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## Red Hat Enterprise Linux Release 9.2 Manual Pages on 'CMS\_RecipientInfo\_kari\_set0\_pkey\_and\_peer.3ossl' command

```
$ man CMS_RecipientInfo_kari_set0_pkey_and_peer.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 **pothetid,
        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 key identifier 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 potherid 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 encrypt 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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