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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'RSA_private_encrypt.3oss1' command

`$ man RSA_private_encrypt.3oss1`

`RSA_PRIVATE_ENCRYPT(3oss1)` `OpenSSL` `RSA_PRIVATE_ENCRYPT(3oss1)`

NAME

`RSA_private_encrypt`, `RSA_public_decrypt` - low-level signature operations

SYNOPSIS

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

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 RSA_private_encrypt(int flen, unsigned char *from,  
                        unsigned char *to, RSA *rsa, int padding);
```

```
int RSA_public_decrypt(int flen, unsigned char *from,  
                      unsigned char *to, RSA *rsa, int padding);
```

DESCRIPTION

Both of the functions described on this page are deprecated. Applications should instead use `EVP_PKEY_sign_init_ex(3)`, `EVP_PKEY_sign(3)`, `EVP_PKEY_verify_recover_init(3)`, and

EVP_PKEY_verify_recover(3).

These functions handle RSA signatures at a low-level.

RSA_private_encrypt() signs the `flen` bytes at `from` (usually a message digest with an algorithm identifier) using the private key `rsa` and stores the signature in `to`. `to` must point to `RSA_size(rsa)` bytes of memory.

`padding` denotes one of the following modes:

RSA_PKCS1_PADDING

PKCS #1 v1.5 padding. This function does not handle the `algorithmIdentifier` specified in PKCS #1. When generating or verifying PKCS #1 signatures, `RSA_sign(3)` and `RSA_verify(3)` should be used.

RSA_NO_PADDING

Raw RSA signature. This mode should only be used to implement cryptographically sound padding modes in the application code. Signing user data directly with RSA is insecure.

RSA_public_decrypt() recovers the message digest from the `flen` bytes long signature at `from` using the signer's public key `rsa`. `to` must point to a memory section large enough to hold the message digest (which is smaller than `RSA_size(rsa) - 11`). `padding` is the padding mode that was used to sign the data.

RETURN VALUES

`RSA_private_encrypt()` returns the size of the signature (i.e., `RSA_size(rsa)`). `RSA_public_decrypt()` returns the size of the recovered message digest.

On error, -1 is returned; the error codes can be obtained by
ERR_get_error(3).

SEE ALSO

ERR_get_error(3), RSA_sign(3), RSA_verify(3), EVP_PKEY_sign(3),
EVP_PKEY_verify_recover(3)

HISTORY

Both of these functions were deprecated in OpenSSL 3.0.

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