

NAME

EVP_chacha20, EVP_chacha20_poly1305 – EVP ChaCha20 stream cipher

SYNOPSIS

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

```
const EVP_CIPHER *EVP_chacha20(void);  
const EVP_CIPHER *EVP_chacha20_poly1305(void);
```

DESCRIPTION

The ChaCha20 stream cipher for EVP.

EVP_chacha20()

The ChaCha20 stream cipher. The key length is 256 bits, the IV is 128 bits long. The first 64 bits consists of a counter in little-endian order followed by a 64 bit nonce. For example a nonce of:

0000000000000002

With an initial counter of 42 (2a in hex) would be expressed as:

2a000000000000000000000000000002

EVP_chacha20_poly1305()

Authenticated encryption with ChaCha20-Poly1305. Like **EVP_chacha20()**, the key is 256 bits and the IV is 96 bits. This supports additional authenticated data (AAD) and produces a 128-bit authentication tag. See the "AEAD INTERFACE" in **EVP_EncryptInit(3)** section for more information.

NOTES

Developers should be aware of the negative performance implications of calling these functions multiple times and should consider using **EVP_CIPHER_fetch(3)** with **EVP_CIPHER_CHACHA(7)** instead. See "Performance" in **crypto(7)** for further information.

RFC 7539 <<https://www.rfc-editor.org/rfc/rfc7539.html#section-2.4>> uses a 32 bit counter and a 96 bit nonce for the IV.

RETURN VALUES

These functions return an **EVP_CIPHER** structure that contains the implementation of the symmetric cipher. See **EVP_CIPHER_meth_new(3)** for details of the **EVP_CIPHER** structure.

SEE ALSO

evp(7), **EVP_EncryptInit(3)**, **EVP_CIPHER_meth_new(3)**

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