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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'EVP_PBE_alg_add.3ossl' command

$ man EVP_PBE_alg_add.3ossl

EVP_PBE_CIPHERINIT(3ossl) OpenSSL EVP_PBE_CIPHERINIT(3ossl)

NAME

EVP_PBE_CipherInit, EVP_PBE_CipherInit_ex, EVP_PBE_find, EVP_PBE_find_ex, EVP_PBE_alg_add_type, EVP_PBE_alg_add - Password based encryption routines

SYNOPSIS

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

int EVP_PBE_CipherInit(ASN1_OBJECT *pbe_obj, const char *pass, int passlen,
                       ASN1_TYPE *param, EVP_CIPHER_CTX *ctx, int en_de);
int EVP_PBE_CipherInit_ex(ASN1_OBJECT *pbe_obj, const char *pass, int passlen,
                          ASN1_TYPE *param, EVP_CIPHER_CTX *ctx, int en_de,
                          OSSL_LIB_CTX *libctx, const char *propq);

int EVP_PBE_find(int type, int pbe_nid, int *pcnid, int *pmnid,
                 EVP_PBE_KEYGEN **pkeygen);
int EVP_PBE_find_ex(int type, int pbe_nid, int *pcnid, int *pmnid,
                    EVP_PBE_KEYGEN **pkeygen, EVP_PBE_KEYGEN_EX **keygen_ex);

int EVP_PBE_alg_add_type(int pbe_type, int pbe_nid, int cipher_nid,
                         int md_nid, EVP_PBE_KEYGEN *keygen);
```

```
int EVP_PBE_alg_add(int nid, const EVP_CIPHER *cipher, const EVP_MD *md,
                    EVP_PBE_KEYGEN *keygen);
```

DESCRIPTION

PBE operations

EVP_PBE_CipherInit() and EVP_PBE_CipherInit_ex() initialise an EVP_CIPHER_CTX ctx for encryption (en_de=1) or decryption (en_de=0) using the password pass of length passlen. The PBE algorithm type and parameters are extracted from an OID pbe_obj and parameters param.

EVP_PBE_CipherInit_ex() also allows the application to specify a library context libctx and property query propq to select appropriate algorithm implementations.

PBE algorithm search

EVP_PBE_find() and EVP_PBE_find_ex() search for a matching algorithm using two parameters:

1. An algorithm type type which can be:

? EVP_PBE_TYPE_OUTER - A PBE algorithm

? EVP_PBE_TYPE_PRF - A pseudo-random function

? EVP_PBE_TYPE_KDF - A key derivation function

2. A pbe_nid which can represent the algorithm identifier with parameters e.g. NID_pbeWithSHA1AndRC2_CBC or an algorithm class e.g. NID_pbes2.

They return the algorithm's cipher ID pcnid, digest ID pmnid and a key generation function for the algorithm pkeygen. EVP_PBE_CipherInit_ex() also returns an extended key generation function keygen_ex which takes

a library context and property query.

If a NULL is supplied for any of pcnid, pmnid, pkeygen or pkeygen_ex then this parameter is not returned.

PBE algorithm add

EVP_PBE_alg_add_type() and EVP_PBE_alg_add() add an algorithm to the list of known algorithms. Their parameters have the same meaning as for EVP_PBE_find() and EVP_PBE_find_ex() functions.

NOTES

The arguments pbe_obj and param to EVP_PBE_CipherInit() and EVP_PBE_CipherInit_ex() together form an X509_ALGOR and can often be extracted directly from this structure.

RETURN VALUES

Return value is 1 for success and 0 if an error occurred.

SEE ALSO

PKCS5_PBE_keyivgen(3), PKCS12_PBE_keyivgen_ex(3), PKCS5_v2_PBE_keyivgen_ex(3), PKCS12_pbe_crypt_ex(3), PKCS12_create_ex(3)

HISTORY

EVP_PBE_CipherInit_ex() and EVP_PBE_find_ex() were added in OpenSSL 3.0.

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