

globus gass copy Reference Manual  
4.14

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## 1 globus gass copy Main Page

The Globus GASS Copy library is motivated by the desire to provide a uniform interface to transfer files specified by different protocols.

The goals in doing this are to:

- Provide a robust way to describe and apply file transfer properties for a variety of protocols. These include the standard HTTP, FTP and GSIFTP options. Some of the new file transfer capabilities in GSIFTP are parallel, striping, authentication and TCP buffer sizing.
- Provide a service to support nonblocking file transfer and handle asynchronous file and network events.
- Provide a simple and portable way to implement file transfers.

Any program that uses Globus GASS Copy functions must include "globus\_gass\_copy.h".

## 2 globus gass copy Data Structure Index

### 2.1 globus gass copy Data Structures

Here are the data structures with brief descriptions:

<a href="#">globus_gass_copy_glob_stat</a> (Glob expanded entry information )	2
<a href="#">globus_gass_copy_state</a> (The state structure contains all that is required to perform a file transfer from a source to a destination )	3
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## 3 globus\_gass\_copy File Index

### 3.1 globus\_gass\_copy File List

Here is a list of all documented files with brief descriptions:

<a href="#">globus_gass_copy.h</a>	Globus GASS Copy library )	6
<a href="#">globus_gass_copy.h</a>	Header file for the gass copy library )	18

## 4 globus\_gass\_copy Data Structure Documentation

### 4.1 globus\_gass\_copy\_glob\_stat\_t Struct Reference

Glob expanded entry information.

Data Fields

- [globus\\_gass\\_copy\\_glob\\_entry\\_t](#)
- char [unique\\_id](#)
- char [symlink\\_target](#)
- int [mode](#)
- int [mdtm](#)
- globus\_off\_t [size](#)

#### 4.1.1 Detailed Description

Glob expanded entry information.

#### 4.1.2 Field Documentation

##### 4.1.2.1 [globus\\_gass\\_copy\\_glob\\_entry\\_t::globus\\_gass\\_copy\\_glob\\_stat\\_t::type](#)

The type of the entry.

##### 4.1.2.2 char [globus\\_gass\\_copy\\_glob\\_stat\\_t::unique\\_id](#)

A string that uniquely identifies the data that the entry refers to.

A file and a symlink to that file will have the same `unique_id`. It is NULL for when not available.

##### 4.1.2.3 char [globus\\_gass\\_copy\\_glob\\_stat\\_t::symlink\\_target](#)

This points to the full path of the target of a symlink.

It is NULL for non-symlinks or when not available.

4.1.2.4 [intglobus\\_gass\\_copy\\_glob\\_stat\\_t::mode](#)

An integer specifying the mode of the le.

It is set to -1 when not available.

4.1.2.5 [intglobus\\_gass\\_copy\\_glob\\_stat\\_t::mdtm](#)

An integer specifying the modification time of the le.

It is set to -1 when not available.

4.1.2.6 [globus\\_off\\_tglobus\\_gass\\_copy\\_glob\\_stat\\_t::size](#)

A globus\_off\_t specifying the size of the le.

It is set to -1 when not available.

## 4.2 globus\_gass\_copy\_state\_s Struct Reference

The state structure contains all that is required to perform a le transfer from a source to a destination.

## Data Fields

- [globus\\_i\\_gass\\_copy\\_target\\_tsource](#)
- [globus\\_i\\_gass\\_copy\\_target\\_tdest](#)
- [globus\\_i\\_gass\\_copy\\_monitor\\_tmonitor](#)
- [globus\\_mutex\\_tmutex](#)
- [globus\\_i\\_gass\\_copy\\_cancel\\_status\\_tcancel](#)

## 4.2.1 Detailed Description

The state structure contains all that is required to perform a le transfer from a source to a destination.

## 4.2.2 Field Documentation

4.2.2.1 [globus\\_i\\_gass\\_copy\\_target\\_tglobus\\_gass\\_copy\\_state\\_s::source](#)

Source information for the le transfer.

4.2.2.2 [globus\\_i\\_gass\\_copy\\_target\\_tglobus\\_gass\\_copy\\_state\\_s::dest](#)

Dest information for the le transfer.

4.2.2.3 [globus\\_i\\_gass\\_copy\\_monitor\\_tglobus\\_gass\\_copy\\_state\\_s::monitor](#)

Used for signalling from the various callback functions.

4.2.2.4 [globus\\_mutex\\_tglobus\\_gass\\_copy\\_state\\_s::mutex](#)

coordinates the modifying of the state, aside from the target structures

#### 4.2.2.5 globus\_i\_gass\_copy\_cancel\_status [globus\\_gass\\_copy\\_state\\_s::cancel](#)

indicates the status of the cancel operation.

### 4.3 globus\_i\_gass\_copy\_buffer\_t Struct Reference

The buffer structure used for read/write queue entries.

#### 4.3.1 Detailed Description

The buffer structure used for read/write queue entries.

### 4.4 globus\_i\_gass\_copy\_cancel\_s Struct Reference

gass copy cancel struct

#### 4.4.1 Detailed Description

gass copy cancel struct

### 4.5 globus\_i\_gass\_copy\_monitor\_t Struct Reference

The state monitor struct.

#### 4.5.1 Detailed Description

The state monitor struct.

### 4.6 globus\_i\_gass\_copy\_state\_target\_s Struct Reference

GASS copy target (e.g.

#### Data Fields

- char [url](#)
- globus\_gass\_copy\_attr\_t [attr](#)
- globus\_mutex\_t [mutex](#)
- globus\_fo\_t [queue](#)
- int [n\\_pending](#)
- int [n\\_simultaneous](#)
- int [n\\_complete](#)
- globus\_i\_gass\_copy\_target\_status\_t [status](#)
- globus\_gass\_copy\_url\_mode\_t [mode](#)
- union {
  - struct {
  - } ftp
  - struct {

```

    globus_gass_transfer_request request
} gass
struct {
    globus_bool_free_handle
    globus_bool_seekable
} io
} data

```

#### 4.6.1 Detailed Description

GASS copy target (e.g. source, destination) transfer information.

#### 4.6.2 Field Documentation

##### 4.6.2.1 char [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::url](#)

url for the transfer

##### 4.6.2.2 globus\_gass\_copy\_attr\_t [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::attr](#)

attributes to control the transfer

##### 4.6.2.3 globus\_mutex\_t [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::mutex](#)

coordinates the modifying of the target structure

##### 4.6.2.4 globus\_file\_t [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::queue](#)

a queue to manage the reading/writing of data buffers

##### 4.6.2.5 int [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::n\\_pending](#)

Used for keeping track of reads/writes in the read/write queue.

##### 4.6.2.6 int [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::n\\_simultaneous](#)

Used to limit the number of n\_pending.

##### 4.6.2.7 int [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::n\\_complete](#)

Used to compute the offset for ftp writes.

##### 4.6.2.8 globus\_i\_gass\_copy\_target\_status\_t [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::status](#)

signifies the target has been successfully setup

##### 4.6.2.9 globus\_gass\_copy\_url\_mode\_t [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::mode](#)

mode used to identify the below target union struct.

4.6.2.10 struct { ... } [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::ftp](#)

ftp specific data

4.6.2.11 globus\_gass\_transfer\_request [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::request](#)

GASS equivalent of a handle.

4.6.2.12 struct { ... } [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::gass](#)

GASS specific data.

4.6.2.13 globus\_bool [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::free\\_handle](#)

If the IO handle was passed as an argument then FALSE If the IO handle was created internally then TRUE.

4.6.2.14 globus\_bool [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::seekable](#)

Can globus\_io\_le\_seek() be performed on this handle?

4.6.2.15 struct { ... } [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::io](#)

IO specific data.

4.6.2.16 union { ... } [globus\\_i\\_gass\\_copy\\_state\\_target\\_s::data](#)

data required to perform each type of transfer

## 5 globus\_gass\_copy File Documentation

### 5.1 globus\_gass\_copy.c File Reference

Globus GASS Copy library.

#### Functions

- globus\_result\_t [globus\\_gass\\_copy\\_handle\\_init](#)(globus\_gass\_copy\_handle\_t handle, globus\_gass\_copy\_handleattr\_t attr)
- globus\_result\_t [globus\\_gass\\_copy\\_handle\\_destroy](#)(globus\_gass\_copy\_handle\_t handle)
- globus\_result\_t [globus\\_gass\\_copy\\_set\\_buffer\\_length](#)(globus\_gass\_copy\_handle\_t handle, int length)
- globus\_result\_t [globus\\_gass\\_copy\\_get\\_buffer\\_length](#)(globus\_gass\_copy\_handle\_t handle, int length)
- globus\_result\_t [globus\\_gass\\_copy\\_set\\_no\\_third\\_party\\_transfers](#)(globus\_gass\_copy\_handle\_t handle, globus\_bool\_t no\_third\_party\_transfers)
- globus\_result\_t [globus\\_gass\\_copy\\_get\\_no\\_third\\_party\\_transfers](#)(globus\_gass\_copy\_handle\_t handle, globus\_bool\_t no\_third\_party\_transfers)
- globus\_result\_t [globus\\_gass\\_copy\\_set\\_allocation](#)(globus\_gass\_copy\_handle\_t handle, globus\_bool\_t send\_allocation)
- globus\_result\_t [globus\\_gass\\_copy\\_set\\_partial\\_offset](#)(globus\_gass\_copy\_handle\_t handle, globus\_off\_t offset, globus\_off\_t end\_offset)

- globus\_result\_t [globus\\_gass\\_copy\\_get\\_partial\\_offset](#)(globus\_gass\_copy\_handle\_t handle, globus\_off\_t offset, globus\_off\_t end\_offset)
- globus\_result\_t [globus\\_gass\\_copy\\_attr\\_init](#)(globus\_gass\_copy\_attr\_t attr)
- globus\_result\_t [globus\\_gass\\_copy\\_attr\\_set\\_ftp](#)(globus\_gass\_copy\_attr\_t attr, globus\_ftp\_client\_operationattr\_t ftp\_attr)
- globus\_result\_t [globus\\_gass\\_copy\\_attr\\_set](#)(globus\_gass\_copy\_attr\_t attr, globus\_io\_attr\_t io\_attr)
- globus\_result\_t [globus\\_gass\\_copy\\_attr\\_set\\_gass](#)(globus\_gass\_copy\_attr\_t attr, globus\_gass\_transfer\_requestattr\_t gass\_attr)
- globus\_result\_t [globus\\_gass\\_copy\\_get\\_url\\_mode](#)(char url, globus\_gass\_copy\_url\_mode\_t mode)
- globus\_result\_t [globus\\_gass\\_copy\\_register\\_performance](#)(globus\_gass\_copy\_handle\_t handle, [globus\\_gass\\_copy\\_performance\\_callback](#), void user\_arg)
- globus\_result\_t [globus\\_gass\\_copy\\_get\\_status](#)(globus\_gass\_copy\_handle\_t handle, globus\_gass\_copy\_status\_t status)
- const char [globus\\_gass\\_copy\\_get\\_status\\_string](#)(globus\_gass\_copy\_handle\_t handle)
- globus\_result\_t [globus\\_gass\\_copy\\_url\\_to\\_url](#)(globus\_gass\_copy\_handle\_t handle, char source\_url, globus\_gass\_copy\_attr\_t source\_attr, char dest\_url, globus\_gass\_copy\_attr\_t dest\_attr)
- globus\_result\_t [globus\\_gass\\_copy\\_url\\_to\\_handle](#)(globus\_gass\_copy\_handle\_t handle, char source\_url, globus\_gass\_copy\_attr\_t source\_attr, globus\_io\_handle\_t dest\_handle)
- globus\_result\_t [globus\\_gass\\_copy\\_handle\\_to\\_url](#)(globus\_gass\_copy\_handle\_t handle, globus\_io\_handle\_t source\_handle, char dest\_url, globus\_gass\_copy\_attr\_t dest\_attr)
- globus\_result\_t [globus\\_gass\\_copy\\_register\\_url\\_to\\_url](#)(globus\_gass\_copy\_handle\_t handle, char source\_url, globus\_gass\_copy\_attr\_t source\_attr, char dest\_url, globus\_gass\_copy\_attr\_t dest\_attr, globus\_gass\_copy\_callback\_t callback\_func, void callback\_arg)
- globus\_result\_t [globus\\_gass\\_copy\\_register\\_url\\_to\\_handle](#)(globus\_gass\_copy\_handle\_t handle, char source\_url, globus\_gass\_copy\_attr\_t source\_attr, globus\_io\_handle\_t dest\_handle, globus\_gass\_copy\_callback\_t callback\_func, void callback\_arg)
- globus\_result\_t [globus\\_gass\\_copy\\_register\\_handle\\_to\\_url](#)(globus\_gass\_copy\_handle\_t handle, globus\_io\_handle\_t source\_handle, char dest\_url, globus\_gass\_copy\_attr\_t dest\_attr, globus\_gass\_copy\_callback\_t callback\_func, void callback\_arg)
- globus\_result\_t [globus\\_gass\\_copy\\_cache\\_url\\_string](#)(globus\_gass\_copy\_handle\_t handle, char url)
- globus\_result\_t [globus\\_gass\\_copy\\_ush\\_url\\_string](#)(globus\_gass\_copy\_handle\_t handle, char url)
- globus\_result\_t [globus\\_gass\\_copy\\_set\\_user\\_pointer](#)(globus\_gass\_copy\_handle\_t handle, void user\_pointer)
- globus\_result\_t [globus\\_gass\\_copy\\_get\\_user\\_pointer](#)(globus\_gass\_copy\_handle\_t handle, void user\_data)
- globus\_result\_t [globus\\_gass\\_copy\\_cancel](#)(globus\_gass\_copy\_handle\_t handle, globus\_gass\_copy\_callback\_t cancel\_callback, void cancel\_callback\_arg)
- globus\_result\_t [globus\\_i\\_gass\\_copy\\_target\\_cancel](#)(globus\_i\_gass\_copy\_cancel\_t cancel\_info)

### 5.1.1 Detailed Description

Globus GASS Copy library.

See also:

See the detailed description [globus\\_gass\\_copy.h](#)

### 5.1.2 Function Documentation

5.1.2.1 globus\_result\_t [globus\\_gass\\_copy\\_handle\\_init](#) (globus\_gass\_copy\_handle\_t handle, globus\_gass\_copy\_handleattr\_t attr)

Initialize a GASS Copy handle.



A `globus_gass_copy_handle` must be initialized before any transfers may be associated with it. This function initializes a `globus_gass_copy_handle` to be used for doing transfers, this includes initializing a `globus_ftp_client_handle` which will be used for doing any ftp/gsiftp transfers. The same handle may be used to perform multiple, consecutive transfers. However, there can only be one transfer associated with a particular handle at any given time. After all transfers to be associated with this handle have completed, the handle should be destroyed by calling [globus\\_gass\\_copy\\_handle\\_destroy\(\)](#).

**Parameters:**

`handle` The handle to be initialized  
`attr` The handle attributes used to use with this handle

**Returns:**

This function returns `GLOBUS_SUCCESS` if successful, or a `globus_result_t` indicating the error that occurred.

**See also:**

[globus\\_gass\\_copy\\_handle\\_destroy\(\)](#), [globus\\_gass\\_copy\\_handleattr\\_init\(\)](#), [globus\\_ftp\\_client\\_handle\\_init\(\)](#)

### 5.1.2.2 `globus_result_t globus_gass_copy_handle_destroy (globus_gass_copy_handle handle)`

Destroy a GASS Copy handle.

Destroy a `gass_copy_handle`, which was initialized using [globus\\_gass\\_copy\\_handle\\_init\(\)](#) that will no longer be used for doing transfers. Once the handle is destroyed, no further transfers should be associated with it.

**Parameters:**

`handle` The handle to be destroyed

**Returns:**

This function returns `GLOBUS_SUCCESS` if successful, or a `globus_result_t` indicating the error that occurred.

**See also:**

[globus\\_gass\\_copy\\_handle\\_init\(\)](#), [globus\\_ftp\\_client\\_handle\\_destroy\(\)](#)

### 5.1.2.3 `globus_result_t globus_gass_copy_set_buffer_length (globus_gass_copy_handle handle, int length)`

Set the size of the buffer to be used for doing transfers.

This function allows the user to set the size of the buffer that will be used for doing transfers, if this function is not called the buffer size will default to 1M.

**Parameters:**

`handle` Set the buffer length for transfers associated with this handle.  
`length` The length, in bytes, to make the buffer.

**Returns:**

This function returns `GLOBUS_SUCCESS` if successful, or a `globus_result_t` indicating the error that occurred.

5.1.2.4 `globus_result_t globus_gass_copy_get_buffer_length (globus_gass_copy_handle_t handle, int length)`

Get the size of the buffer being used for doing transfers.

This function allows the user to get the size of the buffer that is being used for doing transfers.

Parameters:

`handle` Get the buffer length for transfers associated with this handle.

`length` The length, in bytes, of the buffer.

Returns:

This function returns `GLOBUS_SUCCESS` if successful, or a `globus_result_t` indicating the error that occurred.

5.1.2.5 `globus_result_t globus_gass_copy_set_no_third_party_transfers (globus_gass_copy_handle_t handle, globus_bool_t no_third_party_transfers)`

Turn third-party transfers on or off.

(They are on by default.)

This function allows the user to turn third-party transfers on or off for ftp to ftp transfers associated with a particular handle. This is often desired if one of the servers involved in the transfer does not allow third-party transfers.

Parameters:

`handle` Turn third-party transfers on or off for transfers associated with this handle. They are on by default.

`no_third_party_transfers` `GLOBUS_FALSE` if third-party transfers should be used. `GLOBUS_TRUE` if third-party transfers should not be used.

Returns:

This function returns `GLOBUS_SUCCESS` if successful, or a `globus_result_t` indicating the error that occurred.

5.1.2.6 `globus_result_t globus_gass_copy_get_no_third_party_transfers (globus_gass_copy_handle_t handle, globus_bool_t no_third_party_transfers)`

See if third-party transfers are turned on or off.

(They are on by default.)

This function allows the user to see if third-party transfers are turned on or off for ftp to ftp transfers associated with a particular handle. This is often desired if one of the servers involved in the transfer does not allow third-party transfers.

Parameters:

`handle` See if third-party transfers are turned on or off for transfers associated with this handle. They are on by default.

`no_third_party_transfers` `GLOBUS_FALSE` if third-party transfers should be used. `GLOBUS_TRUE` if third-party transfers should not be used.

Returns:

This function returns `GLOBUS_SUCCESS` if successful, or a `globus_result_t` indicating the error that occurred.

5.1.2.7 `globus_result_t globus_gass_copy_set_allocate (globus_gass_copy_handle_t handle, globus_bool_t send_all)`

Set allo on or off.

5.1.2.8 `globus_result_t globus_gass_copy_set_partial_offsets (globus_gass_copy_handle_t handle, globus_off_t offset, globus_off_t end_offset)`

Set the offsets to be used for doing partial transfers.

This function allows the user to set the offsets that will be used for doing partial transfers. An offset of -1 will disable partial transfers. An end\_offset of -1 means EOF.

Parameters:

handle Set the offsets for partial transfers associated with this handle.

offset The starting offset for the partial transfer.

end\_offset The ending offset for the partial transfer.

Returns:

This function returns GLOBUS\_SUCCESS if successful, or a globus\_result\_t indicating the error that occurred.

5.1.2.9 `globus_result_t globus_gass_copy_get_partial_offsets (globus_gass_copy_handle_t handle, globus_off_t offset, globus_off_t end_offset)`

Get the offsets being used for doing partial transfers.

This function allows the user to get the offsets that are being used for doing partial transfers. An offset of -1 means partial transfers are disabled.

Parameters:

handle Get the offsets for partial transfers associated with this handle.

offset The starting offset for the partial transfer.

end\_offset The ending offset for the partial transfer.

Returns:

This function returns GLOBUS\_SUCCESS if successful, or a globus\_result\_t indicating the error that occurred.

5.1.2.10 `globus_result_t globus_gass_copy_attr_init (globus_gass_copy_attr_t attr)`

Initialize an attribute structure.

The globus\_gass\_copy\_attr\_t can be used to pass the globus\_gass\_copy library information about how a transfer should be performed. It must first be initialized by calling this function. Then any or all of the following functions may be called to set attributes associated with a particular protocol: [globus\\_gass\\_copy\\_attr\\_set\\_file](#), [globus\\_gass\\_copy\\_attr\\_set\\_gass](#), [globus\\_gass\\_copy\\_attr\\_set\\_io](#). Any function which takes a globus\_gass\_copy\_attr\_t as an argument will also accept GLOBUS\_NULL, in which case the appropriate set of default attributes will be used.

Parameters:

attr The attribute structure to be initialized

Returns:

This function returns GLOBUS\_SUCCESS if successful, or a globus\_result\_t indicating the error that occurred.

See also:

[globus\\_gass\\_copy\\_attr\\_set\\_ftp](#), [globus\\_gass\\_copy\\_attr\\_set\\_gass](#), [globus\\_gass\\_copy\\_attr\\_set\\_io](#), [globus\\_gass\\_copy\\_get\\_url\\_mode](#)

5.1.2.11 `globus_result_t globus_gass_copy_attr_set_ftp (globus_gass_copy_attr_t attr, globus_ftp_client_operationattr_t ftp_attr)`

Set the attributes for ftp/gsiftp transfers.

In order to specify attributes for ftp/gsiftp transfers, a `globus_ftp_client_operationattr_t` should be initialized and its values set using the appropriate `globus_ftp_client_operationattr` functions. The `globus_ftp_client_operationattr_t` can then be passed to the `globus_gass_copy_attr_t` via this function.

Parameters:

attr A `globus_gass_copy` attribute structure

ftp\_attr The ftp/gsiftp attributes to be used

Returns:

This function returns `GLOBUS_SUCCESS` if successful, or a `globus_result_t` indicating the error that occurred.

See also:

[globus\\_gass\\_copy\\_attr\\_init](#), [globus\\_gass\\_copy\\_attr\\_set\\_gass](#), [globus\\_gass\\_copy\\_attr\\_set\\_io](#), [globus\\_gass\\_copy\\_get\\_url\\_mode](#), [globus\\_ftp\\_client\\_operationattr](#)

5.1.2.12 `globus_result_t globus_gass_copy_attr_set_io (globus_gass_copy_attr_t attr, globus_io_attr_t io_attr)`

Set the attributes for le transfers.

In order to specify attributes for le transfers, a `globus_io_attr_t` should be initialized and its values set using the appropriate `globus_io_attr` functions. The `globus_io_attr_t` can then be passed to the `globus_gass_copy_attr_t` via this function.

Parameters:

attr A `globus_gass_copy` attribute structure

io\_attr The le attributes to be used

Returns:

This function returns `GLOBUS_SUCCESS` if successful, or a `globus_result_t` indicating the error that occurred.

See also:

[globus\\_gass\\_copy\\_attr\\_init](#), [globus\\_gass\\_copy\\_attr\\_set\\_gass](#), [globus\\_gass\\_copy\\_attr\\_set\\_ftp](#), [globus\\_gass\\_copy\\_get\\_url\\_mode](#), [globus\\_io\\_attr](#)

5.1.2.13 `globus_result_t globus_gass_copy_attr_set_gass (globus_gass_copy_attr_t attr, globus_gass_transfer_requestattr_t gass_attr)`

Set the attributes for http/https transfers.

In order to specify attributes for http/https transfers, a `globus_gass_transfer_requestattr_t` should be initialized and its values set using the appropriate `globus_gass_transfer_requestattr` functions. The `globus_gass_transfer_requestattr_t` can then be passed to the `globus_gass_copy_attr_t` via this function.

## Parameters:

attr A globus\_gass\_copy attribute structure  
gass attr The http/https attributes to be used

## Returns:

This function returns `GLOBUS_SUCCESS` if successful, or a `globus_result_t` indicating the error that occurred.

See also:

```

globus_gass_copy_attr_init(globus_gass_copy_attr_set_io(globus_gass_copy_attr_set_ftpd(globus_gass_
copy_get_url_mode(globus_gass_transfer_requestattr_

```

#### 5.1.2.14 globus\_result\_t globus\_gass\_copy\_get\_url\_mode (char url, globus\_gass\_copy\_url\_mode\_t mode)

Classify the URL schema into the transfer method that will be used to do the actual transfer.

This function enables the user to determine what protocol will be used to transfer data to/from a particular url. This information can then be used to specify the appropriate attributes when initiating a transfer.

## Parameters:

url The URL for schema checking  
mode the lled in schema type of the URL param

## Returns:

This function returns `GLOBUS_SUCCESS` if successful, or a `globus_result_t` indicating the error that occurred.

See also:

```
globus_gass_copy_attr_init(&globus_gass_copy_attr_set_io), &globus_gass_copy_attr_set_ftpd, &globus_gass_copy_set_gass())
```

5.1.2.15 globus\_result\_t globus\_gass\_copy\_register\_performance\_cb (globus\_gass\_copy\_handle handle, globus\_gass\_copy\_performance\_cb callback void user arg)

Register a performance information callback.

Use this to register a performance information callback. You change or set to GLOBUS\_NULL the callback any time a transfer is not occurring.

## Parameters:

handle an initialized gass copy handle for which you would like to see performance info  
callback the performance callback  
user\_arg a user pointer that will be passed to all callbacks for a given handle

## Returns:

- GLOBUS\_SUCCESS
- error on a NULL or busy handle

See also:

globus gass copy performance cb t

5.1.2.16 `globus_result_t globus_gass_copy_get_status (globus_gass_copy_handle_t handle, globus_gass_copy_status_t status)`

Get the status code of the current transfer.

Get the status of the last transfer to be initiated using the given handle. Only one transfer can be active on a handle at a given time, therefore new transfers may only be initiated when the current status is one of the following: `GLOBUS_GASS_COPY_STATUS_NONE`, `GLOBUS_GASS_COPY_STATUS_DONE_SUCCESS`, `GLOBUS_GASS_COPY_STATUS_DONE_FAILURE`, `GLOBUS_GASS_COPY_STATUS_DONE_CANCELLED`

Parameters:

handle A `globus_gass_copy_handle`

status Will be one of the following: `GLOBUS_GASS_COPY_STATUS_NONE` (No transfers have been initiated using this handle.) `GLOBUS_GASS_COPY_STATUS_PENDING` (A transfer is currently being set up.) `GLOBUS_GASS_COPY_STATUS_TRANSFER_IN_PROGRESS` (There is currently a transfer in progress.) `GLOBUS_GASS_COPY_STATUS_CANCEL` (The last transfer initiated using this handle has been cancelled by the user before completing, and is in the process of being cleaned up.) `GLOBUS_GASS_COPY_STATUS_FAILURE` (The last transfer initiated using this handle failed, and is in the process of being cleaned up.) `GLOBUS_GASS_COPY_STATUS_DONE_SUCCESS` (The last transfer initiated using this handle has completed successfully.) `GLOBUS_GASS_COPY_STATUS_DONE_FAILURE` (The last transfer initiated using this handle failed and has finished cleaning up.) `GLOBUS_GASS_COPY_STATUS_DONE_CANCELLED` (The last transfer initiated using this handle was cancelled and has finished cleaning up.)

Returns:

This function returns `GLOBUS_SUCCESS` if successful, or a `globus_result_t` indicating the error that occurred.

5.1.2.17 `const char globus_gass_copy_get_status_string (globus_gass_copy_handle_t handle)`

Get the status string of the current transfer.

Get the status of the last transfer to be initiated using the given handle. Only one transfer can be active on a handle at a given time, therefore new transfers may only be initiated when the current status is one of the following: `GLOBUS_GASS_COPY_STATUS_NONE`, `GLOBUS_GASS_COPY_STATUS_DONE_SUCCESS`, `GLOBUS_GASS_COPY_STATUS_DONE_FAILURE`, `GLOBUS_GASS_COPY_STATUS_DONE_CANCELLED`

Parameters:

handle A `globus_gass_copy_handle`

Returns:

Returns a pointer to a character string describing the current status

5.1.2.18 `globus_result_t globus_gass_copy_url_to_url (globus_gass_copy_handle_t handle, char source_url, globus_gass_copy_attr_t source_attr, char dest_url, globus_gass_copy_attr_t dest_attr)`

Transfer data from source URL to destination URL (blocking).

Parameters:

handle The handle to perform the copy operation

source\_url transfer data from this URL

source\_attr Attributes describing how the transfer from the source should be done

dest\_url transfer data to this URL

dest\_attr Attributes describing how the transfer to the destination should be done

Returns:

This function returns GLOBUS\_SUCCESS if the transfer was completed successfully, or a result pointing to an object of one of the the following error types:

Return values:

GLOBUS\_GASS\_COPY\_ERROR\_TYPE\_NULL\_PARAMETER The handle was equal to GLOBUS\_NULL, so the transfer could not processed.

GLOBUS\_GASS\_COPY\_ERROR\_TYPE\_next\_err next error description

See also:

[globus\\_gass\\_copy\\_url\\_to\\_handle\(\)](#) [globus\\_gass\\_copy\\_handle\\_to\\_url\(\)](#)

5.1.2.19 globus\_result\_t globus\_gass\_copy\_url\_to\_handle (globus\_gass\_copy\_handle\_t handle, char source\_url globus\_gass\_copy\_attr\_t source\_attr globus\_io\_handle\_t dest\_handle)

Transfer data from source URL to an IO handle (blocking).

Parameters:

handle The handle to perform the copy operation

source\_url transfer data from this URL

source\_attr Attributes describing how the transfer form the source should be done

dest\_handle transfer data to this IO handle

Returns:

This function returns GLOBUS\_SUCCESS if the transfer was completed successfully, or a result pointing to an object of one of the the following error types:

Return values:

GLOBUS\_GASS\_COPY\_ERROR\_TYPE\_NULL\_PARAMETER The handle was equal to GLOBUS\_NULL, so the transfer could not processed.

GLOBUS\_GASS\_COPY\_ERROR\_TYPE\_next\_err next error description

See also:

[globus\\_gass\\_copy\\_url\\_to\\_url\(\)](#) [globus\\_gass\\_copy\\_handle\\_to\\_url\(\)](#)

5.1.2.20 globus\_result\_t globus\_gass\_copy\_handle\_to\_url (globus\_gass\_copy\_handle\_t handle, globus\_io\_handle\_t source\_handle char dest\_url globus\_gass\_copy\_attr\_t dest\_attr)

Transfer data from an IO handle to destination URL (blocking).

Parameters:

handle The handle to perform the copy operation

source\_handle transfer data from this IO handle

dest\_url transfer data to this URL

dest\_attr Attributes describing how the transfer to the destination should be done

**Returns:**

This function returns GLOBUS\_SUCCESS if the transfer was completed successfully, or a result pointing to an object of one of the the following error types:

**Return values:**

GLOBUS\_GASS\_COPY\_ERROR\_TYPE\_NULL\_PARAMETER The handle was equal to GLOBUS\_NULL, so the transfer could not processed.

GLOBUS\_GASS\_COPY\_ERROR\_TYPE\_next\_err next error description

**See also:**

[globus\\_gass\\_copy\\_url\\_to\\_url\(\)](#) [globus\\_gass\\_copy\\_url\\_to\\_handle\(\)](#)

5.1.2.21 `globus_result_t globus_gass_copy_register_url_to_url (globus_gass_copy_handle_t handle, char source_url globus_gass_copy_attr_t source_attr char dest_url globus_gass_copy_attr_t dest_attr globus_gass_copy_callback_t callback_func void callback_arg)`

Transfer data from source URL to destination URL (non-blocking).

This functions initiates a transfer from source URL to destination URL, then returns immediately.

When the transfer is completed or if the transfer is aborted, the callback\_func will be invoked with the final status of the transfer.

**Parameters:**

handle The handle to perform the copy operation

source\_url transfer data from this URL

source\_attr Attributes describing how the transfer form the source should be done

dest\_url transfer data to this URL

dest\_attr Attributes describing how the transfer to the destination should be done

callback\_func Callback to be invoked once the transfer is completed.

callback\_arg Argument to be passed to the callback\_func.

**Returns:**

This function returns GLOBUS\_SUCCESS if the transfer was initiated successfully, or a result pointing to an object of one of the the following error types:

**Return values:**

GLOBUS\_GASS\_COPY\_ERROR\_TYPE\_NULL\_PARAMETER The handle was equal to GLOBUS\_NULL, so the transfer could not processed.

GLOBUS\_GASS\_COPY\_ERROR\_TYPE\_next\_err next error description

**See also:**

[globus\\_gass\\_copy\\_register\\_url\\_to\\_handle\(\)](#) [globus\\_gass\\_copy\\_register\\_handle\\_to\\_url\(\)](#)

5.1.2.22 `globus_result_t globus_gass_copy_register_url_to_handle (globus_gass_copy_handle_t handle, char source_url globus_gass_copy_attr_t source_attr globus_io_handle_t dest_handle globus_gass_copy_callback_t callback_func void callback_arg)`

Transfer data from source URL to an IO handle (non-blocking).

This functions initiates a transfer from source URL to an IO handle, then returns immediately.

When the transfer is completed or if the transfer is aborted, the callback\_func will be invoked with the final status of the transfer.



**Parameters:**

handle The handle to perform the copy operation  
 source\_url transfer data from this URL  
 source\_attr Attributes describing how the transfer from the source should be done  
 dest\_handle transfer data to this IO handle  
 callback\_func Callback to be invoked once the transfer is completed.  
 callback\_arg Argument to be passed to the callback\_func.

**Returns:**

This function returns GLOBUS\_SUCCESS if the transfer was initiated successfully, or a result pointing to an object of one of the the following error types:

**Return values:**

GLOBUS\_GASS\_COPY\_ERROR\_TYPE\_NULL\_PARAMETER The handle was equal to GLOBUS\_NULL,  
 so the transfer could not processed.  
 GLOBUS\_GASS\_COPY\_ERROR\_TYPE\_next\_error next error description

**See also:**

[globus\\_gass\\_copy\\_register\\_url\\_to\\_url\(\)](#) [globus\\_gass\\_copy\\_register\\_handle\\_to\\_url\(\)](#)

5.1.2.23 globus\_result\_t globus\_gass\_copy\_register\_handle\_to\_url (globus\_gass\_copy\_handle\_t handle, globus\_io\_handle\_t source\_handle, char dest\_url, globus\_gass\_copy\_attr\_t dest\_attr, globus\_gass\_copy\_callback\_t callback\_func, void callback\_arg)

Transfer data from an IO handle to destination URL (non-blocking).

This functions initiates a transfer from an IO handle to destination URL, then returns immediately.

When the transfer is completed or if the transfer is aborted, the callback\_func will be invoked with the final status of the transfer.

**Parameters:**

handle The handle to perform the copy operation  
 source\_handle transfer data from this IO handle  
 dest\_url transfer data to this URL  
 dest\_attr Attributes describing how the transfer to the destination should be done  
 callback\_func Callback to be invoked once the transfer is completed.  
 callback\_arg Argument to be passed to the callback\_func.

**Returns:**

This function returns GLOBUS\_SUCCESS if the transfer was initiated successfully, or a result pointing to an object of one of the the following error types:

**Return values:**

GLOBUS\_GASS\_COPY\_ERROR\_TYPE\_NULL\_PARAMETER The handle was equal to GLOBUS\_NULL,  
 so the transfer could not processed.  
 GLOBUS\_GASS\_COPY\_ERROR\_TYPE\_next\_error next error description

**See also:**

[globus\\_gass\\_copy\\_register\\_url\\_to\\_url\(\)](#) [globus\\_gass\\_copy\\_register\\_url\\_to\\_handle\(\)](#)

#### 5.1.2.24 globus\_result\_t globus\_gass\_copy\_cache\_url\_state (globus\_gass\_copy\_handle handle, char url)

Cache connections to an FTP or GSIFTP server.

Explicitly cache connections to URL server. When an URL is cached, the connection to the URL server will not be closed after a file transfer completes.

Parameters:

handle Handle which will contain a cached connection to the URL server.

url The URL of the FTP or GSIFTP server to cache.

Returns:

This function returns GLOBUS\_SUCCESS if successful, or a globus\_result\_t indicating the error that occurred.

#### 5.1.2.25 globus\_result\_t globus\_gass\_copy\_ush\_url\_state (globus\_gass\_copy\_handle handle, char url)

Remove a cached connection to an FTP or GSIFTP server.

Explicitly remove a cached connection to an FTP or GSIFTP server. If an idle connection to an FTP server exists, it will be closed.

Parameters:

handle Handle which contains a cached connection to the URL server.

url The URL of the FTP or GSIFTP server to remove.

Returns:

This function returns GLOBUS\_SUCCESS if successful, or a globus\_result\_t indicating the error that occurred.

#### 5.1.2.26 globus\_result\_t globus\_gass\_copy\_set\_user\_pointer (globus\_gass\_copy\_handle handle, void user\_pointer)

Set a pointer in the handle to point at user-allocated memory.

#### 5.1.2.27 globus\_result\_t globus\_gass\_copy\_get\_user\_pointer (globus\_gass\_copy\_handle handle, void user\_data)

Get the pointer in the handle that points to user-allocated memory.

#### 5.1.2.28 globus\_result\_t globus\_gass\_copy\_cancel (globus\_gass\_copy\_handle handle, globus\_gass\_copy\_callback\_t cancel\_callback, void cancel\_callback\_arg)

Cancel the current transfer associated with this handle,.

store the cancel\_callback and cancel\_callback\_arg in the handle. Needed because the ftp callback will be the one given from the original globus\_ftp\_client\_third\_party\_transfer() call.

#### 5.1.2.29 globus\_result\_t globus\_gass\_copy\_target\_cancel (globus\_gass\_copy\_handle handle, globus\_gass\_copy\_cancel\_info\_t cancel\_info)

Cancel the source or destination transfer in progress.

## 5.2 globus\_gass\_copy.h File Reference

Header file for the gass copy library.

### Data Structures

- struct [globus\\_gass\\_copy\\_glob\\_stat\\_t](#)  
Glob expanded entry information.

### Defines

- #define [GLOBUS\\_GASS\\_COPY\\_MODULE](#) (&globus\_i\_gass\_copy\_module)

### Typedefs

- typedef void( [globus\\_gass\\_copy\\_performance\\_cb](#))(void user\_arg, globus\_gass\_copy\_handle handle, globus\_off\_t total\_bytes, oat instantaneous\_throughput, oat avg\_throughput)
- typedef void( [globus\\_gass\\_copy\\_glob\\_entry\\_cb](#))(const char url, const [globus\\_gass\\_copy\\_glob\\_stat\\_t](#) info\_stat, void user\_arg)

### Enumerations

- enum [globus\\_gass\\_copy\\_glob\\_entry\\_t](#)

### Functions

- globus\_result\_t [globus\\_gass\\_copy\\_glob\\_expand](#)(globus\_gass\_copy\_handle handle, const char url, globus\_gass\_copy\_attr\_attr, [globus\\_gass\\_copy\\_glob\\_entry\\_cb](#), void user\_arg)
- globus\_result\_t [globus\\_gass\\_copy\\_mkdglob](#)(globus\_gass\_copy\_handle handle, char url, globus\_gass\_copy\_attr\_t attr)

#### 5.2.1 Detailed Description

Header file for the gass copy library.

#### 5.2.2 Define Documentation

##### 5.2.2.1 #define GLOBUS\_GASS\_COPY\_MODULE (&globus\_i\_gass\_copy\_module)

Module descriptor.

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

```
globus_module_activate(GLOBUS_GASS_COPY_MODULE)
```

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

To deactivate Globus GASS Copy, the following function must be called:

```
globus_module_deactivate(GLOBUS_GASS_COPY_MODULE)
```

This function should be called once for each time Globus GASS Copy was activated.

### 5.2.3 Typedef Documentation

5.2.3.1 typedef void( [globus\\_gass\\_copy\\_performance\\_cb](#))(void user\_arg, globus\_gass\_copy\_handle\_t handle, globus\_off\_t total\_bytes, oat instantaneous\_throughput, oat avg\_throughput)

Gass copy transfer performance callback.

This callback is registered with 'globus\_gass\_copy\_register\_performance\_cb' It will be called during a transfer to supply performance information on current transfer. Its frequency will be at most one per second, but it is possible to receive no callbacks. This is possible in very short transfers and in ftp transfers in which the server does not provide performance information.

Parameters:

- handle the gass copy handle this transfer is occurring on
- user\_arg a user pointer registered with 'globus\_gass\_copy\_register\_performance\_cb'
- total\_bytes the total number of bytes transfer so far
- instantaneous\_throughput instantaneous rate of transfer (since last callback or start) (bytes / sec)
- avg\_throughput the avg throughput calculated since the start of the transfer (bytes / sec)

Returns:

- n/a

5.2.3.2 typedef void( [globus\\_gass\\_copy\\_glob\\_entry\\_cb](#))(tconst char url, const [globus\\_gass\\_copy\\_glob\\_stat\\_t](#) info\_stat, void user\_arg)

Gass copy glob entry callback.

This callback is passed as a parameter to [globus\\_gass\\_copy\\_glob\\_expand\\_url\(\)](#). It is called once for each entry that the original expands to.

Parameters:

- url The full url to the expanded entry. A directory entry will end in a forward slash '/'.
- stat A pointer to a [globus\\_gass\\_copy\\_glob\\_stat\\_t](#) containing information about the entry.
- user\_arg The user\_arg passed to [globus\\_gass\\_copy\\_glob\\_expand\(\)](#)

See also:

[globus\\_gass\\_copy\\_glob\\_stat](#), [globus\\_gass\\_copy\\_glob\\_expand\\_url](#)

### 5.2.4 Enumeration Type Documentation

5.2.4.1 enum [globus\\_gass\\_copy\\_glob\\_entry\\_t](#)

globbed entry types

### 5.2.5 Function Documentation

5.2.5.1 `globus_result_t globus_gass_copy_glob_expand_url (globus_gass_copy_handle_t handle, const char url, globus_gass_copy_attr_t attr, globus_gass_copy_glob_entry_cb entry_cb, void user_arg)`

Expand globbed url.

This function expands wildcards in a globbed url, and calls `entry_cb()` on each one.

Parameters:

`handle` A gass copy handle to use for the operation.

`url` The URL to expand. The URL may be an ftp, gsiftp or `le` URL. Wildcard characters supported are '[?\*' ]' in the `lname` portion of the url.

`attr` Gass copy attributes for this operation.

`entry_cb` Function to call with information about each entry

`user_arg` An argument to pass to `entry_cb()`

Returns:

This function returns an error when any of these conditions are true:

- `handle` is `GLOBUS_NULL`
- `url` is `GLOBUS_NULL`
- `url` cannot be parsed
- `url` is not a ftp, gsiftp or `le` url

5.2.5.2 `globus_result_t globus_gass_copy_mkdir (globus_gass_copy_handle_t handle, char url, globus_gass_copy_attr_t attr)`

Make directory.

This function creates a directory given a ftp or `le` url.

Parameters:

`handle` A gass copy handle to use for the mkdir operation.

`url` The URL for the directory to create. The URL may be an ftp, gsiftp or `le` URL.

`attr` Gass copy attributes for this operation.

Returns:

This function returns an error when any of these conditions are true:

- `handle` is `GLOBUS_NULL`
- `url` is `GLOBUS_NULL`
- `url` cannot be parsed
- `url` is not a ftp, gsiftp or `le` url
- the directory could not be created

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  - globus\_i\_gass\_copy\_state\_target6\_s,
- queue
  - globus\_i\_gass\_copy\_state\_target6\_s,
- request
  - globus\_i\_gass\_copy\_state\_target6\_s,
- seekable
  - globus\_i\_gass\_copy\_state\_target6\_s,
- size
  - globus\_gass\_copy\_glob\_stat3t,
- source
  - globus\_gass\_copy\_state3s,
- status
  - globus\_i\_gass\_copy\_state\_target6\_s,
- symlink\_target
  - globus\_gass\_copy\_glob\_stat2t,
- type
  - globus\_gass\_copy\_glob\_stat2t,
- unique\_id
  - globus\_gass\_copy\_glob\_stat2t,
- url
  - globus\_i\_gass\_copy\_state\_target6\_s,