

## 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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