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## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'EVP\_PKEY\_verify\_init\_ex.3ossl' command**

```
$ man EVP_PKEY_verify_init_ex.3ossl
```

```
EVP_PKEY_VERIFY(3ossl)      OpenSSL      EVP_PKEY_VERIFY(3ossl)
```

### NAME

EVP\_PKEY\_verify\_init, EVP\_PKEY\_verify\_init\_ex, EVP\_PKEY\_verify -  
signature verification using a public key algorithm

### SYNOPSIS

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

```
int EVP_PKEY_verify_init(EVP_PKEY_CTX *ctx);
```

```
int EVP_PKEY_verify_init_ex(EVP_PKEY_CTX *ctx, const OSSL_PARAM params[]);
```

```
int EVP_PKEY_verify(EVP_PKEY_CTX *ctx,  
                   const unsigned char *sig, size_t siglen,  
                   const unsigned char *tbs, size_t tbslen);
```

### DESCRIPTION

EVP\_PKEY\_verify\_init() initializes a public key algorithm context ctx for signing using the algorithm given when the context was created using EVP\_PKEY\_CTX\_new(3) or variants thereof. The algorithm is used to fetch a EVP\_SIGNATURE method implicitly, see "Implicit fetch" in provider(7) for more information about implicit fetches.

EVP\_PKEY\_verify\_init\_ex() is the same as EVP\_PKEY\_verify\_init() but

additionally sets the passed parameters `params` on the context before returning.

The `EVP_PKEY_verify()` function performs a public key verification operation using `ctx`. The signature is specified using the `sig` and `siglen` parameters. The verified data (i.e. the data believed originally signed) is specified using the `tbs` and `tbslen` parameters.

## NOTES

After the call to `EVP_PKEY_verify_init()` algorithm specific control operations can be performed to set any appropriate parameters for the operation.

The function `EVP_PKEY_verify()` can be called more than once on the same context if several operations are performed using the same parameters.

## RETURN VALUES

`EVP_PKEY_verify_init()` and `EVP_PKEY_verify()` return 1 if the verification was successful and 0 if it failed. Unlike other functions the return value 0 from `EVP_PKEY_verify()` only indicates that the signature did not verify successfully (that is `tbs` did not match the original data or the signature was of invalid form) it is not an indication of a more serious error.

A negative value indicates an error other than signature verification failure. In particular a return value of -2 indicates the operation is not supported by the public key algorithm.

## EXAMPLES

Verify signature using PKCS#1 and SHA256 digest:

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

```

EVP_PKEY_CTX *ctx;
unsigned char *md, *sig;
size_t mdlen, siglen;
EVP_PKEY *verify_key;

/*
 * NB: assumes verify_key, sig, siglen md and mdlen are already set up
 * and that verify_key is an RSA public key
 */
ctx = EVP_PKEY_CTX_new(verify_key, NULL /* no engine */);
if (!ctx)
    /* Error occurred */
if (EVP_PKEY_verify_init(ctx) <= 0)
    /* Error */
if (EVP_PKEY_CTX_set_rsa_padding(ctx, RSA_PKCS1_PADDING) <= 0)
    /* Error */
if (EVP_PKEY_CTX_set_signature_md(ctx, EVP_sha256()) <= 0)
    /* Error */

/* Perform operation */
ret = EVP_PKEY_verify(ctx, sig, siglen, md, mdlen);

/*
 * ret == 1 indicates success, 0 verify failure and < 0 for some
 * other error.
 */

```

#### SEE ALSO

[EVP\\_PKEY\\_CTX\\_new\(3\)](#), [EVP\\_PKEY\\_encrypt\(3\)](#), [EVP\\_PKEY\\_decrypt\(3\)](#),  
[EVP\\_PKEY\\_sign\(3\)](#), [EVP\\_PKEY\\_verify\\_recover\(3\)](#), [EVP\\_PKEY\\_derive\(3\)](#)

The `EVP_PKEY_verify_init()` and `EVP_PKEY_verify()` functions were added in OpenSSL 1.0.0.

The `EVP_PKEY_verify_init_ex()` function was added in OpenSSL 3.0.

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3.0.7                    2023-07-13            EVP\_PKEY\_VERIFY(3ossl)