

**NAME**

**claes** – conventional encryption tool interoperating with **gpg** and **openssl**

**SYNOPSIS**

**claes** [-debug] [-decrypt] [-cms | -openssl [-128]] [OPTION] [FILE | -]

**DESCRIPTION**

**claes** encrypts or decrypts data in OpenPGP format, CMS format and OPENSSL format using files or standard input with a passphrase-based AES cipher. If no FILE or "-" is given, data is read from standard input. If data is piped into **claes**, then the interactive password entry is not available. The size of any internal input data is limited to 256 MByte. The default mode of operation is **encryption** with the ciphertext stored base64-encoded in the OpenPGP format. To decrypt base64-encoded or binary input data the option **-decrypt** must be used.

All input data is processed AS IS and is treated internally as binary data with no changes. For every encryption or decryption a user-provided passphrase is read from the terminal in which **claes** is run. So **claes** always works interactively. There is deliberately no public-key-cryptography build into **claes**. If you need those, please use **clsmime** and **clkeys**.

**OPTIONS**

- help** display this help and exit
- version**  
output version information and exit
- debug**  
print debugging information to stderr
- cms** produce CMS enveloped and encrypted data instead of OpenPGP (default)
- openssl**  
produce encrypted data in openssl format using pbkdf2 for passphrase mangling
- 128** forces the use of 128 bit AES keys in conjunction with -openssl  
(AES 256 bits is the default)
- decrypt**  
decrypts an encrypted message (default is encrypt)  
If data is compressed it will be de-compressed automatically
- binary**  
uses binary data both for input and output
- compress**  
forces compression before data is encrypted

**NOTES**

Full documentation <<https://senderek.ie/cryptlib/tools>>

This program depends on two packages providing the cryptlib shared object library and the python3-bindings to this library.

You can download both packages in RPM or DEB format at <https://senderek.ie/cryptlib/>

Using FEDORA you can install the packages cryptlib and cryptlib-python3 directly from the repository.

In addition the program `/bin/systemd-ask-password` is needed to read sensible data from stdin. This program is part of the systemd package.

## INTEROPERABILITY

### gpg2

Without any options `claes` produces OpenPGP (base64-encoded) encrypted messages using AES-128. It can decrypt any messages (ascii or binary) produced by GnuPG with the following ciphers: AES, AES192, AES256, 3DES and CAST-128. The option `"-binary"` causes the output written to a file with the `.gpg` extension. As binary output does not compute the CRC24 checksum, it is much faster than the default mode and is recommended for the encryption of large files.

To mangle the password correctly the option `--s2k-digest-algo SHA256` must be used with `gpg`.

From version 1.1 an MDC packet is added to every encryption in OpenPGP mode. Integrity protection is also used with the CMS format.

### openssl

In OpenSSL mode `claes` writes encrypted messages in the proprietary OpenSSL format using AES256 as the default.

These messages can be decrypted with `openssl` :

**`openssl aes-256-cbc -pbkdf2 -d -a -in FILE.asc`**

The use of AES-128 can be forced by the additional option `-128` both for encryption or decryption of OpenSSL messages.

There is no compression available in OpenSSL mode.

### CMS

In CMS mode `claes` produces PKCS#7 formatted (base64-encoded) enveloped and encrypted messages.

## FILES

`/usr/bin/systemd-ask-password`

This program is used to provide the passphrase based on a user's input.

`/lib64/libcl.so.3.4.9`

The cryptlib library.

`/usr/lib/python3.1x/site-packages/cryptlib_py.so`

Bindings to the cryptlib library used by python3.

## BUGS

Please report bugs to [innovation@senderek.ie](mailto:innovation@senderek.ie)

## AUTHORS

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## COPYRIGHT

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**SEE ALSO**

cryptlib, clsmime, clkeys