



## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'EVP\_KEYMGMT-X25519.7oss1' command**

**\$ man EVP\_KEYMGMT-X25519.7oss1**

EVP\_PKEY-X25519(7oss1)      OpenSSL      EVP\_PKEY-X25519(7oss1)

### NAME

EVP\_PKEY-X25519, EVP\_PKEY-X448, EVP\_PKEY-ED25519, EVP\_PKEY-ED448,  
EVP\_KEYMGMT-X25519, EVP\_KEYMGMT-X448, EVP\_KEYMGMT-ED25519,  
EVP\_KEYMGMT-ED448 - EVP\_PKEY X25519, X448, ED25519 and ED448 keytype  
and algorithm support

### DESCRIPTION

The X25519, X448, ED25519 and ED448 keytypes are implemented in  
OpenSSL's default and FIPS providers. These implementations support  
the associated key, containing the public key pub and the private key  
priv.

No additional parameters can be set during key generation.

Common X25519, X448, ED25519 and ED448 parameters

In addition to the common parameters that all keytypes should support  
(see "Common parameters" in provider-keymgmt(7)), the implementation of  
these keytypes support the following.

"group" (OSSL\_PKEY\_PARAM\_GROUP\_NAME) <UTF8 string>

This is only supported by X25519 and X448. The group name must be  
"x25519" or "x448" respectively for those algorithms. This is only  
present for consistency with other key exchange algorithms and is  
typically not needed.

"pub" (OSSL\_PKEY\_PARAM\_PUB\_KEY) <octet string>

The public key value.

"priv" (OSSL\_PKEY\_PARAM\_PRIV\_KEY) <octet string>

The private key value.

"encoded-pub-key" (OSSL\_PKEY\_PARAM\_ENCODED\_PUBLIC\_KEY) <octet string>

Used for getting and setting the encoding of a public key for the

X25519 and X448 key types. Public keys are expected be encoded in a

format as defined by RFC7748.

ED25519 and ED448 parameters

"mandatory-digest" (OSSL\_PKEY\_PARAM\_MANDATORY\_DIGEST) <UTF8 string>

The empty string, signifying that no digest may be specified.

## CONFORMING TO

RFC 8032

RFC 8410

## EXAMPLES

An EVP\_PKEY context can be obtained by calling:

```
EVP_PKEY_CTX *pctx =
```

```
    EVP_PKEY_CTX_new_from_name(NULL, "X25519", NULL);
```

```
EVP_PKEY_CTX *pctx =
```

```
    EVP_PKEY_CTX_new_from_name(NULL, "X448", NULL);
```

```
EVP_PKEY_CTX *pctx =
```

```
    EVP_PKEY_CTX_new_from_name(NULL, "ED25519", NULL);
```

```
EVP_PKEY_CTX *pctx =
```

```
    EVP_PKEY_CTX_new_from_name(NULL, "ED448", NULL);
```

An X25519 key can be generated like this:

```
pkey = EVP_PKEY_Q_keygen(NULL, NULL, "X25519");
```

An X448, ED25519, or ED448 key can be generated likewise.

## SEE ALSO

EVP\_KEYMGMT(3), EVP\_PKEY(3), provider-keymgmt(7),

EVP\_KEYEXCH-X25519(7), EVP\_KEYEXCH-X448(7), EVP\_SIGNATURE-ED25519(7),

EVP\_SIGNATURE-ED448(7)

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