

# globus gsi openssl error Reference Manual

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## 1 globus gsi openssl error Module Index

### 1.1 globus gsi openssl error Modules

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## 2 globus gsi openssl error Module Documentation

### 2.1 Globus OPENSSL Error API

Modules

- [Activation](#)
- [Error Construction](#)
- [Error Helper Functions](#)

#### 2.1.1 Detailed Description

These `globus_openssl_error` functions provide a wrapper to error types defined by OpenSSL. Any program that uses Globus OpenSSL Error functions must include "`globus_error_openssl.h`".

### 2.2 Activation

Defines

- `#define` [GLOBUS\\_GSI\\_OPENSSL\\_ERROR\\_MODULE](#)

#### 2.2.1 Detailed Description

Globus GSI OpenSSL Error uses standard Globus module activation and deactivation. Before any Globus GSI OpenSSL Error functions are called, the following function must be called:

```
globus_module_activate(GLOBUS_GSI_OPENSSL_ERROR_MODULE)
```

This function returns GLOBUS\_SUCCESS if Globus GSI OpenSSL Error was successfully initialized, and you are therefore allowed to subsequently call Globus GSI OpenSSL Error functions. Otherwise, an error code is returned, and Globus GSI OpenSSL Error functions should not be subsequently called. This function may be called multiple times.

To deactivate Globus GSI OpenSSL Error, the following function must be called:

```
globus_module_deactivate(GLOBUS_GSI_OPENSSL_ERROR_MODULE)
```

This function should be called once for each time Globus GSI OpenSSL Error was activated.

## 2.2.2 Define Documentation

### 2.2.2.1 #define GLOBUS\_GSI\_OPENSSL\_ERROR\_MODULE

Module descriptor.

## 2.3 Error Construction

### Get Error Code

- unsigned long `globus_openssl_error_handle_get_error_code(globus_openssl_error_handle_t handle)`

### Get Error Data

- const char `globus_openssl_error_handle_get_data(globus_openssl_error_handle_t handle)`

### Get Error Data Flags

- int `globus_openssl_error_handle_get_data_flags(globus_openssl_error_handle_t handle)`

### Get Filename

- const char `globus_openssl_error_handle_get_filename(globus_openssl_error_handle_t handle)`

### Get Linenumber

- int `globus_openssl_error_handle_get_linenum(globus_openssl_error_handle_t handle)`

### Get Library

- const char `globus_openssl_error_handle_get_library(globus_openssl_error_handle_t handle)`

### Get Function

- const char `globus_openssl_error_handle_get_function(globus_openssl_error_handle_t handle)`

## Get Reason

- const char [globus\\_openssl\\_error\\_handle\\_get\\_reason](#)(globus\_openssl\_error\_handle\_t handle)

## Construct Error

- globus\_object\_t [globus\\_error\\_construct\\_openssl\\_error](#)(globus\_module\_descriptor\_base\_source, globus\_object\_t base\_cause)

## Initialize Error

- globus\_object\_t [globus\\_error\\_initialize\\_openssl\\_error](#)(globus\_object\_t error, globus\_module\_descriptor\_t base\_source, globus\_object\_t base\_cause, globus\_openssl\_error\_handle\_t openssl\_error\_handle)

## Get OpenSSL Filename

- const char [globus\\_error\\_openssl\\_error\\_get\\_filename](#)(globus\_object\_t error)

## Get OpenSSL Linenumber

- int [globus\\_error\\_openssl\\_error\\_get\\_linenum](#)(globus\_object\_t error)

## Get OpenSSL Library

- const char [globus\\_error\\_openssl\\_error\\_get\\_library](#)(globus\_object\_t error)

## Get OpenSSL Function

- const char [globus\\_error\\_openssl\\_error\\_get\\_function](#)(globus\_object\_t error)

## Get OpenSSL Reason

- const char [globus\\_error\\_openssl\\_error\\_get\\_reason](#)(globus\_object\_t error)

## Get OpenSSL Error Data

- const char [globus\\_error\\_openssl\\_error\\_get\\_data](#)(globus\_object\_t error)

## Get OpenSSL Error Data Flags

- int [globus\\_error\\_openssl\\_error\\_get\\_data\\_flags](#)(globus\_object\_t error)

## De nes

- #de ne [GLOBUS\\_ERROR\\_TYPE\\_OPENSSL](#)

### 2.3.1 Detailed Description

Create and initialize a Globus OpenSSL Error object.

This section describes operations to create and initialize Globus OpenSSLError objects.

### 2.3.2 Define Documentation

#### 2.3.2.1 #define GLOBUS\_ERROR\_TYPE\_OPENSSL

Error type definition.

### 2.3.3 Function Documentation

#### 2.3.3.1 unsigned long globus\_openssl\_error\_handle\_get\_error\_code (globus\_openssl\_error\_handle handle)

Get the openssl error code which represents the openssl error from the openssl error handle

Parameters:

handle The openssl error handle

Returns:

The error code

#### 2.3.3.2 const char globus\_openssl\_error\_handle\_get\_data (globus\_openssl\_error\_handle handle)

Get the openssl error data which contains additional data about the error from the openssl error handle

Parameters:

handle The openssl error handle

Returns:

The error data

#### 2.3.3.3 int globus\_openssl\_error\_handle\_get\_data\_agts (globus\_openssl\_error\_handle handle)

Get the openssl error data agts from the openssl error handle

Parameters:

handle The openssl error handle

Returns:

The error data agts

#### 2.3.3.4 const char globus\_openssl\_error\_handle\_get\_lename (globus\_openssl\_error\_handle handle)

Get the leiname where the openssl error occurred from the openssl error handle

Parameters:

handle The openssl error handle

Returns:

The leiname

#### 2.3.3.5 `int globus_openssl_error_handle_get_linenumber (globus_openssl_error_handle handle)`

Get the linenumber on which the openssl error occurred from the openssl error handle

Parameters:

handle The openssl error handle

Returns:

The linenumber

#### 2.3.3.6 `const char globus_openssl_error_handle_get_library (globus_openssl_error_handle handle)`

Get the library name where the openssl error occurred in from the openssl error handle

Parameters:

handle The openssl error handle

Returns:

The library name

#### 2.3.3.7 `const char globus_openssl_error_handle_get_function (globus_openssl_error_handle handle)`

Get the function name where the openssl error occurred from the openssl error handle

Parameters:

handle The openssl error handle

Returns:

The function name

#### 2.3.3.8 `const char globus_openssl_error_handle_get_reason (globus_openssl_error_handle handle)`

Get the reason string which caused the openssl error from the openssl error handle

Parameters:

handle The openssl error handle

Returns:

The reson string

#### 2.3.3.9 `globus_object_t globus_error_construct_openssl_error (globus_module_descriptor_t base_source, globus_object_t base_cause)`

Allocate and initialize an error of type `GLOBUS_ERROR_TYPE_OPENSSL`. This function, combined with `globus_error_initialize_openssl_error()`, will recursively generate globus error objects (of type `globus_object_t`) from the errors on openssl's static error stack. The errors will be chained in a causal fashion to provide a path to the root cause of the actual error.

NOTE: the static stack openssl implements for its errors currently only supports at most 16 errors, so if more are added, the errors that were added first will be wiped out. If 16 errors are counted in the chain of openssl errors, its possible that some errors (including the original error) are missing.

## Parameters:

`base_source` Pointer to the originating globus module.

`base_cause` The error object causing the error. This parameter should be NULL in nearly all cases, as the root cause of an error will most likely be in the openssl code itself. The actual cause of the error is determined from the static stack of openssl errors.

## Returns:

The resulting error object. It is the user's responsibility to eventually free this object using `globus_object_free()`. A `globus_result_t` may be obtained by calling `globus_error_put()` on this object.

2.3.3.10 `globus_object_t globus_error_initialize_openssl_error (globus_object_t error, globus_module_descriptor_t base_source, globus_object_t base_cause, globus_openssl_error_handle_t openssl_error_handle)`

Initialize a previously allocated error of type `GLOBUS_ERROR_TYPE_OPENSSL`.

## Parameters:

`error` The previously allocated error object.

`base_source` Pointer to the originating module.

`base_cause` The error object causing the error. If this is the original error this parameter may be NULL.

`openssl_error_handle` The openssl error handle associated with this error, this parameter should already be initialized to contain the openssl error code associated with the error.

## Returns:

The resulting error object. You may have to call `globus_error_put()` on this object before passing it on.

2.3.3.11 `const char globus_error_openssl_error_get_lename (globus_object_t error)`

Get the OpenSSL lename where the error occurred.

## Parameters:

`error` The globus object that represents the error

## Returns:

The lename where the openssl error occurred

2.3.3.12 `int globus_error_openssl_error_get_linenumber (globus_object_t error)`

Get the OpenSSL linenumber where the error occurred.

## Parameters:

`error` The globus object that represents the error

## Returns:

The linenumber where the openssl error occurred

#### 2.3.3.13 `const char globus_error_openssl_error_get_library (globus_object_t error)`

Get the OpenSSL library the error occurred in.

Parameters:

error The globus object that represents the error

Returns:

The library name where the openssl error occurred

#### 2.3.3.14 `const char globus_error_openssl_error_get_function (globus_object_t error)`

Get the OpenSSL lename where the error occurred.

Parameters:

error The globus object that represents the error

Returns:

The function name where the openssl error occurred

#### 2.3.3.15 `const char globus_error_openssl_error_get_reason (globus_object_t error)`

Get the OpenSSL reason for the error.

Parameters:

error The globus object that represents the error

Returns:

The reason for the openssl error

#### 2.3.3.16 `const char globus_error_openssl_error_get_data (globus_object_t error)`

Get the OpenSSL Error Data.

Parameters:

error The globus object that represents the error

Returns:

The error data for the openssl error

#### 2.3.3.17 `int globus_error_openssl_error_get_data_ags (globus_object_t error)`

Get the OpenSSL Error Data Flags.

Parameters:

error The globus object that represents the error

Returns:

The error data ags for the openssl error



## 2.4 Error Helper Functions

### OpenSSL Error Match

- `globus_bool_t globus_error_match_openssl_error(globus_object_t error, unsigned long library, unsigned long function, unsigned long reason)`

### Wrap OpenSSL Error

- `globus_object_t globus_error_wrap_openssl_error(globus_module_descriptor_t base_source, int error_type, const char source_le, const char source_func, int source_line, const char format,...)`

#### 2.4.1 Detailed Description

Utility functions that deal with Globus OpenSSL Error objects

This section defines utility function for Globus OpenSSL Error objects.

#### 2.4.2 Function Documentation

**2.4.2.1** `globus_bool_t globus_error_match_openssl_error(globus_object_t error, unsigned long library, unsigned long function, unsigned long reason)`

Check whether the error originated from a specific library, from a specific function and is of a specific type.

This function checks whether the error or any of its causative errors originated from a specific library, specific function and is of a specific type.

Parameters:

- `error` The error object for which to perform the check
- `library` The library to check for
- `function` The function to check for
- `reason` The type to check for

Returns:

`GLOBUS_TRUE` - the error matched `GLOBUS_FALSE` - the error failed to match

**2.4.2.2** `globus_object_t globus_error_wrap_openssl_error(globus_module_descriptor_t base_source, int error_type, const char source_le, const char source_func, int source_line, const char format, ...)`

Wrap the OpenSSL error and create a wrapped globus error object from the error.

This function gets all the openssl errors from the error list, and chains them using the globus error string object. The resulting globus error object is a wrapper to the openssl error at the end of the chain.

Parameters:

- `base_source` The module that the error was generated from
- `error_type` The type of error encapsulating the openssl error
- `source_le` Name of le. Use `__FILE__`
- `source_func` Name of function. Use `_globus_func_name` and declare your func with `GlobusFuncName(<name>)`

source\_line Line number. Use `__LINE__`

format format string for the description of the error entry point where the openssl error occurred, should be followed by parameters to fill the format string (like in printf).

Returns:

The globus error object. A `globus_result_t` object can be created using the `globus_error_put` function

See also:

`globus_error_put()`

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