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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'OSSL_CRMF_MSG_create_popo.3oss1' command

```
$ man OSSL_CRMF_MSG_create_popo.3oss1
```

```
OSSL_CRMF_MSG_SET0_VALIDITY(3oss1) OpenSSL OSSL_CRMF_MSG_SET0_VALIDITY(3oss1)
```

NAME

OSSL_CRMF_MSG_set0_validity, OSSL_CRMF_MSG_set_certReqId,
OSSL_CRMF_CERTTEMPLATE_fill, OSSL_CRMF_MSG_set0_extensions,
OSSL_CRMF_MSG_push0_extension, OSSL_CRMF_MSG_create_popo,
OSSL_CRMF_MSGS_verify_popo - functions populating and verifying CRMF
CertReqMsg structures

SYNOPSIS

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

```
int OSSL_CRMF_MSG_set0_validity(OSSL_CRMF_MSG *crm,  
                               ASN1_TIME *notBefore, ASN1_TIME *notAfter);
```

```
int OSSL_CRMF_MSG_set_certReqId(OSSL_CRMF_MSG *crm, int rid);
```

```
int OSSL_CRMF_CERTTEMPLATE_fill(OSSL_CRMF_CERTTEMPLATE *tmpl,  
                                EVP_PKEY *pubkey,  
                                const X509_NAME *subject,  
                                const X509_NAME *issuer,  
                                const ASN1_INTEGER *serial);
```

```
int OSSL_CRMF_MSG_set0_extensions(OSSL_CRMF_MSG *crm, X509_EXTENSIONS *exts);
```

```
int OSSL_CRMF_MSG_push0_extension(OSSL_CRMF_MSG *crm, X509_EXTENSION *ext);
```

```
int OSSL_CRMF_MSG_create_popo(int meth, OSSL_CRMF_MSG *crm,  
    EVP_PKEY *pkey, const EVP_MD *digest,  
    OSSL_LIB_CTX *libctx, const char *propq);
```

```
int OSSL_CRMF_MSGS_verify_popo(const OSSL_CRMF_MSGS *reqs,  
    int rid, int acceptRAVerified,  
    OSSL_LIB_CTX *libctx, const char *propq);
```

DESCRIPTION

`OSSL_CRMF_MSG_set0_validity()` sets the `notBefore` and `notAfter` fields as validity constraints in the `certTemplate` of `crm`. Any of the `notBefore` and `notAfter` parameters may be `NULL`, which means no constraint for the respective field. On success ownership of `notBefore` and `notAfter` is transferred to `crm`.

`OSSL_CRMF_MSG_set_certReqId()` sets `rid` as the `certReqId` of `crm`.

`OSSL_CRMF_CERTTEMPLATE_fill()` sets those fields of the `certTemplate` `tmpl` for which non-`NULL` values are provided: `pubkey`, `subject`, `issuer`, and/or `serial`. X.509 extensions may be set using `OSSL_CRMF_MSG_set0_extensions()`. On success the reference counter of the `pubkey` (if given) is incremented, while the `subject`, `issuer`, and `serial` structures (if given) are copied.

`OSSL_CRMF_MSG_set0_extensions()` sets `exts` as the extensions in the `certTemplate` of `crm`. Frees any pre-existing ones and consumes `exts`.

`OSSL_CRMF_MSG_push0_extension()` pushes the X509 extension `ext` to the extensions in the `certTemplate` of `crm`. Consumes `ext`.

OSSL_CRMF_MSG_create_popo() creates and sets the Proof-of-Possession (POPO) according to the method meth in crm. The library context libctx and property query string propq, may be NULL to select the defaults.

In case the method is OSSL_CRMF_POPO_SIGNATURE the POPO is calculated using the private key pkey and the digest method digest, where the digest argument is ignored if pkey is of a type (such as Ed25519 and Ed448) that is implicitly associated with a digest algorithm.

meth can be one of the following:

- ? OSSL_CRMF_POPO_NONE - RFC 4211, section 4, POP field omitted. CA/RA uses out-of-band method to verify POP. Note that servers may fail in this case, resulting for instance in HTTP error code 500 (Internal error).
- ? OSSL_CRMF_POPO_RAVERIFIED - RFC 4211, section 4, explicit indication that the RA has already verified the POP.
- ? OSSL_CRMF_POPO_SIGNATURE - RFC 4211, section 4.1, only case 3 supported so far.
- ? OSSL_CRMF_POPO_KEYENC - RFC 4211, section 4.2, only indirect method (subsequentMessage/enccert) supported, challenge-response exchange (challengeResp) not yet supported.
- ? OSSL_CRMF_POPO_KEYAGREE - RFC 4211, section 4.3, not yet supported.

OSSL_CRMF_MSGS_verify_popo verifies the Proof-of-Possession of the request with the given rid in the list of reqs. Optionally accepts RAVerified. It can make use of the library context libctx and property query string propq.

RETURN VALUES

All functions return 1 on success, 0 on error.

SEE ALSO

RFC 4211

HISTORY

The OpenSSL CRMF support was added in OpenSSL 3.0.

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