

**NAME**

OSSL\_CRMF\_pbm\_new, OSSL\_CRMF\_pbmp\_new - functions for producing Password-Based MAC (PBM)

**SYNOPSIS**

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

```
int OSSL_CRMF_pbm_new(OSSL_LIB_CTX *libctx, const char *propq,
                    const OSSL_CRMF_PBMPARAMETER *pbmp,
                    const unsigned char *msg, size_t msglen,
                    const unsigned char *sec, size_t seclen,
                    unsigned char **mac, size_t *maclen);
```

```
OSSL_CRMF_PBMPARAMETER *OSSL_CRMF_pbmp_new(OSSL_LIB_CTX *libctx, size_t saltlen,
                                           int owfnid, size_t itercnt,
                                           int macnid);
```

**DESCRIPTION**

**OSSL\_CRMF\_pbm\_new()** generates a PBM (Password-Based MAC) based on given PBM parameters *pbmp*, message *msg*, and secret *sec*, along with the respective lengths *msglen* and *seclen*. The optional library context *libctx* and *propq* parameters may be used to influence the selection of the MAC algorithm referenced in the *pbmp*; see "ALGORITHM FETCHING" in **crypto(7)** for further information. On success writes the address of the newly allocated MAC via the *mac* reference parameter and writes the length via the *maclen* reference parameter unless it is NULL.

**OSSL\_CRMF\_pbmp\_new()** initializes and returns a new **PBMParameter** structure with a new random salt of given length *saltlen*, OWF (one-way function) NID *owfnid*, OWF iteration count *itercnt*, and MAC NID *macnid*. The library context *libctx* parameter may be used to select the provider for the random number generation (DRBG) and may be NULL for the default.

**NOTES**

The algorithms for the OWF (one-way function) and for the MAC (message authentication code) may be any with a NID defined in *<openssl/objects.h>*. As specified by RFC 4210, these should include NID\_hmac\_sha1.

RFC 4210 recommends that the salt SHOULD be at least 8 bytes (64 bits) long, where 16 bytes is common.

The iteration count must be at least 100, as stipulated by RFC 4211, and is limited to at most 100000 to avoid DoS through manipulated or otherwise malformed input.

**RETURN VALUES**

**OSSL\_CRMF\_pbm\_new()** returns 1 on success, 0 on error.

**OSSL\_CRMF\_pbmp\_new()** returns a new and initialized OSSL\_CRMF\_PBMPARAMETER structure, or NULL on error.

**EXAMPLES**

```
OSSL_CRMF_PBMPARAMETER *pbm = NULL;
unsigned char *msg = "Hello";
unsigned char *sec = "SeCrEt";
unsigned char *mac = NULL;
size_t maclen;

if ((pbm = OSSL_CRMF_pbmp_new(16, NID_sha256, 500, NID_hmac_sha1) == NULL))
    goto err;
if (!OSSL_CRMF_pbm_new(pbm, msg, 5, sec, 6, &mac, &maclen))
    goto err;
```

**SEE ALSO**

RFC 4211 section 4.4

**HISTORY**

The OpenSSL CRMF support was added in OpenSSL 3.0.

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