an error occurs. CMS_RecipientInfo_encrypt() return 1 for success or 0 if an error occurs.

CMS_RecipientInfo_ktri_cert_cmp() and CMS_RecipientInfo_kekri_cmp() return 0 for a successful comparison and non zero otherwise.

Any error can be obtained from ERR_get_error(3).

SEE ALSO

ERR_get_error(3), CMS_decrypt(3)

HISTORY

CMS_RecipientInfo_kari_set0_pkey_and_peer and CMS_RecipientInfo_kari_set0_pkey were added in OpenSSL 3.0.

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