NAME

es384_pk_new, **es384_pk_free**, **es384_pk_from_EC_KEY**, **es384_pk_from_EVP_PKEY**, **es384_pk_from_ptr**, **es384_pk_to_EVP_PKEY** - FIDO2 COSE ES384 API

SYNOPSIS

#include <openssl/ec.h>
#include <fido/es384.h>

*es384_pk_t **
es384_pk_new(*void*);

void
es384_pk_free(*es384_pk_t **pkp*);

int
es384_pk_from_EC_KEY(*es384_pk_t *pk, const EC_KEY *ec*);

int
es384_pk_from_EVP_PKEY(*es384_pk_t *pk, const EVP_PKEY *pkey*);

int
es384_pk_from_ptr(*es384_pk_t *pk, const void *ptr, size_t len*);

*EVP_PKEY **
es384_pk_to_EVP_PKEY(*const es384_pk_t *pk*);

DESCRIPTION

ES384 is the name given in the CBOR Object Signing and Encryption (COSE) RFC to ECDSA over P-384 with SHA-384. The COSE ES384 API of *libfido2* is an auxiliary API with routines to convert between the different ECDSA public key types used in *libfido2* and *OpenSSL*.

In *libfido2*, ES384 public keys are abstracted by the *es384_pk_t* type.

The **es384_pk_new**() function returns a pointer to a newly allocated, empty *es384_pk_t* type. If memory cannot be allocated, NULL is returned.

The **es384_pk_free**() function releases the memory backing **pkp*, where **pkp* must have been previously allocated by **es384_pk_new**(). On return, **pkp* is set to NULL. Either *pkp* or **pkp* may be NULL, in which case **es384_pk_free**() is a NOP.

The **es384_pk_from_EC_KEY**() function fills *pk* with the contents of *ec*. No references to *ec* are kept.

The **es384_pk_from_EVP_PKEY**() function fills *pk* with the contents of *pkey*. No references to *pkey* are kept.

The **es384_pk_from_ptr**() function fills *pk* with the contents of *ptr*, where *ptr* points to *len* bytes. The *ptr* pointer may point to an uncompressed point, or to the concatenation of the x and y coordinates. No references to *ptr* are kept.

The **es384_pk_to_EVP_PKEY**() function converts *pk* to a newly allocated *EVP_PKEY* type with a reference count of 1. No internal references to the returned pointer are kept. If an error occurs, **es384_pk_to_EVP_PKEY**() returns NULL.

RETURN VALUES

The **es384_pk_from_EC_KEY**(), **es384_pk_from_EVP_PKEY**(), and **es384_pk_from_ptr**() functions return FIDO_OK on success. On error, a different error code defined in <*fido/err.h*> is returned.

SEE ALSO

eddsa_pk_new(3), es256_pk_new(3), fido_assert_verify(3), fido_cred_pubkey_ptr(3), rs256_pk_new(3)