What is Sodium?

Sodium is a modern, easy-to-use software library for encryption, decryption, signatures, password hashing, and more.
It is a portable, cross-compilable, installable, and packageable fork of NaCl, with a compatible but extended API to improve usability even further.
Its goal is to provide all of the core operations needed to build higher-level cryptographic tools.
Sodium is cross-platform and cross-language. It runs on many compilers and operating systems, including Windows (with MinGW or Visual Studio, x86 and x86_64), iOS, and Android. JavaScript and WebAssembly versions are also available and fully supported. Furthermore, bindings for all common programming languages are available and well-supported.
The design choices emphasize security and ease of use. But despite the emphasis on high security, primitives are faster across-the-board than most implementations.

Source: *doc.libsodium.org*

Encryption/Decryption

Secret Key Encryption (AES-like)

Encrypt	`crypto _se cre tbo x_e asy()`
Decrypt	`crypto _se cre tbo x_o pen _easy()`

`{{lang-cpp}}

unsigned char key[crypto_secretbox_KEYBYTES];
unsigned char nonce[crypto_secretbox_NONCEBYTES];
unsigned char ciphertext[crypto_secretbox_MACBYTES + message_len];
unsigned char decrypted[message_len];

crypto_secretbox_easy(ciphertext, message, message_len, nonce, key);
crypto_secretbox_open_easy(decrypted, ciphertext, sizeof(ciphertext), nonce, key);
`

Installation

Linux	Use package managers (e.g., apt-get install libsodium-dev).
Windows	Download precompiled binaries or build from source.
macOS	Use Homebrew (brew install libsodium).

Random bytes

```
unsigned char buf[32];
random byt es_ buf (buf,
sizeof (buf));
```


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