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

$ man EVP_PKEY_eq.3ossl

EVP_PKEY_COPY_PARAMETERS(3ossl) OpenSSL EVP_PKEY_COPY_PARAMETERS(3ossl)

NAME

EVP_PKEY_missing_parameters, EVP_PKEY_copy_parameters,

EVP_PKEY_parameters_eq, EVP_PKEY_cmp_parameters, EVP_PKEY_eq,

EVP_PKEY_cmp - public key parameter and comparison functions

SYNOPSIS

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

int EVP_PKEY_missing_parameters(const EVP_PKEY *pkey);
int EVP_PKEY_copy_parameters(EVP_PKEY *to, const EVP_PKEY *from);

int EVP_PKEY_parameters_eq(const EVP_PKEY *a, const EVP_PKEY *b);
int EVP_PKEY_eq(const EVP_PKEY *a, const EVP_PKEY *b);
```

The following functions have been deprecated since OpenSSL 3.0, and can

be hidden entirely by defining OPENSSL_API_COMPAT with a suitable

version value, see openssl_user_macros(7):

```
int EVP_PKEY_cmp_parameters(const EVP_PKEY *a, const EVP_PKEY *b);
int EVP_PKEY_cmp(const EVP_PKEY *a, const EVP_PKEY *b);
```

DESCRIPTION

The function EVP_PKEY_missing_parameters() returns 1 if the public key parameters of pkey are missing and 0 if they are present or the algorithm doesn't use parameters.

The function EVP_PKEY_copy_parameters() copies the parameters from key from to key to. An error is returned if the parameters are missing in from or present in both from and to and mismatch. If the parameters in from and to are both present and match this function has no effect.

The function EVP_PKEY_parameters_eq() checks the parameters of keys a and b for equality.

The function EVP_PKEY_eq() checks the keys a and b for equality, including their parameters if they are available.

NOTES

The main purpose of the functions EVP_PKEY_missing_parameters() and EVP_PKEY_copy_parameters() is to handle public keys in certificates where the parameters are sometimes omitted from a public key if they are inherited from the CA that signed it.

The deprecated functions EVP_PKEY_cmp() and EVP_PKEY_cmp_parameters() differ in their return values compared to other _cmp() functions. They are aliases for EVP_PKEY_eq() and EVP_PKEY_parameters_eq().

The function EVP_PKEY_cmp() previously only checked the key parameters (if there are any) and the public key, assuming that there always was a public key and that private key equality could be derived from that. Because it's no longer assumed that the private key in an EVP_PKEY(3) is always accompanied by a public key, the comparison can not rely on public key comparison alone.

Instead, EVP_PKEY_eq() (and therefore also EVP_PKEY_cmp()) now compares:

1. the key parameters (if there are any)

2. the public keys or the private keys of the two EVP_PKEYs, depending on what they both contain.

RETURN VALUES

The function EVP_PKEY_missing_parameters() returns 1 if the public key parameters of pkey are missing and 0 if they are present or the algorithm doesn't use parameters.

These functions EVP_PKEY_copy_parameters() returns 1 for success and 0 for failure.

The functions EVP_PKEY_cmp_parameters(), EVP_PKEY_parameters_eq(), EVP_PKEY_cmp() and EVP_PKEY_eq() return 1 if their inputs match, 0 if they don't match, -1 if the key types are different and -2 if the operation is not supported.

SEE ALSO

EVP_PKEY_CTX_new(3), EVP_PKEY_keygen(3)

HISTORY

The EVP_PKEY_cmp() and EVP_PKEY_cmp_parameters() functions were deprecated in OpenSSL 3.0.

The EVP_PKEY_eq() and EVP_PKEY_parameters_eq() were added in OpenSSL 3.0 to replace EVP_PKEY_cmp() and EVP_PKEY_cmp_parameters().

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