# Adding new libraries

When adding a new sub-library to OpenSSL, assign it a library number `ERR_LIB_XXX`, define a macro `XXXerr()` (both in `err.h`), add its name to `ERR_str_libraries[]` (in `crypto/err/err.c`), and add `ERR_load_XXX_strings()` to the `ERR_load_crypto_strings()` function (in `crypto/err/err_all.c`). Finally, add an entry:

```
L       XXX     xxx.h   xxx_err.c
```

to `crypto/err/openssl.ec`, and add `xxx_err.c` to the `Makefile`. Running make errors will then generate a file `xxx_err.c`, and add all error codes used in the library to `xxx.h`.

Additionally the library include file must have a certain form. Typically it will initially look like this:

```
#ifndef HEADER_XXX_H
#define HEADER_XXX_H

#ifdef __cplusplus
extern "C" {
#endif

/* Include files */

#include <openssl/bio.h>
#include <openssl/x509.h>

/* Macros, structures and function prototypes */


/* BEGIN ERROR CODES */
```

The `BEGIN ERROR CODES` sequence is used by the error code generation script as the point to place new error codes, any text after this point will be overwritten when make errors is run. The closing `#endif` etc will be automatically added by the script.

The generated C error code file `xxx_err.c` will load the header files `stdio.h`, `openssl/err.h` and `openssl/xxx.h` so the header file must load any additional header files containing any definitions it uses.