

NAME

EVP_PKEY_CTX_set_params, EVP_PKEY_CTX_settable_params, EVP_PKEY_CTX_get_params, EVP_PKEY_CTX_gettable_params - provider parameter passing operations

SYNOPSIS

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

```
int EVP_PKEY_CTX_set_params(EVP_PKEY_CTX *ctx, const OSSL_PARAM *params);
const OSSL_PARAM *EVP_PKEY_CTX_settable_params(const EVP_PKEY_CTX *ctx);
int EVP_PKEY_CTX_get_params(EVP_PKEY_CTX *ctx, OSSL_PARAM *params);
const OSSL_PARAM *EVP_PKEY_CTX_gettable_params(const EVP_PKEY_CTX *ctx);
```

DESCRIPTION

The **EVP_PKEY_CTX_get_params()** and **EVP_PKEY_CTX_set_params()** functions allow transfer of arbitrary key parameters to and from providers. Not all parameters may be supported by all providers. See **OSSL_PROVIDER(3)** for more information on providers. See **OSSL_PARAM(3)** for more information on parameters. These functions must only be called after the **EVP_PKEY_CTX** has been initialised for use in an operation. These methods replace the **EVP_PKEY_CTX_ctrl()** mechanism. (**EVP_PKEY_CTX_ctrl** now calls these methods internally to interact with providers).

EVP_PKEY_CTX_gettable_params() and **EVP_PKEY_CTX_settable_params()** get a constant **OSSL_PARAM(3)** array that describes the gettable and settable parameters for the current algorithm implementation, i.e. parameters that can be used with **EVP_PKEY_CTX_get_params()** and **EVP_PKEY_CTX_set_params()** respectively. These functions must only be called after the **EVP_PKEY_CTX** has been initialised for use in an operation.

Parameters

Examples of **EVP_PKEY** parameters include the following:

"Common parameters" in **provider-keymgmt(7)** "Key Exchange parameters" in **provider-keyexch(7)**
 "Signature parameters" in **provider-signature(7)**

"Common RSA parameters" in **EVP_PKEY-RSA(7)** "RSA key generation parameters" in **EVP_PKEY-RSA(7)** "FFC parameters" in **EVP_PKEY-FFC(7)** "FFC key generation parameters" in **EVP_PKEY-FFC(7)** "DSA parameters" in **EVP_PKEY-DSA(7)** "DSA key generation parameters" in **EVP_PKEY-DSA(7)** "DH parameters" in **EVP_PKEY-DH(7)** "DH key generation parameters" in **EVP_PKEY-DH(7)** "Common EC parameters" in **EVP_PKEY-EC(7)** "Common X25519, X448, ED25519 and ED448 parameters" in **EVP_PKEY-X25519(7)**

RETURN VALUES

EVP_PKEY_CTX_set_params() returns 1 for success or 0 otherwise.

EVP_PKEY_CTX_settable_params() returns an OSSL_PARAM array on success or NULL on error. It may also return NULL if there are no settable parameters available.

All other functions and macros described on this page return a positive value for success and 0 or a negative value for failure. In particular a return value of -2 indicates the operation is not supported by the public key algorithm.

SEE ALSO

EVP_PKEY_CTX_new(3), **EVP_PKEY_encrypt(3)**, **EVP_PKEY_decrypt(3)**, **EVP_PKEY_sign(3)**,
EVP_PKEY_verify(3), **EVP_PKEY_verify_recover(3)**, **EVP_PKEY_derive(3)**,
EVP_PKEY_keygen(3)

HISTORY

All functions were added in OpenSSL 3.0.

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