vdsf C++ API Reference Manual

0.3.0

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4 vdsf C++ API Directory Documentation

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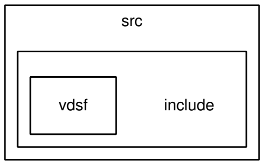

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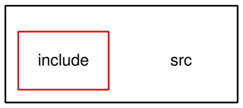
- directory vdsf

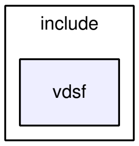
4.2 /home/project/VDSF/vdsf/trunk/src/ Directory Reference



Directories

- directory include

4.3 /home/project/VDSF/vdsf/trunk/src/include/vdsf/ Directory Reference



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5 vdsf C++ API Class Documentation

5.1 vdsException Class Reference

Public Member Functions

- vdsException (int theErrorCode, VDS_HANDLE sessionHandle, const char ∗functionName)

Construct a vdsf exception using the return code from the C function and the name of the function throwing it.

- virtual ∼vdsException ()
- std::string & Message (std::string &errorMessage)

  Return the error message.

- std::string & Message ()

  Return the error message.

- int ErrorCode ()

  Return the error code associated with the exception.

Private Attributes

- std::string msg
- int errcode

5.1.1 Constructor & Destructor Documentation

5.1.1.1 vdsException::vdsException (int *theErrorCode*, VDS_HANDLE *sessionHandle*, const char ∗ *functionName*)

Construct a vdsf exception using the return code from the C function and the name of the function throwing it.

5.1.1.2 virtual vdsException::∼vdsException () `[virtual]`

5.1.2 Member Function Documentation

5.1.2.1 int vdsException::ErrorCode () `[inline]`

Return the error code associated with the exception.

5.1.2.2 std::string& vdsException::Message ()

Return the error message.

5.1.2.3 std::string& vdsException::Message (std::string & *errorMessage*)

Return the error message.

5.1.3 Member Data Documentation

5.1.3.1 int vdsException::errcode `[private]`

5.1.3.2 std::string vdsException::msg `[private]`

The documentation for this class was generated from the following file:

- /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsException

5.2 vdsFolder Class Reference

Public Member Functions

- vdsFolder (vdsSession &session)
- virtual ∼vdsFolder ()
- void Close ()

  Close a folder.

- int GetFirst (vdsFolderEntry ∗pEntry)

  Iterate through the folder - no data items are removed from the folder by this function.

- int GetNext (vdsFolderEntry ∗pEntry)

  Iterate through the folder.

- void Open (const std::string &folderName)

  Open an existing folder (see vdsSession::CreateObject to create a new folder).

- void Open (const char ∗folderName, size_t nameLengthInBytes)

  Open an existing folder (see vdsSession::CreateObject to create a new folder).

- void Status (vdsObjStatus ∗pStatus)

  Return the status of the folder.

Private Attributes

- VDS_HANDLE m_objectHandle

  Pointer to the vdsaFolder struct.

- VDS_HANDLE & m_sessionHandle

  Reference to the vdsaSession struct (we belong to).

5.2.1 Constructor & Destructor Documentation

5.2.1.1 vdsFolder::vdsFolder (vdsSession & *session*)

5.2.1.2 virtual vdsFolder::∼vdsFolder () `[virtual]`

5.2.2 Member Function Documentation

5.2.2.1 void vdsFolder::Close ()

Close a folder.

This function terminates the current access to the folder in shared memory (the folder itself is untouched).

Exceptions:

vdsException An abnormal error occured.

5.2.2.2 int vdsFolder::GetFirst (vdsFolderEntry ∗ *pEntry*)

Iterate through the folder - no data items are removed from the folder by this function.

Data items which were added by another session and are not yet committed will not be seen by the iterator. Likewise, destroyed data items (even if not yet committed) are invisible.

Parameters:

→ ***pEntry*** The data structure provided by the user to hold the content of each item in the folder. Memory allocation for this buffer is the responsability of the caller.

Returns:

0 on success or VDS_IS_EMPTY if the folder is empty.

Exceptions:

vdsException An abnormal error occured.

5.2.2.3 int vdsFolder::GetNext (vdsFolderEntry ∗ *pEntry*)

Iterate through the folder.

Data items which were added by another session and are not yet committed will not be seen by the iterator. Likewise, destroyed data items (even if not yet committed) are invisible.

Evidently, you must call vdsFolder::GetFirst to initialize the iterator.

Parameters:

→ ***pEntry*** The data structure provided by the user to hold the content of each item in the folder. Memory allocation for this buffer is the responsability of the caller.

Returns:

0 on success or VDS_REACHED_THE_END when the iteration reaches the end of the folder.

Exceptions:

vdsException An abnormal error occured.

5.2.2.4 void vdsFolder::Open (const char ∗ *folderName*, size_t *nameLengthInBytes*)

Open an existing folder (see vdsSession::CreateObject to create a new folder).

Parameters:

← ***folderName*** The fully qualified name of the folder.

← ***nameLengthInBytes*** The length of *folderName* (in bytes) not counting the null terminator.

Exceptions:

vdsException An abnormal error occured.

5.2.2.5 void vdsFolder::Open (const std::string & *folderName*)

Open an existing folder (see vdsSession::CreateObject to create a new folder).

Parameters:

← ***folderName*** The fully qualified name of the folder.

Exceptions:

vdsException An abnormal error occured.

5.2.2.6 void vdsFolder::Status (vdsObjStatus ∗ *pStatus*)

Return the status of the folder.

Parameters:

→ ***pStatus*** A pointer to the status structure.

Exceptions:

vdsException An abnormal error occured.

5.2.3 Member Data Documentation

5.2.3.1 VDS_HANDLE vdsFolder::m_objectHandle `[private]`

Pointer to the vdsaFolder struct.

5.2.3.2 VDS_HANDLE& vdsFolder::m_sessionHandle `[private]`

Reference to the vdsaSession struct (we belong to).

The documentation for this class was generated from the following file:

- /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsFolder

5.3 vdsHashMap Class Reference

Public Member Functions

- vdsHashMap (vdsSession &session)
- virtual ∼vdsHashMap ()
- void Close ()

  Close a hash map.

- void Definition (vdsObjectDefinition ∗∗definition)

  Retrieve the data definition of the hash map.

- void Delete (const void ∗key, size_t keyLength)

  Remove the data item identified by the given key from the hash map.

- void Get (const void ∗key, size_t keyLength, void ∗buffer, size_t bufferLength, size_t ∗returnedLength)

  Retrieve the data item identified by the given key from the hash map.

- int GetFirst (void ∗key, size_t keyLength, void ∗buffer, size_t bufferLength, size_t ∗retKeyLength, size_t ∗retDataLength)

  Iterate through the hash map.

- int GetNext (void ∗key, size_t keyLength, void ∗buffer, size_t bufferLength, size_t ∗retKeyLength, size_t ∗retDataLength)

  Iterate through the hash map.

- void Insert (const void ∗key, size_t keyLength, const void ∗data, size_t dataLength)

  Insert a data element in the hash map.

- void Open (const std::string &hashMapName)

  Open an existing hash map (see vdsSession::CreateObject to create a new object).

- void Open (const char ∗hashMapName, size_t nameLengthInBytes)

  Open an existing hash map (see vdsSession::CreateObject to create a new object).

- void Replace (const void ∗key, size_t keyLength, const void ∗data, size_t dataLength)

  Replace a data element in the hash map.

- void Status (vdsObjStatus ∗pStatus)

  Return the status of the hash map.

Private Attributes

- VDS_HANDLE m_objectHandle

  Pointer to the vdsaHashMap struct.

- VDS_HANDLE & m_sessionHandle

  Reference to the vdsaSession struct (we belong to).

5.3.1 Constructor & Destructor Documentation

5.3.1.1 vdsHashMap::vdsHashMap (vdsSession & *session*)

5.3.1.2 virtual vdsHashMap::∼vdsHashMap () `[virtual]`

5.3.2 Member Function Documentation

5.3.2.1 void vdsHashMap::Close ()

Close a hash map.

This function terminates the current access to the hash map in shared memory (the hash map itself is untouched).

Warning:

Closing an object does not automatically commit or rollback data items that were inserted or removed. You still must use either vdsSession::Commit or vdsSession::Rollback to end the current unit of work.

Exceptions:

vdsException An abnormal error occured.

5.3.2.2 void vdsHashMap::Definition (vdsObjectDefinition ∗∗ *definition*)

Retrieve the data definition of the hash map.

Warning:

This function allocates a buffer to hold the definition (using malloc()). You must free it (with free()) when you no longer need the definition.

Parameters:

→ ***definition*** The buffer allocated by the API to hold the content of the object definition. Freeing the memory (with free()) is the responsability of the caller.

Exceptions:

vdsException An abnormal error occured.

5.3.2.3 void vdsHashMap::Delete (const void ∗ *key*, size_t *keyLength*)

Remove the data item identified by the given key from the hash map.

Data items which were added by another session and are not yet committed will not be seen by this function and cannot be removed. Likewise, destroyed data items (even if not yet committed) are invisible.

The removals only become permanent after a call to vdsSession::Commit.

Parameters:

← ***key*** The key of the item to be removed.

← ***keyLength*** The length of the *key* buffer (in bytes).

Exceptions:

vdsException An abnormal error occured.

5.3.2.4 void vdsHashMap::Get (const void ∗ *key*, size_t *keyLength*, void ∗ *buffer*, size_t *bufferLength*, size_t ∗ *returnedLength*)

Retrieve the data item identified by the given key from the hash map.

Data items which were added by another session and are not yet committed will not be seen by this function. Likewise, destroyed data items (even if not yet committed) are invisible.

Parameters:

← ***key*** The key of the item to be retrieved.

← ***keyLength*** The length of the *key* buffer (in bytes).

→ ***buffer*** The buffer provided by the user to hold the content of the data item. Memory allocation for this buffer is the responsability of the caller.

← ***bufferLength*** The length of *buffer* (in bytes).

→ ***returnedLength*** The actual number of bytes in the data item.

Exceptions:

vdsException An abnormal error occured.

5.3.2.5 int vdsHashMap::GetFirst (void ∗ *key*, size_t *keyLength*, void ∗ *buffer*, size_t *bufferLength*, size_t ∗ *retKeyLength*, size_t ∗ *retDataLength*)

Iterate through the hash map.

Data items which were added by another session and are not yet committed will not be seen by the iterator. Likewise, destroyed data items (even if not yet committed) are invisible.

Data items retrieved this way will not be sorted.

Parameters:

→ ***key*** The key buffer provided by the user to hold the content of the key associated with the first element. Memory allocation for this buffer is the responsability of the caller.

← ***keyLength*** The length of the *key* buffer (in bytes).

→ ***buffer*** The buffer provided by the user to hold the content of the first element. Memory allocation for this buffer is the responsability of the caller.

← ***bufferLength*** The length of *buffer* (in bytes).

→ ***retKeyLength*** The actual number of bytes in the key

→ ***retDataLength*** The actual number of bytes in the data item.

Returns:

0 on success or VDS_IS_EMPTY if the hash map is empty.

Exceptions:

vdsException An abnormal error occured.

5.3.2.6 int vdsHashMap::GetNext (void ∗ *key*, size_t *keyLength*, void ∗ *buffer*, size_t *bufferLength*, size_t ∗ *retKeyLength*, size_t ∗ *retDataLength*)

Iterate through the hash map.

Data items which were added by another session and are not yet committed will not be seen by the iterator. Likewise, destroyed data items (even if not yet committed) are invisible.

Evidently, you must call vdsHashMap::GetFirst to initialize the iterator. Not so evident - calling vdsHashMap::Get will reset the iteration to the data item retrieved by this function (they use the same internal storage). If this cause a problem, please let us know.

Data items retrieved this way will not be sorted.

Parameters:

→ ***key*** The key buffer provided by the user to hold the content of the key associated with the data element. Memory allocation for this buffer is the responsability of the caller.

← ***keyLength*** The length of the *key* buffer (in bytes).

→ ***buffer*** The buffer provided by the user to hold the content of the data element. Memory allocation for this buffer is the responsability of the caller.

← ***bufferLength*** The length of *buffer* (in bytes).

→ ***retKeyLength*** The actual number of bytes in the key

→ ***retDataLength*** The actual number of bytes in the data item.

Returns:

0 on success or VDS_REACHED_THE_END when the iteration reaches the end of the hash map.

Exceptions:

vdsException An abnormal error occured.

5.3.2.7 void vdsHashMap::Insert (const void ∗ *key*, size_t *keyLength*, const void ∗ *data*, size_t *dataLength*)

Insert a data element in the hash map.

The additions only become permanent after a call to vdsSession::Commit.

Parameters:

← ***key*** The key of the item to be inserted.

← ***keyLength*** The length of the *key* buffer (in bytes).

← ***data*** The data item to be inserted.

← ***dataLength*** The length of *data* (in bytes).

Exceptions:

vdsException An abnormal error occured.

5.3.2.8 void vdsHashMap::Open (const char ∗ *hashMapName*, size_t *nameLengthInBytes*)

Open an existing hash map (see vdsSession::CreateObject to create a new object).

Parameters:

← ***hashMapName*** The fully qualified name of the hash map.

← ***nameLengthInBytes*** The length of *hashMapName* (in bytes) not counting the null terminator.

Exceptions:

vdsException An abnormal error occured.

5.3.2.9 void vdsHashMap::Open (const std::string & *hashMapName*)

Open an existing hash map (see vdsSession::CreateObject to create a new object).

Parameters:

← ***hashMapName*** The fully qualified name of the hash map.

Exceptions:

vdsException An abnormal error occured.

5.3.2.10 void vdsHashMap::Replace (const void ∗ *key*, size_t *keyLength*, const void ∗ *data*, size_t *dataLength*)

Replace a data element in the hash map.

The replacements only become permanent after a call to vdsSession::Commit.

Parameters:

← ***key*** The key of the item to be replaced.

← ***keyLength*** The length of the *key* buffer (in bytes).

← ***data*** The new data item that will replace the previous data.

← ***dataLength*** The length of *data* (in bytes).

Exceptions:

vdsException An abnormal error occured.

5.3.2.11 void vdsHashMap::Status (vdsObjStatus ∗ *pStatus*)

Return the status of the hash map.

Parameters:

→ ***pStatus*** A pointer to the status structure.

Exceptions:

vdsException An abnormal error occured.

5.3.3 Member Data Documentation

5.3.3.1 VDS_HANDLE vdsHashMap::m_objectHandle `[private]`

Pointer to the vdsaHashMap struct.

5.3.3.2 VDS_HANDLE& vdsHashMap::m_sessionHandle `[private]`

Reference to the vdsaSession struct (we belong to).

The documentation for this class was generated from the following file:

- /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsHashMap

5.4 vdsProcess Class Reference

Public Member Functions

- vdsProcess ()
- void Init (const char ∗wdAddress, bool protectionNeeded=false)

  This function initializes access to a VDS.

- virtual ∼vdsProcess ()

  The destructor terminates all access to the VDS.

5.4.1 Constructor & Destructor Documentation

5.4.1.1 vdsProcess::vdsProcess ()

5.4.1.2 virtual vdsProcess::∼vdsProcess () `[virtual]`

The destructor terminates all access to the VDS.

This function will also close all sessions and terminate all accesses to the different objects.

5.4.2 Member Function Documentation

5.4.2.1 void vdsProcess::Init (const char ∗ *wdAddress*, bool *protectionNeeded* = `false`)

This function initializes access to a VDS.

It takes 2 input arguments, the address of the watchdog and a boolean value. This last one indicates if sessions and other objects (Queues, etc) are shared amongst threads (in the current process) and must be protected. Recommendation: always set protectionNeeded to false unless you cannot do otherwise. In other words it is recommended to use one session object for each thread. Also if the same queue needs to be accessed by two threads it is more efficient to have two different objects instead of sharing a single one.

[Additional note: API objects (or C handles) are just proxies for the real objects sitting in shared memory. Proper synchronization is already done in shared memory and it is best to avoid to synchronize these proxy objects.]

Parameters:

← ***wdAddress*** The address of the watchdog. Currently a string with the port number ("12345").

← ***protectionNeeded*** A boolean value indicating if multi-threaded locks are needed or not.

Exceptions:

vdsException An abnormal error occured.

The documentation for this class was generated from the following file:

- /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsProcess

5.5 vdsQueue Class Reference

Public Member Functions

- vdsQueue (vdsSession &session)
- virtual ∼vdsQueue ()
- void Close ()

  Close a FIFO queue.

- void Definition (vdsObjectDefinition ∗∗definition)

  Retrieve the data definition of the queue.

- int GetFirst (void ∗buffer, size_t bufferLength, size_t ∗returnedLength)

  Iterate through the queue - no data items are removed from the queue by this function.

- int GetNext (void ∗buffer, size_t bufferLength, size_t ∗returnedLength)

  Iterate through the queue - no data items are removed from the queue by this function.

- void Open (const std::string &queueName)

  Open an existing FIFO queue (see Session::CreateObject to create a new queue).

- void Open (const char ∗queueName, size_t nameLengthInBytes)

  Open an existing FIFO queue (see Session::CreateObject to create a new queue).

- int Pop (void ∗buffer, size_t bufferLength, size_t ∗returnedLength)

  Remove the first item from the beginning of a FIFO queue and return it to the caller.

- void Push (const void ∗pItem, size_t length)

  Insert a data element at the end of the FIFO queue.

- void Status (vdsObjStatus ∗pStatus)

  Return the status of the queue.

Private Attributes

- VDS_HANDLE m_objectHandle

  Pointer to the vdsaQueue struct.

- VDS_HANDLE & m_sessionHandle

  Reference to the vdsaSession struct (we belong to).

5.5.1 Constructor & Destructor Documentation

5.5.1.1 vdsQueue::vdsQueue (vdsSession & *session*)

5.5.1.2 virtual vdsQueue::∼vdsQueue () `[virtual]`

5.5.2 Member Function Documentation

5.5.2.1 void vdsQueue::Close ()

Close a FIFO queue.

This function terminates the current access to the queue in shared memory (the queue itself, in shared memory is untouched).

Warning:

Closing an object does not automatically commit or rollback data items that were inserted or removed. You still must use either vdsSession::Commit or vdsSession::Rollback to end the current unit of work.

Exceptions:

vdsException An abnormal error occured.

5.5.2.2 void vdsQueue::Definition (vdsObjectDefinition ** *definition*)

Retrieve the data definition of the queue.

Warning:

This function allocates a buffer to hold the definition (using malloc()). You must free it (with free()) when you no longer need the definition.

Parameters:

$\rightarrow$ ***definition*** The buffer allocated by the API to hold the content of the object definition. Freeing the memory (with free()) is the responsability of the caller.

Exceptions:

vdsException An abnormal error occured.

5.5.2.3 int vdsQueue::GetFirst (void $*$ *buffer*, size_t *bufferLength*, size_t $*$ *returnedLength*)

Iterate through the queue - no data items are removed from the queue by this function.

Data items which were added by another session and are not yet committed will not be seen by the iterator. Likewise, destroyed data items (even if not yet committed) are invisible.

Parameters:

$\rightarrow$ ***buffer*** The buffer provided by the user to hold the content of the first element. Memory allocation for this buffer is the responsability of the caller.

$\leftarrow$ ***bufferLength*** The length of *buffer* (in bytes).

$\rightarrow$ ***returnedLength*** The actual number of bytes in the data item.

Returns:

0 on success or VDS_IS_EMPTY if the queue is empty.

Exceptions:

vdsException An abnormal error occured.

5.5.2.4 int vdsQueue::GetNext (void $*$ *buffer*, size_t *bufferLength*, size_t $*$ *returnedLength*)

Iterate through the queue - no data items are removed from the queue by this function.

Data items which were added by another session and are not yet committed will not be seen by the iterator. Likewise, destroyed data items (even if not yet committed) are invisible.

Evidently, you must call GetFirst to initialize the iterator. Not so evident - calling Pop will reset the iteration to the last element (they use the same internal storage). If this cause a problem, please let us know.

Parameters:

$\rightarrow$ ***buffer*** The buffer provided by the user to hold the content of the next element. Memory allocation for this buffer is the responsability of the caller.

$\leftarrow$ ***bufferLength*** The length of *buffer* (in bytes).

$\rightarrow$ ***returnedLength*** The actual number of bytes in the data item.

Returns:

0 on success or VDS_REACHED_THE_END when the iteration reaches the end of the queue.

Exceptions:

vdsException An abnormal error occured.

5.5.2.5 void vdsQueue::Open (const char $*$ *queueName*, size_t *nameLengthInBytes*)

Open an existing FIFO queue (see Session::CreateObject to create a new queue).

Parameters:

$\leftarrow$ ***queueName*** The fully qualified name of the queue.

$\leftarrow$ ***nameLengthInBytes*** The length of *queueName* (in bytes) not counting the null terminator.

Exceptions:

vdsException An abnormal error occured.

5.5.2.6 void vdsQueue::Open (const std::string & *queueName*)

Open an existing FIFO queue (see Session::CreateObject to create a new queue).

Parameters:

$\leftarrow$ ***queueName*** The fully qualified name of the queue.

Exceptions:

vdsException An abnormal error occured.

5.5.2.7 int vdsQueue::Pop (void $*$ *buffer*, size_t *bufferLength*, size_t $*$ *returned-Length*)

Remove the first item from the beginning of a FIFO queue and return it to the caller.

Data items which were added by another session and are not yet committed will not be seen by this function. Likewise, destroyed data items (even if not yet committed) are invisible.

The removals only become permanent after a call to vdsSession::Commit.

Parameters:

$\rightarrow$ ***buffer*** The buffer provided by the user to hold the content of the data item. Memory allocation for this buffer is the responsability of the caller.

$\leftarrow$ ***bufferLength*** The length of *buffer* (in bytes).

$\rightarrow$ ***returnedLength*** The actual number of bytes in the data item.

Returns:

0 on success or VDS_IS_EMPTY if the queue is empty or VDS_ITEM_IS_IN_-USE if all existing items are "invisible".

Exceptions:

vdsException An abnormal error occured.

5.5.2.8 void vdsQueue::Push (const void $*$ *pItem*, size_t *length*)

Insert a data element at the end of the FIFO queue.

The additions only become permanent after a call to vdsSession::Commit.

Parameters:

$\leftarrow$ ***pItem*** The data item to be inserted.

$\leftarrow$ ***length*** The length of *pItem* (in bytes).

Exceptions:

vdsException An abnormal error occured.

5.5.2.9 void vdsQueue::Status (vdsObjStatus $*$ *pStatus*)

Return the status of the queue.

Parameters:

→ ***pStatus*** A pointer to the status structure.

Exceptions:

vdsException An abnormal error occured.

5.5.3 Member Data Documentation

5.5.3.1 VDS_HANDLE vdsQueue::m_objectHandle `[private]`

Pointer to the vdsaQueue struct.

5.5.3.2 VDS_HANDLE& vdsQueue::m_sessionHandle `[private]`

Reference to the vdsaSession struct (we belong to).

The documentation for this class was generated from the following file:

- /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsQueue

5.6 vdsSession Class Reference

Public Member Functions

- vdsSession ()
- virtual ∼vdsSession ()

  Terminate the current session and destroy this object.

- void Commit ()

  Commit all insertions and deletions (of the current session) executed since the previous call to Commit or Rollback.

- void CreateObject (const std::string &objectName, vdsObjectDefinition ∗pDefinition)

  Create a new object in shared memory.

- void CreateObject (const char ∗objectName, size_t nameLengthInBytes, vdsObjectDefinition ∗pDefinition)

  Create a new object in shared memory.

- void DestroyObject (const std::string &objectName)

  Destroy an existing object in shared memory.

- void DestroyObject (const char ∗objectName, size_t nameLengthInBytes)

  Destroy an existing object in shared memory.

- void ErrorMsg (char ∗message, size_t msgLengthInBytes)

  Return the error message associated with the last error(s).

- std::string & ErrorMsg (std::string &message)

  Return the error message associated with the last error(s).

- void GetInfo (vdsInfo ∗pInfo)

  Return information on the current status of the VDS (Virtual Data Space).

- void GetStatus (const std::string &objectName, vdsObjStatus ∗pStatus)

  Return the status of the named object.

- void GetStatus (const char ∗objectName, size_t nameLengthInBytes, vdsObj-Status ∗pStatus)

  Return the status of the named object.

- void Init ()

  This function initializes a session.

- int LastError ()

  Return the last error seen in previous calls (of the current session).

- void Rollback ()

  Rollback all insertions and deletions (of the current session) executed since the previous call to Commit or Rollback.

Private Attributes

- VDS_HANDLE m_sessionHandle

  Pointer to the vdsaSession struct.

Friends

- class vdsFolder
- class vdsHashMap
- class vdsQueue

5.6.1 Constructor & Destructor Documentation

5.6.1.1 vdsSession::vdsSession ()

5.6.1.2 virtual vdsSession::∼vdsSession () `[virtual]`

Terminate the current session and destroy this object.

An implicit call to Rollback is executed by this destructor.

5.6.2 Member Function Documentation

5.6.2.1 void vdsSession::Commit ()

Commit all insertions and deletions (of the current session) executed since the previous call to Commit or Rollback.

Insertions and deletions subjected to this call include both data items inserted and deleted from data containers (maps, etc.) and objects themselves created with Create-Object and/or destroyed with DestroyObject.

Note: the internal calls executed by the engine to satisfy this request cannot fail. As such, you cannot find yourself with an ugly situation where some operations were committed and others not. If this function thows an exception, nothing was committed.

Exceptions:

vdsException An abnormal error occured.

5.6.2.2 void vdsSession::CreateObject (const char ∗ *objectName*, size_t *name-LengthInBytes*, vdsObjectDefinition ∗ *pDefinition*)

Create a new object in shared memory.

The creation of the object only becomes permanent after a call to Commit.

Parameters:

← ***objectName*** The fully qualified name of the object.

← ***nameLengthInBytes*** The length of *objectName* (in bytes) not counting the null terminator.

← ***pDefinition*** The type of object to create (folder, queue, etc.) and the optional definitions (as needed).

Exceptions:

vdsException An abnormal error occured.

5.6.2.3 void vdsSession::CreateObject (const std::string & *objectName*, vdsObjectDefinition $*$ *pDefinition*)

Create a new object in shared memory.

The creation of the object only becomes permanent after a call to Commit.

Parameters:

← ***objectName*** The fully qualified name of the object.

← ***pDefinition*** The type of object to create (folder, queue, etc.) and the optional definitions (as needed).

Exceptions:

vdsException An abnormal error occured.

5.6.2.4 void vdsSession::DestroyObject (const char $*$ *objectName*, size_t *nameLengthInBytes*)

Destroy an existing object in shared memory.

The destruction of the object only becomes permanent after a call to Commit.

Parameters:

← ***objectName*** The fully qualified name of the object.

← ***nameLengthInBytes*** The length of *objectName* (in bytes) not counting the null terminator.

Exceptions:

vdsException An abnormal error occured.

5.6.2.5 void vdsSession::DestroyObject (const std::string & *objectName*)

Destroy an existing object in shared memory.

The destruction of the object only becomes permanent after a call to Commit.

Parameters:

← ***objectName*** The fully qualified name of the object.

Exceptions:

vdsException An abnormal error occured.

5.6.2.6 std::string& vdsSession::ErrorMsg (std::string & *message*)

Return the error message associated with the last error(s).

Caveat, some basic errors cannot be captured, if the provided handles (session handles or object handles) are incorrect (NULL, for example). Without a proper handle, the code cannot know where to store the error...

Parameters:

→ ***message*** Buffer for the error message. Memory allocation for this buffer is the responsability of the caller.

Exceptions:

vdsException An abnormal error occured.

5.6.2.7 void vdsSession::ErrorMsg (char ∗ *message*, size_t *msgLengthInBytes*)

Return the error message associated with the last error(s).

If the length of the error message is greater than the length of the provided buffer, the error message will be truncated to fit in the provided buffer.

Caveat, some basic errors cannot be captured, if the provided handles (session handles or object handles) are incorrect (NULL, for example). Without a proper handle, the code cannot know where to store the error...

Parameters:

→ ***message*** Buffer for the error message. Memory allocation for this buffer is the responsability of the caller.

← ***msgLengthInBytes*** The length of *message* (in bytes). Must be at least 32 bytes.

Exceptions:

vdsException An abnormal error occured.

5.6.2.8 void vdsSession::GetInfo (vdsInfo ∗ *pInfo*)

Return information on the current status of the VDS (Virtual Data Space).

The fetched information is mainly about the current status of the memory allocator.

Parameters:

→ ***pInfo*** A pointer to the vdsInfo structure.

Exceptions:

vdsException An abnormal error occured.

5.6.2.9 void vdsSession::GetStatus (const char ∗ *objectName*, size_t *nameLengthInBytes*, vdsObjStatus ∗ *pStatus*)

Return the status of the named object.

Parameters:

← ***objectName*** The fully qualified name of the object.

← ***nameLengthInBytes*** The length of *objectName* (in bytes) not counting the null terminator.

→ ***pStatus*** A pointer to the vdsObjStatus structure.

Exceptions:

vdsException An abnormal error occured.

5.6.2.10 void vdsSession::GetStatus (const std::string & *objectName*, vdsObjStatus ∗ *pStatus*)

Return the status of the named object.

Parameters:

← ***objectName*** The fully qualified name of the object.

→ ***pStatus*** A pointer to the vdsObjStatus structure.

Exceptions:

vdsException An abnormal error occured.

5.6.2.11 void vdsSession::Init ()

This function initializes a session.

This function will also initiate a new transaction.

Upon normal termination, the current transaction is rolled back. You MUST explicitly call Commit to save your changes.

Exceptions:

vdsException An abnormal error occured.

5.6.2.12 int vdsSession::LastError ()

Return the last error seen in previous calls (of the current session).

Exceptions:

vdsException An abnormal error occured.

5.6.2.13 void vdsSession::Rollback ()

Rollback all insertions and deletions (of the current session) executed since the previous call to Commit or Rollback.

Insertions and deletions subjected to this call include both data items inserted and deleted from data containers (maps, etc.) and objects themselves created with Create-Object and/or destroyed with DestroyObject.

Note: the internal calls executed by the engine to satisfy this request cannot fail. As such, you cannot find yourself with an ugly situation where some operations were rollbacked and others not. If this function thows an exception, nothing was rollbacked.

Exceptions:

vdsException An abnormal error occured.

5.6.3 Friends And Related Function Documentation

5.6.3.1 friend class vdsFolder `[friend]`

5.6.3.2 friend class vdsHashMap `[friend]`

5.6.3.3 friend class vdsQueue `[friend]`

5.6.4 Member Data Documentation

5.6.4.1 VDS_HANDLE vdsSession::m_sessionHandle `[private]`

Pointer to the vdsaSession struct.

The documentation for this class was generated from the following file:

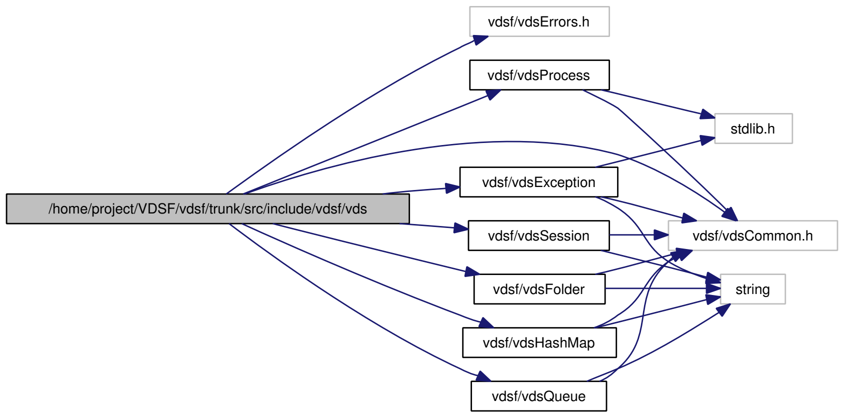
- /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsSession

6 vdsf C++ API File Documentation

6.1 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vds File Reference

```
#include <vdsf/vdsErrors.h>
#include <vdsf/vdsCommon.h>
#include <vdsf/vdsProcess>
#include <vdsf/vdsSession>
#include <vdsf/vdsFolder>
#include <vdsf/vdsHashMap>
#include <vdsf/vdsQueue>
#include <vdsf/vdsException>
```

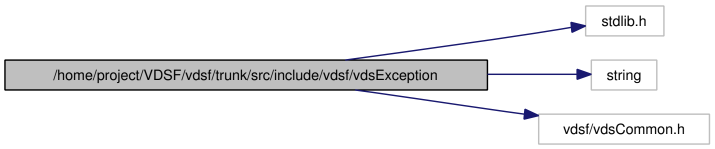
Include dependency graph for vds:



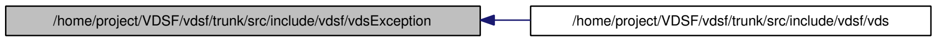
6.2 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vds-Exception File Reference

```
#include <stdlib.h>
#include <string>
#include <vdsf/vdsCommon.h>
```

Include dependency graph for vdsException:



This graph shows which files directly or indirectly include this file:


/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsException
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vds

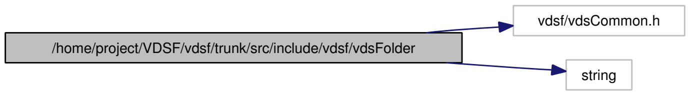
Classes

- class vdsException

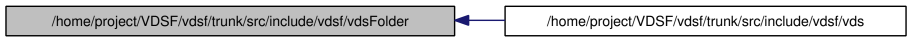
6.3 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsFolder File Reference

```
#include <vdsf/vdsCommon.h>
#include <string>
```

Include dependency graph for vdsFolder:



This graph shows which files directly or indirectly include this file:


/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsFolder
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vds

Classes

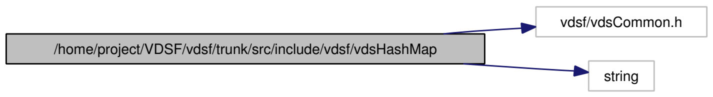
- class vdsFolder

6.4 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsHash-Map File Reference

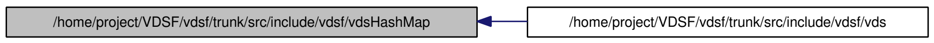
```
#include <vdsf/vdsCommon.h>
```

`#include <string>`

Include dependency graph for vdsHashMap:



This graph shows which files directly or indirectly include this file:


/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsHashMap
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vds

Classes

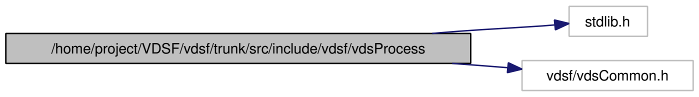
- class vdsHashMap

6.5 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsProcess File Reference

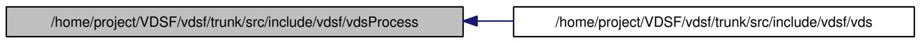
`#include <stdlib.h>`

`#include <vdsf/vdsCommon.h>`

Include dependency graph for vdsProcess:



This graph shows which files directly or indirectly include this file:


/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsProcess
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vds

Classes

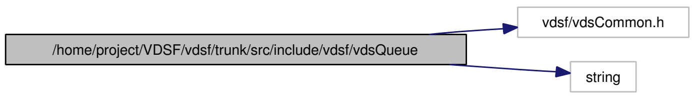
- class vdsProcess

6.6 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsQueue File Reference

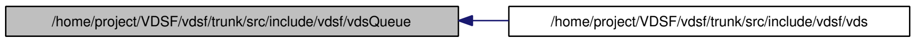
`#include <vdsf/vdsCommon.h>`

`#include <string>`

Include dependency graph for vdsQueue:



This graph shows which files directly or indirectly include this file:


/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsQueue
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vds

Classes

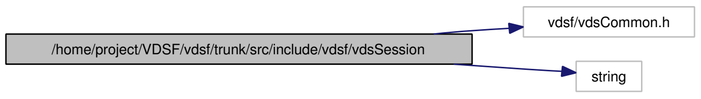
- class vdsQueue

6.7 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsSession File Reference

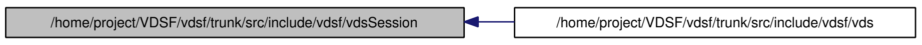
`#include <vdsf/vdsCommon.h>`

`#include <string>`

Include dependency graph for vdsSession:



This graph shows which files directly or indirectly include this file:


/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsSession
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vds

Classes

- class vdsSession

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