

NAME

gcobol — GCC COBOL Front-end I/O function API

LIBRARY*libgcobol***SYNOPSIS**

```

#include <symbols.h>
#include <io.h>
#include <gcobolio.h>

gcobol_io_t
gcobol_fileops();

class gcobol_io_t {
public:
    static const char constexpr marquee[64];
    typedef void (open_t)( cblc_file_t *file,
                           char *filename,
                           int mode_char,
                           int is_quoted );
    typedef void (close_t)( cblc_file_t *file,
                            int how );
    typedef void (start_t)( cblc_file_t *file,
                            int relop, // needs enum
                            int first_last_key,
                            size_t length );
    typedef void (read_t)( cblc_file_t *file,
                           int where );
    typedef void (write_t)( cblc_file_t *file,
                           unsigned char *data,
                           size_t length,
                           int after,
                           int lines,
                           int is_random );
    typedef void (rewrite_t)( cblc_file_t *file,
                              size_t length, bool is_random );
    typedef void (delete_t)( cblc_file_t *file,
                              bool is_random );

    open_t      *Open;
    close_t      *Close;
    start_t      *Start;
    read_t       *Read;
    write_t      *Write;
    rewrite_t     *Rewrite;
    delete_t     *Delete;
    ...
};

```

DESCRIPTION

gcobol supplies replaceable I/O functionality via **gcobol_fileops()**. It returns a pointer to a structure of C function pointers that implement sequential, relative, and indexed file operations over files whose On Disk Format (ODF) is defined by **gcobol**. A user wishing to use another library that implements the same functionality over a different ODF must supply a different implementation of **gcobol_fileops()**, plus 7 functions, as described in this document. The pointers to those user-implemented functions are placed in a C++ object of type *gcobol_io_t* and an instantiation of that type is returned by **gcobol_fileops()**. The compiled program initializes I/O operations by calling that function the first

data address of in-memory buffer to write
length length of in-memory buffer to write
after has the value 1 if the
 AFTER ADVANCING *n* LINES
 phrase was present in the **WRITE** statement, else 0
lines may be one of
 -666 ADVANCING PAGE
 -1 no **ADVANCING** phrase appeared
 0 ADVANCING 0 LINES is valid
 >0 the value of *n* in ADVANCING *n* LINES
is_random is **true** if the *access mode* is RANDOM

Rewrite `void rewrite_t(cblc_file_t *file, size_t length, bool is_random)` parameters:

length number of bytes to write
is_random **true** if *access mode* is RANDOM

Delete `void delete_t(cblc_file_t *file, bool is_random)` parameters:
is_random **true** if *access mode* is RANDOM

The library implements one function that the **gcobol**-produced binary calls directly:

`gcobol_io_t *gcobol_fileops()`

This function populates a `gcobol_io_t` object with the above function pointers. The compiled binary begins by calling **gcobol_fileops**(), and then uses the supplied pointers to effect I/O.

RETURN VALUES

I/O functions return **void**. **gcobol_fileops**() returns `gcobol_io_t*`.

STANDARDS

The I/O library supplied by **gcobol**, **libgcobolio.so**, supports the I/O semantics defined by ISO COBOL. It is not intended to be compatible with any other ODF. That is, **libgcobolio.so** cannot be used to exchange data with any other COBOL implementation.

The purpose of the `gcobol_io_t` structure is to allow the use of other I/O implementations with other ODF representations.

CAVEATS

The library is not well tested, not least because it is not implemented.

BUGS

The future is yet to come.