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

$ man EVP_ASYM_CIPHER_is_a.3ossl

EVP_ASYM_CIPHER_FREE(3ossl) OpenSSL EVP_ASYM_CIPHER_FREE(3ossl)

NAME

EVP_ASYM_CIPHER_fetch, EVP_ASYM_CIPHER_free, EVP_ASYM_CIPHER_up_ref,

EVP_ASYM_CIPHER_is_a, EVP_ASYM_CIPHER_get0_provider,

EVP_ASYM_CIPHER_do_all_provided, EVP_ASYM_CIPHER_names_do_all,

EVP_ASYM_CIPHER_get0_name, EVP_ASYM_CIPHER_get0_description,

EVP_ASYM_CIPHER_gettable_ctx_params,

EVP_ASYM_CIPHER_settable_ctx_params - Functions to manage

EVP_ASYM_CIPHER algorithm objects

SYNOPSIS

```
#include <openssl/evp.h>
EVP_ASYM_CIPHER *EVP_ASYM_CIPHER_fetch(OSSL_LIB_CTX *ctx, const char *algorithm,
                                       const char *properties);
void EVP_ASYM_CIPHER_free(EVP_ASYM_CIPHER *cipher);
int EVP_ASYM_CIPHER_up_ref(EVP_ASYM_CIPHER *cipher);
const char *EVP_ASYM_CIPHER_get0_name(const EVP_ASYM_CIPHER *cipher);
int EVP_ASYM_CIPHER_is_a(const EVP_ASYM_CIPHER *cipher, const char *name);
OSSL_PROVIDER *EVP_ASYM_CIPHER_get0_provider(const EVP_ASYM_CIPHER *cipher);
void EVP_ASYM_CIPHER_do_all_provided(OSSL_LIB_CTX *libctx,
                                     void (*fn)(EVP_ASYM_CIPHER *cipher,
                                                void *arg),
                                     void *arg);
int EVP_ASYM_CIPHER_names_do_all(const EVP_ASYM_CIPHER *cipher,
```

```
                        void (*fn)(const char *name, void *data),
                        void *data);
 const char *EVP_ASYM_CIPHER_get0_description(const EVP_ASYM_CIPHER *cipher);
 const OSSL_PARAM *EVP_ASYM_CIPHER_gettable_ctx_params(const EVP_ASYM_CIPHER *cip);
 const OSSL_PARAM *EVP_ASYM_CIPHER_settable_ctx_params(const EVP_ASYM_CIPHER *cip);
```

DESCRIPTION

EVP_ASYM_CIPHER_fetch() fetches the implementation for the given algorithm from any provider offering it, within the criteria given by the properties and in the scope of the given library context ctx (see OSSL_LIB_CTX(3)). The algorithm will be one offering functions for performing asymmetric cipher related tasks such as asymmetric encryption and decryption. See "ALGORITHM FETCHING" in crypto(7) for further information.

The returned value must eventually be freed with EVP_ASYM_CIPHER_free().

EVP_ASYM_CIPHER_free() decrements the reference count for the EVP_ASYM_CIPHER structure. Typically this structure will have been obtained from an earlier call to EVP_ASYM_CIPHER_fetch(). If the reference count drops to 0 then the structure is freed.

EVP_ASYM_CIPHER_up_ref() increments the reference count for an EVP_ASYM_CIPHER structure.

EVP_ASYM_CIPHER_is_a() returns 1 if cipher is an implementation of an algorithm that's identifiable with name, otherwise 0.

EVP_ASYM_CIPHER_get0_provider() returns the provider that cipher was fetched from.

EVP_ASYM_CIPHER_do_all_provided() traverses all EVP_ASYM_CIPHERs implemented by all activated providers in the given library context libctx, and for each of the implementations, calls the given function fn with the implementation method and the given arg as argument.

EVP_ASYM_CIPHER_get0_name() returns the algorithm name from the provided implementation for the given cipher. Note that the cipher may have multiple synonyms associated with it. In this case the first name from the algorithm definition is returned. Ownership of the returned

string is retained by the cipher object and should not be freed by the caller.

EVP_ASYM_CIPHER_names_do_all() traverses all names for cipher, and calls fn with each name and data.

EVP_ASYM_CIPHER_get0_description() returns a description of the cipher, meant for display and human consumption. The description is at the discretion of the cipher implementation.

EVP_ASYM_CIPHER_gettable_ctx_params() and EVP_ASYM_CIPHER_settable_ctx_params() return a constant OSSL_PARAM array that describes the names and types of key parameters that can be retrieved or set by a key encryption algorithm using EVP_PKEY_CTX_get_params(3) and EVP_PKEY_CTX_set_params(3).

RETURN VALUES

EVP_ASYM_CIPHER_fetch() returns a pointer to an EVP_ASYM_CIPHER for success or NULL for failure.

EVP_ASYM_CIPHER_up_ref() returns 1 for success or 0 otherwise.

EVP_ASYM_CIPHER_names_do_all() returns 1 if the callback was called for all names. A return value of 0 means that the callback was not called for any names.

EVP_ASYM_CIPHER_gettable_ctx_params() and EVP_ASYM_CIPHER_settable_ctx_params() return a constant OSSL_PARAM array or NULL on error.

SEE ALSO

"ALGORITHM FETCHING" in crypto(7), OSSL_PROVIDER(3)

HISTORY

The functions described here were added in OpenSSL 3.0.

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