# vdsf API Reference Manual

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# Contents

# 1 vdsf API Module Index

## 1.1 vdsf API Modules

Here is a list of all modules:

# 2 vdsf API Directory Hierarchy

## 2.1 vdsf API Directories

This directory hierarchy is sorted roughly, but not completely, alphabetically:

# 3 vdsf API Data Structure Index

## 3.1 vdsf API Data Structures

Here are the data structures with brief descriptions:

# 4 vdsf API File Index

## 4.1 vdsf API File List

Here is a list of all files with brief descriptions:

# 5 vdsf API Module Documentation

## 5.1 API functions for vdsf folders.

### Functions

- VDSF_EXPORT int vdsFolderClose (VDS_HANDLE objectHandle)

  *Close a folder.*

- VDSF_EXPORT int vdsFolderGetFirst (VDS_HANDLE objectHandle, vdsFolderEntry ∗pEntry)

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

- VDSF_EXPORT int vdsFolderGetNext (VDS_HANDLE objectHandle, vdsFolderEntry ∗pEntry)

  *Iterate through the folder.*

- VDSF_EXPORT int vdsFolderOpen (VDS_HANDLE sessionHandle, const char ∗folderName, size_t nameLengthInBytes, VDS_HANDLE ∗objectHandle)

  *Open an existing folder (see vdsCreateObject to create a new folder).*

- VDSF_EXPORT int vdsFolderStatus (VDS_HANDLE objectHandle, vdsObjStatus ∗pStatus)

  *Return the status of the folder.*

### 5.1.1 Function Documentation

#### 5.1.1.1 VDSF_EXPORT int vdsFolderClose (VDS_HANDLE *objectHandle*)

Close a folder.

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

**Parameters:**

← ***objectHandle*** The handle to the folder (see vdsFolderOpen).

**Returns:**

0 on success or a vdsErrors on error.

#### 5.1.1.2 VDSF_EXPORT int vdsFolderGetFirst (VDS_HANDLE *objectHandle*, 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:**

← ***objectHandle*** The handle to the folder (see vdsFolderOpen).

→ ***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 a vdsErrors on error.

#### 5.1.1.3 VDSF_EXPORT int vdsFolderGetNext (VDS_HANDLE *objectHandle*, 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 vdsFolderGetFirst to initialize the iterator.

**Parameters:**

← ***objectHandle*** The handle to the folder (see vdsFolderOpen).

→ ***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 a vdsErrors on error.

#### 5.1.1.4 VDSF_EXPORT int vdsFolderOpen (VDS_HANDLE *sessionHandle*, const char ∗ *folderName*, size_t *nameLengthInBytes*, VDS_HANDLE ∗ *objectHandle*)

Open an existing folder (see vdsCreateObject to create a new folder).

**Parameters:**

← ***sessionHandle*** The handle to the current session.

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

← ***nameLengthInBytes*** The length of *folderName* (in bytes) not counting the null terminator (null-terminators are not used by the vdsf engine).

→ ***objectHandle*** The handle to the folder, allowing us access to the folder in shared memory. On error, this handle will be set to zero (NULL) unless the objectHandle pointer itself is NULL.

**Returns:**

0 on success or a vdsErrors on error.

#### 5.1.1.5 VDSF_EXPORT int vdsFolderStatus (VDS_HANDLE *objectHandle*, vdsObjStatus ∗ *pStatus*)

Return the status of the folder.

**Parameters:**

← ***objectHandle*** The handle to the folder (see vdsFolderOpen).

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

**Returns:**

0 on success or a vdsErrors on error.

## 5.2 API functions for vdsf hash maps.

### 5.2.1 Detailed Description

Hash maps use unique keys - the data items are not sorted.

**Functions**

- VDSF_EXPORT int vdsHashMapClose (VDS_HANDLE objectHandle)

  *Close a Hash Map.*

- VDSF_EXPORT int vdsHashMapDelete (VDS_HANDLE objectHandle, const void ∗key, size_t keyLength)

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

- VDSF_EXPORT int vdsHashMapGet (VDS_HANDLE objectHandle, 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.*

- VDSF_EXPORT int vdsHashMapGetFirst (VDS_HANDLE objectHandle, void ∗key, size_t keyLength, void ∗buffer, size_t bufferLength, size_t ∗retKeyLength, size_t ∗retDataLength)

  *Iterate through the hash map.*

- VDSF_EXPORT int vdsHashMapGetNext (VDS_HANDLE objectHandle, void ∗key, size_t keyLength, void ∗buffer, size_t bufferLength, size_t ∗retKeyLength, size_t ∗retDataLength)

  *Iterate through the hash map.*

- VDSF_EXPORT int vdsHashMapInsert (VDS_HANDLE objectHandle, const void ∗key, size_t keyLength, const void ∗data, size_t dataLength)

  *Insert a data element in the hash map.*

- VDSF_EXPORT int vdsHashMapOpen (VDS_HANDLE sessionHandle, const char ∗hashMapName, size_t nameLengthInBytes, VDS_HANDLE ∗objectHandle)

  *Open an existing hash map (see vdsCreateObject to create a new object).*

- VDSF_EXPORT int vdsHashMapStatus (VDS_HANDLE objectHandle, vdsObjStatus ∗pStatus)

  *Return the status of the hash map.*

### 5.2.2 Function Documentation

#### 5.2.2.1 VDSF_EXPORT int vdsHashMapClose (VDS_HANDLE *objectHandle*)

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 vdsCommit or vdsRollback to end the current unit of work.

**Parameters:**

← ***objectHandle*** The handle to the hash map (see vdsHashMapOpen).

**Returns:**

0 on success or a vdsErrors on error.

#### 5.2.2.2 VDSF_EXPORT int vdsHashMapDelete (VDS_HANDLE *objectHandle*, 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 vdsCommit.

**Parameters:**

← ***objectHandle*** The handle to the hash map (see vdsHashMapOpen).

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

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

**Returns:**

0 on success or a vdsErrors on error.

#### 5.2.2.3 VDSF_EXPORT int vdsHashMapGet (VDS_HANDLE *objectHandle*, 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:**

← ***objectHandle*** The handle to the hash map (see vdsHashMapOpen).

← ***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.

**Returns:**

0 on success or a vdsErrors on error.

#### 5.2.2.4 VDSF_EXPORT int vdsHashMapGetFirst (VDS_HANDLE *objectHandle*, 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:**

← ***objectHandle*** The handle to the hash map (see vdsHashMapOpen).

→ ***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 a vdsErrors on error.

#### 5.2.2.5 VDSF_EXPORT int vdsHashMapGetNext (VDS_HANDLE *objectHandle*, 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 vdsHashMapGetFirst to initialize the iterator. Not so evident - calling vdsHashMapGet 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:**

← ***objectHandle*** The handle to the hash map (see vdsHashMapOpen).

→ ***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 a vdsErrors on error.

#### 5.2.2.6 VDSF_EXPORT int vdsHashMapInsert (VDS_HANDLE *objectHandle*, 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 vdsCommit.

**Parameters:**

← ***objectHandle*** The handle to the hash map (see vdsHashMapOpen).

← ***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).

**Returns:**

0 on success or a vdsErrors on error.

#### 5.2.2.7 VDSF_EXPORT int vdsHashMapOpen (VDS_HANDLE *sessionHandle*, const char ∗ *hashMapName*, size_t *nameLengthInBytes*, VDS_HANDLE ∗ *objectHandle*)

Open an existing hash map (see vdsCreateObject to create a new object).

**Parameters:**

← ***sessionHandle*** The handle to the current session.

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

← ***nameLengthInBytes*** The length of *hashMapName* (in bytes) not counting the null terminator (null-terminators are not used by the vdsf engine).

→ ***objectHandle*** The handle to the hash map, allowing us access to the map in shared memory. On error, this handle will be set to zero (NULL) unless the objectHandle pointer itself is NULL.

**Returns:**

0 on success or a vdsErrors on error.

#### 5.2.2.8 VDSF_EXPORT int vdsHashMapStatus (VDS_HANDLE *objectHandle*, vdsObjStatus ∗ *pStatus*)

Return the status of the hash map.

**Parameters:**

← ***objectHandle*** The handle to the hash map (see vdsHashMapOpen).

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

**Returns:**

0 on success or a vdsErrors on error.

## 5.3 API functions for vdsf processes.

### Functions

- VDSF_EXPORT void vdsExit ()

*This function terminates all access to the VDS.*

- VDSF_EXPORT int vdsInit (const char ∗wdAddress, int protectionNeeded)

  *This function initializes access to a VDS.*

### 5.3.1 Function Documentation

#### 5.3.1.1 VDSF_EXPORT void vdsExit ()

This function terminates all access to the VDS.

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

This function takes no argument and always end successfully (even if called twice or if vdsInit was not called).

#### 5.3.1.2 VDSF_EXPORT int vdsInit (const char ∗ *wdAddress*, int *protectionNeeded*)

This function initializes access to a VDS.

It takes 2 input arguments, the address of the watchdog and an integer (used as a boolean, 0 for false, 1 for true) to indicate if sessions and other objects (Queues, etc) are shared amongst threads (in the current process) and must be protected. Recommendation: always set protectionNeeded to 0 (false) unless you cannot do otherwise. In other words it is recommended to use one session handle for each thread. Also if the same queue needs to be accessed by two threads it is more efficient to have two different handles 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.]

Upon successful completion, the process handle is set. Otherwise the error code is returned.

**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.

**Returns:**

0 on success or a vdsErrors on error.

## 5.4 API functions for vdsf FIFO queues.

### 5.4.1 Detailed Description

A reminder: FIFO, First In First Out.

Data items are placed at the end of the queue and retrieved from the beginning of the queue.

#### Functions

- VDSF_EXPORT int vdsQueueClose (VDS_HANDLE objectHandle)

  *Close a FIFO queue.*

- VDSF_EXPORT int vdsQueueGetFirst (VDS_HANDLE objectHandle, void ∗buffer, size_t bufferLength, size_t ∗returnedLength)

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

- VDSF_EXPORT int vdsQueueGetNext (VDS_HANDLE objectHandle, void ∗buffer, size_t bufferLength, size_t ∗returnedLength)

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

- VDSF_EXPORT int vdsQueueOpen (VDS_HANDLE sessionHandle, const char ∗queueName, size_t nameLengthInBytes, VDS_HANDLE ∗objectHandle)

  *Open an existing FIFO queue (see vdsCreateObject to create a new queue).*

- VDSF_EXPORT int vdsQueuePop (VDS_HANDLE objectHandle, 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.*

- VDSF_EXPORT int vdsQueuePush (VDS_HANDLE objectHandle, const void ∗pItem, size_t length)

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

- VDSF_EXPORT int vdsQueueStatus (VDS_HANDLE objectHandle, vdsObjStatus ∗pStatus)

  *Return the status of the queue.*

### 5.4.2 Function Documentation

#### 5.4.2.1 VDSF_EXPORT int vdsQueueClose (VDS_HANDLE *objectHandle*)

Close a FIFO queue.

This function terminates the current access to the queue in shared memory (the queue 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 vdsCommit or vdsRollback to end the current unit of work.

**Parameters:**

$\leftarrow$ ***objectHandle*** The handle to the queue (see vdsQueueOpen).

**Returns:**

0 on success or a vdsErrors on error.

#### 5.4.2.2 VDSF_EXPORT int vdsQueueGetFirst (VDS_HANDLE *objectHandle*, 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:**

$\leftarrow$ ***objectHandle*** The handle to the queue (see vdsQueueOpen).

$\rightarrow$ ***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 a vdsErrors on error.

#### 5.4.2.3 VDSF_EXPORT int vdsQueueGetNext (VDS_HANDLE *objectHandle*, 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 vdsQueueGetFirst to initialize the iterator. Not so evident - calling vdsQueuePop will reset the iteration to the last element (they use the same internal storage). If this cause a problem, please let us know.

**Parameters:**

← ***objectHandle*** The handle to the queue (see vdsQueueOpen).

→ ***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.

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

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

**Returns:**

0 on success or a vdsErrors on error.

#### 5.4.2.4 VDSF_EXPORT int vdsQueueOpen (VDS_HANDLE *sessionHandle*, const char ∗ *queueName*, size_t *nameLengthInBytes*, VDS_HANDLE ∗ *objectHandle*)

Open an existing FIFO queue (see vdsCreateObject to create a new queue).

**Parameters:**

← ***sessionHandle*** The handle to the current session.

← ***queueName*** The fully qualified name of the queue.

← ***nameLengthInBytes*** The length of *queueName* (in bytes) not counting the null terminator (null-terminators are not used by the vdsf engine).

→ ***objectHandle*** The handle to the queue, allowing us access to the queue in shared memory. On error, this handle will be set to zero (NULL) unless the objectHandle pointer itself is NULL.

**Returns:**

0 on success or a vdsErrors on error.

#### 5.4.2.5 VDSF_EXPORT int vdsQueuePop (VDS_HANDLE *objectHandle*, 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.

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 vdsCommit.

**Parameters:**

← ***objectHandle*** The handle to the queue (see vdsQueueOpen).

→ ***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.

**Returns:**

0 on success or a vdsErrors on error.

#### 5.4.2.6 VDSF_EXPORT int vdsQueuePush (VDS_HANDLE *objectHandle*, 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 vdsCommit.

**Parameters:**

← ***objectHandle*** The handle to the queue (see vdsQueueOpen).

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

← ***length*** The length of *pItem* (in bytes).

**Returns:**

0 on success or a vdsErrors on error.

#### 5.4.2.7 VDSF_EXPORT int vdsQueueStatus (VDS_HANDLE *objectHandle*, vdsObjStatus ∗ *pStatus*)

Return the status of the queue.

**Parameters:**

← ***objectHandle*** The handle to the queue (see vdsQueueOpen).

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

**Returns:**

0 on success or a vdsErrors on error.

## 5.5 API functions for vdsf sessions.

### Functions

- VDSF_EXPORT int vdsCommit (VDS_HANDLE sessionHandle)

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

- VDSF_EXPORT int vdsCreateObject (VDS_HANDLE sessionHandle, const char ∗objectName, size_t nameLengthInBytes, vdsObjectType objectType)

  *Create a new object in shared memory.*

- VDSF_EXPORT int vdsDestroyObject (VDS_HANDLE sessionHandle, const char ∗objectName, size_t nameLengthInBytes)

  *Destroy an existing object in shared memory.*

- VDSF_EXPORT int vdsErrorMsg (VDS_HANDLE sessionHandle, char ∗message, size_t msgLengthInBytes)

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

- VDSF_EXPORT int vdsExitSession (VDS_HANDLE sessionHandle)

  *Terminate the current session.*

- VDSF_EXPORT int vdsGetInfo (VDS_HANDLE sessionHandle, vdsInfo ∗p-Info)

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

- VDSF_EXPORT int vdsGetStatus (VDS_HANDLE sessionHandle, const char ∗objectName, size_t nameLengthInBytes, vdsObjStatus ∗pStatus)

  *Return the status of the named object.*

- VDSF_EXPORT int vdsInitSession (VDS_HANDLE ∗sessionHandle)

  *This function initializes a session.*

- VDSF_EXPORT int vdsLastError (VDS_HANDLE sessionHandle)

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

- VDSF_EXPORT int vdsRollback (VDS_HANDLE sessionHandle)

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

### 5.5.1 Function Documentation

#### 5.5.1.1 VDSF_EXPORT int vdsCommit (VDS_HANDLE *sessionHandle*)

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

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

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 an error is returned by this function, nothing was committed.

**Parameters:**

← ***sessionHandle*** Handle to the current session.

**Returns:**

0 on success or a vdsErrors on error.

#### 5.5.1.2 VDSF_EXPORT int vdsCreateObject (VDS_HANDLE *sessionHandle*, const char ∗ *objectName*, size_t *nameLengthInBytes*, vdsObjectType *objectType*)

Create a new object in shared memory.

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

This function does not provide a handle to the newly created object. Use vdsQueue-Open and similar functions to get the handle.

**Parameters:**

← ***sessionHandle*** Handle to the current session.

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

← ***nameLengthInBytes*** The length of *objectName* (in bytes) not counting the null terminator (null-terminators are not used by the vdsf engine).

← ***objectType*** The type of object to create (folder, queue, etc.).

**Returns:**

0 on success or a vdsErrors on error.

#### 5.5.1.3 VDSF_EXPORT int vdsDestroyObject (VDS_HANDLE *sessionHandle*, 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 vdsCommit.

**Parameters:**

← ***sessionHandle*** Handle to the current session.

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

← ***nameLengthInBytes*** The length of *objectName* (in bytes) not counting the null terminator (null-terminators are not used by the vdsf engine).

**Returns:**

0 on success or a vdsErrors on error.

#### 5.5.1.4 VDSF_EXPORT int vdsErrorMsg (VDS_HANDLE *sessionHandle*, 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:**

← ***sessionHandle*** Handle to the current session.

→ ***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.

**Returns:**

0 on success or a vdsErrors on error.

#### 5.5.1.5 VDSF_EXPORT int vdsExitSession (VDS_HANDLE *sessionHandle*)

Terminate the current session.

An implicit call to vdsRollback is executed by this function.

Once this function is executed, attempts to use the session handle might lead to memory violation (and, possibly, crashes).

**Parameters:**

← ***sessionHandle*** Handle to the current session.

**Returns:**

0 on success or a vdsErrors on error.

#### 5.5.1.6 VDSF_EXPORT int vdsGetInfo (VDS_HANDLE *sessionHandle*, 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:**

← ***sessionHandle*** Handle to the current session.

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

**Returns:**

0 on success or a vdsErrors on error.

#### 5.5.1.7 VDSF_EXPORT int vdsGetStatus (VDS_HANDLE *sessionHandle*, const char ∗ *objectName*, size_t *nameLengthInBytes*, vdsObjStatus ∗ *pStatus*)

Return the status of the named object.

**Parameters:**

← ***sessionHandle*** Handle to the current session.

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

← ***nameLengthInBytes*** The length of *objectName* (in bytes) not counting the null terminator (null-terminators are not used by the vdsf engine).

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

**Returns:**

0 on success or a vdsErrors on error.

#### 5.5.1.8 VDSF_EXPORT int vdsInitSession (VDS_HANDLE ∗ *sessionHandle*)

This function initializes a session.

It takes one output argument, the session handle.

Upon successful completion, the session handle is set and the function returns zero. Otherwise the error code is returned and the handle is set to NULL.

This function will also initiate a new transaction.

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

**Parameters:**

→ ***sessionHandle*** The handle to the newly created session.

**Returns:**

0 on success or a vdsErrors on error.

#### 5.5.1.9 VDSF_EXPORT int vdsLastError (VDS_HANDLE *sessionHandle*)

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

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:**

← ***sessionHandle*** Handle to the current session.

**Returns:**

The last error.

#### 5.5.1.10 VDSF_EXPORT int vdsRollback (VDS_HANDLE *sessionHandle*)

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

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

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 an error is returned by this function, nothing was rollbacked.

**Parameters:**

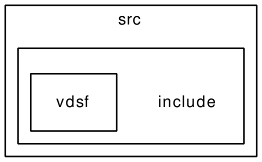
← ***sessionHandle*** Handle to the current session.

**Returns:**

0 on success or a vdsErrors on error.

# 6 vdsf API Directory Documentation

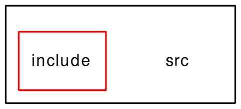
## 6.1 /home/project/VDSF/vdsf/trunk/src/include/ Directory Reference



**Directories**

- directory vdsf

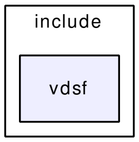
## 6.2 /home/project/VDSF/vdsf/trunk/src/ Directory Reference



**Directories**

- directory include

## 6.3 /home/project/VDSF/vdsf/trunk/src/include/vdsf/ Directory Reference



**Files**

- file vds.h
- file vdsCommon.h
- file vdsErrors.h
- file vdsFolder.h

  *This file provides the API needed to access a VDSF folder.*

- file vdsHashMap.h

  *This file provides the API needed to access a VDSF hash map.*

- file vdsProcess.h

  *This file provides the API functions for vdsf processes.*

- file vdsQueue.h

  *This file provides the API needed to access a VDSF FIFO queue.*

- file vdsSession.h

  *This file provides the API needed to create and use a session.*

# 7 vdsf API Data Structure Documentation

## 7.1 vdsFolderEntry Struct Reference

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

### 7.1.1 Detailed Description

This data structure is used to iterate throught all objects in a folder.

Note: the actual name of an object (and the length of this name) might vary if you are using different locales (internally, names are stored as wide characters (4 bytes)).

**Data Fields**

- vdsObjectType type

  *The object type.*

- size_t nameLengthInBytes

  *The actual length of the name of the object.*

- char name [VDS_MAX_NAME_LENGTH ∗4]

  *The name of the object.*

### 7.1.2 Field Documentation

#### 7.1.2.1 vdsObjectType vdsFolderEntry::type

The object type.

#### 7.1.2.2 size_t vdsFolderEntry::nameLengthInBytes

The actual length of the name of the object.

#### 7.1.2.3 char vdsFolderEntry::name[VDS_MAX_NAME_LENGTH ∗4]

The name of the object.

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

- /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsCommon.h

## 7.2 vdsInfo Struct Reference

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

### 7.2.1 Detailed Description

This data structure is used to retrieve the status of the virtual data space.

#### Data Fields

- size_t totalSizeInBytes

  *Total size of the virtual data space.*

- size_t allocatedSizeInBytes

  *Total size of the allocated blocks.*

- size_t numObjects

  *Number of API objects in the vds (internal objects are not counted).*

- size_t numGroups

*Total number of groups of blocks.*

- size_t numMallocs

  *Number of calls to allocate groups of blocks.*

- size_t numFrees

  *Number of calls to free groups of blocks.*

- size_t largestFreeInBytes

  *Largest contiguous group of free blocks.*

### 7.2.2 Field Documentation

#### 7.2.2.1 size_t vdsInfo::totalSizeInBytes

Total size of the virtual data space.

#### 7.2.2.2 size_t vdsInfo::allocatedSizeInBytes

Total size of the allocated blocks.

#### 7.2.2.3 size_t vdsInfo::numObjects

Number of API objects in the vds (internal objects are not counted).

#### 7.2.2.4 size_t vdsInfo::numGroups

Total number of groups of blocks.

#### 7.2.2.5 size_t vdsInfo::numMallocs

Number of calls to allocate groups of blocks.

#### 7.2.2.6 size_t vdsInfo::numFrees

Number of calls to free groups of blocks.

#### 7.2.2.7 size_t vdsInfo::largestFreeInBytes

Largest contiguous group of free blocks.

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

- /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsCommon.h

## 7.3 vdsObjStatus Struct Reference

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

### 7.3.1 Detailed Description

This data structure is used to retrieve the status of objects.

**Data Fields**

- vdsObjectType type
  *The object type.*
- size_t numBlocks
  *The number of blocks allocated to this object.*
- size_t numBlockGroup
  *The number of groups of blocks allocated to this object.*
- size_t numDataItem
  *The number of data items in thisa object.*
- size_t freeBytes
  *The amount of free space available in the blocks allocated to this object.*

### 7.3.2 Field Documentation

#### 7.3.2.1 vdsObjectType vdsObjStatus::type

The object type.

#### 7.3.2.2 size_t vdsObjStatus::numBlocks

The number of blocks allocated to this object.

#### 7.3.2.3 size_t vdsObjStatus::numBlockGroup

The number of groups of blocks allocated to this object.

#### 7.3.2.4 size_t vdsObjStatus::numDataItem

The number of data items in thisa object.

#### 7.3.2.5 size_t vdsObjStatus::freeBytes

The amount of free space available in the blocks allocated to this object.

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

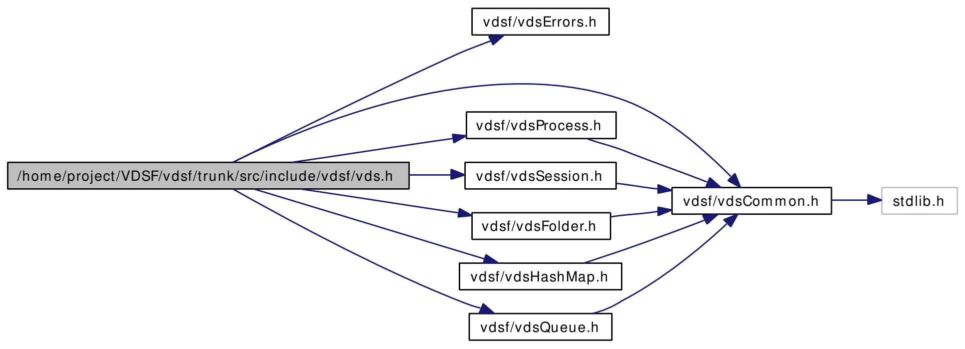
- /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsCommon.h

# 8 vdsf API File Documentation

## 8.1 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vds.h File Reference

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

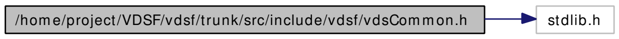
Include dependency graph for vds.h:



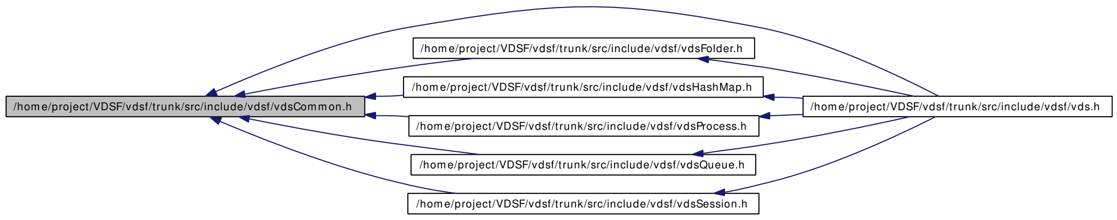
## 8.2 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vds-Common.h File Reference

```
#include <stdlib.h>
```

Include dependency graph for vdsCommon.h:



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


/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsCommon.h
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsFolder.h
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsHashMap.h
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsProcess.h
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsQueue.h
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsSession.h
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vds.h

### Data Structures

- struct vdsFolderEntry

  *This data structure is used to iterate throught all objects in a folder.*

- struct vdsObjStatus

  *This data structure is used to retrieve the status of objects.*

- struct vdsInfo

  *This data structure is used to retrieve the status of the virtual data space.*

### Defines

- #define VDSF_EXPORT

  *Uses to tell the VC++ compiler to export/import a function or variable on Windows (the macro is empty on other platforms).*

- #define VDS_MAX_NAME_LENGTH 256

  *Maximum number of characters (or bytes if not supporting i18n) of the name of a vds object (not counting the name of the parent folder(s)).*

- #define VDS_MAX_FULL_NAME_LENGTH 1024

  *Maximum number of characters (or bytes if not supporting i18n) of the fully qualified name of a vds object (including the name(s) of its parent folder(s)).*

### Typedefs

- typedef void ∗ VDS_HANDLE

  *VDS_HANDLE is an opaque data type used by the C API to reference objects created in the API module.*

### Enumerations

- enum vdsObjectType { VDS_FOLDER = 1, VDS_QUEUE = 2, VDS_HASH_-MAP = 3, VDS_LAST_OBJECT_TYPE }

  *The object type as seen from the API.*

- enum vdsIteratorType { VDS_FIRST = 1, VDS_NEXT = 2 }

## 8.2.1 Define Documentation

### 8.2.1.1 #define VDS_MAX_FULL_NAME_LENGTH 1024

Maximum number of characters (or bytes if not supporting i18n) of the fully qualified name of a vds object (including the name(s) of its parent folder(s)).

If the software was compiled with i18n, this maximum is the number of wide characters (4 bytes). Otherwise it is the number of bytes (which should equal the number of characters unless something funny is going on like using UTF-8 as locale and using —disable-i18n with configure...).

Note: setting this value eliminates a possible loophole since some heap memory must be allocated to hold the wide characters string for the duration of the operation (open, close, create or destroy).

### 8.2.1.2 #define VDS_MAX_NAME_LENGTH 256

Maximum number of characters (or bytes if not supporting i18n) of the name of a vds object (not counting the name of the parent folder(s)).

If the software was compiled with i18n, this maximum is the number of wide characters (4 bytes). Otherwise it is the number of bytes (which should equal the number of characters unless something funny is going on like using UTF-8 as locale and using —disable-i18n with configure...).

### 8.2.1.3 #define VDSF_EXPORT

Uses to tell the VC++ compiler to export/import a function or variable on Windows (the macro is empty on other platforms).

### 8.2.2 Typedef Documentation

#### 8.2.2.1 typedef void∗ VDS_HANDLE

VDS_HANDLE is an opaque data type used by the C API to reference objects created in the API module.

### 8.2.3 Enumeration Type Documentation

#### 8.2.3.1 enum vdsIteratorType

**Enumerator:**

*VDS_FIRST*

*VDS_NEXT*

#### 8.2.3.2 enum vdsObjectType

The object type as seen from the API.

**Enumerator:**

*VDS_FOLDER*

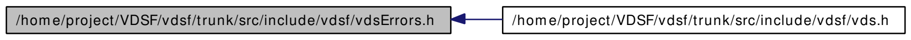
*VDS_QUEUE*

*VDS_HASH_MAP*

*VDS_LAST_OBJECT_TYPE*

## 8.3 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsErrors.h File Reference

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


/home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsErrors.h
/home/project/VDSF/vdsf/trunk/src/include/vdsf/vds.h

### Enumerations

- enum vdsErrors {
  VDS_OK = 0, VDS_INTERNAL_ERROR = 666, VDS_ENGINE_BUSY = 1, VDS_NOT_ENOUGH_VDS_MEMORY = 2,

VDS_NOT_ENOUGH_HEAP_MEMORY = 3, VDS_NOT_ENOUGH_-RESOURCES = 4, VDS_WRONG_TYPE_HANDLE = 5, VDS_NULL_-HANDLE = 6,

VDS_NULL_POINTER = 7, VDS_INVALID_LENGTH = 8, VDS_-PROCESS_ALREADY_INITIALIZED = 21, VDS_PROCESS_NOT_-INITIALIZED = 22,

VDS_INVALID_WATCHDOG_ADDRESS = 23, VDS_INCOMPATIBLE_-VERSIONS = 24, VDS_SOCKET_ERROR = 25, VDS_CONNECT_ERROR = 26,

VDS_SEND_ERROR = 27, VDS_RECEIVE_ERROR = 28, VDS_-BACKSTORE_FILE_MISSING = 29, VDS_ERROR_OPENING_VDS = 30,

VDS_LOGFILE_ERROR = 41, VDS_SESSION_CANNOT_GET_LOCK = 42, VDS_SESSION_IS_TERMINATED = 43, VDS_INVALID_OBJECT_NAME = 51,

VDS_NO_SUCH_OBJECT = 52, VDS_NO_SUCH_FOLDER = 53, VDS_-OBJECT_ALREADY_PRESENT = 54, VDS_IS_EMPTY = 55,

VDS_WRONG_OBJECT_TYPE = 56, VDS_OBJECT_CANNOT_GET_-LOCK = 57, VDS_REACHED_THE_END = 58, VDS_INVALID_ITERATOR = 59,

VDS_OBJECT_NAME_TOO_LONG = 60, VDS_FOLDER_IS_NOT_EMPTY = 61, VDS_ITEM_ALREADY_PRESENT = 62, VDS_NO_SUCH_ITEM = 63,

VDS_OBJECT_IS_DELETED = 64, VDS_OBJECT_NOT_INITIALIZED = 65, VDS_I18N_CONVERSION_ERROR = 66 }

### 8.3.1 Enumeration Type Documentation

#### 8.3.1.1 enum vdsErrors

**Enumerator:**

***VDS_OK*** No error.

..

***VDS_INTERNAL_ERROR*** Abnormal internal error - it should not happen!

***VDS_ENGINE_BUSY*** Cannot get a lock on a system object, the engine is "busy".

This might be the result of either a very busy system where unused cpu cycles are rare or a lock might be held by a crashed process.

***VDS_NOT_ENOUGH_VDS_MEMORY*** Not enough memory in the VDS.

***VDS_NOT_ENOUGH_HEAP_MEMORY*** Not enough heap memory (non-VDS memory).

***VDS_NOT_ENOUGH_RESOURCES*** There are not enough resources to correctly process the call.

This might be due to a lack of POSIX semaphores on systems where locks are implemented that way or a failure in initializing a pthread_mutex (or on Windows, a critical section).

***VDS_WRONG_TYPE_HANDLE*** The provided handle is of the wrong type.

***VDS_NULL_HANDLE*** The provided handle is NULL (zero).

***VDS_NULL_POINTER*** One of the arguments of an API function is an invalid NULL pointer.

***VDS_INVALID_LENGTH*** An invalid length was provided (it will usually indicate that the length value is set to zero.

***VDS_PROCESS_ALREADY_INITIALIZED*** The process was already initialized.

Was vdsInit() called for a second time?

***VDS_PROCESS_NOT_INITIALIZED*** The process was not properly initialized.

Was vdsInit() called?

***VDS_INVALID_WATCHDOG_ADDRESS*** The watchdog address is invalid (empty string, NULL pointer, etc.

)

***VDS_INCOMPATIBLE_VERSIONS*** API - memory-file version mismatch.

***VDS_SOCKET_ERROR*** Generic socket error.

***VDS_CONNECT_ERROR*** Socket error when trying to connect to the watchdog.

***VDS_SEND_ERROR*** Socket error when trying to send a request to the watchdog.

***VDS_RECEIVE_ERROR*** Socket error when trying to receive a reply from the watchdog.

***VDS_BACKSTORE_FILE_MISSING*** The vds backstore file is missing (the name of this file is provided by the watchdog).

***VDS_ERROR_OPENING_VDS*** Generic i/o error when attempting to open the vds.

***VDS_LOGFILE_ERROR*** Error accessing the directory for the log files or error opening the log file itself.

***VDS_SESSION_CANNOT_GET_LOCK*** Cannot get a lock on the session (a pthread_mutex or a critical section on Windows).

***VDS_SESSION_IS_TERMINATED*** An attempt was made to use a session object (a session handle) after this session was terminated.

***VDS_INVALID_OBJECT_NAME*** Permitted characters for names are alphanumerics, spaces (' '), dashes ('-') and underlines ('_').

The first character must be alphanumeric.

***VDS_NO_SUCH_OBJECT*** The object was not found (but its folder does exist).

***VDS_NO_SUCH_FOLDER*** One of the parent folder of an object does not exist.

***VDS_OBJECT_ALREADY_PRESENT*** Attempt to create an object which already exists.

***VDS_IS_EMPTY*** The object (data container) is empty.

***VDS_WRONG_OBJECT_TYPE*** Attempt to create an object of an unknown object type.

***VDS_OBJECT_CANNOT_GET_LOCK*** Cannot get lock on the object.

This might be the result of either a very busy system where unused cpu cycles are rare or a lock might be held by a crashed process.

***VDS_REACHED_THE_END*** The search/iteration reached the end without finding a new item/record.

***VDS_INVALID_ITERATOR*** An invalid value was used for a vdsIteratorType parameter.

***VDS_OBJECT_NAME_TOO_LONG*** The name of the object is too long.

The maximum length of a name cannot be more than VDS_MAX_NAME_-LENGTH (or VDS_MAX_FULL_NAME_LENGTH for the fully qualified name).

***VDS_FOLDER_IS_NOT_EMPTY*** You cannot delete a folder if there are still undeleted objects in it.

Technical: a folder does not need to be empty to be deleted but all objects in it must be "marked as deleted" by the current session. This enables writing recursive deletions

***VDS_ITEM_ALREADY_PRESENT*** An item with the same key was found.

***VDS_NO_SUCH_ITEM*** The item was not found in the hash map.

***VDS_OBJECT_IS_DELETED*** The object is scheduled to be deleted soon.

Operations on this data container are not permitted at this time.

***VDS_OBJECT_NOT_INITIALIZED*** Object must be open first before you can access them.

***VDS_I18N_CONVERSION_ERROR*** i18n string conversion error.

In other words, the name of the object cannot be converted to/frm your current locale.

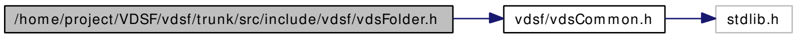
## 8.4 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsFolder.h File Reference

### 8.4.1 Detailed Description

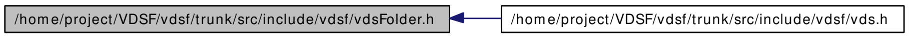
This file provides the API needed to access a VDSF folder.

`#include <vdsf/vdsCommon.h>`

Include dependency graph for vdsFolder.h:



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


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

### Functions

- VDSF_EXPORT int vdsFolderClose (VDS_HANDLE objectHandle)

  *Close a folder.*

- VDSF_EXPORT int vdsFolderGetFirst (VDS_HANDLE objectHandle, vdsFolderEntry ∗pEntry)

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

- VDSF_EXPORT int vdsFolderGetNext (VDS_HANDLE objectHandle, vdsFolderEntry ∗pEntry)

  *Iterate through the folder.*

- VDSF_EXPORT int vdsFolderOpen (VDS_HANDLE sessionHandle, const char ∗folderName, size_t nameLengthInBytes, VDS_HANDLE ∗objectHandle)

  *Open an existing folder (see vdsCreateObject to create a new folder).*

- VDSF_EXPORT int vdsFolderStatus (VDS_HANDLE objectHandle, vdsObjStatus ∗pStatus)

  *Return the status of the folder.*

## 8.5 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsHashMap.h File Reference

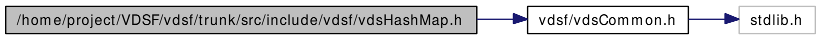
### 8.5.1 Detailed Description

This file provides the API needed to access a VDSF hash map.

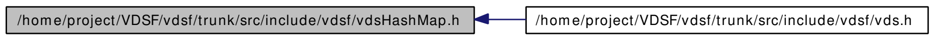
Hash maps use unique keys - the data items are not sorted.

`#include <vdsf/vdsCommon.h>`

Include dependency graph for vdsHashMap.h:



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


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

### Functions

- VDSF_EXPORT int vdsHashMapClose (VDS_HANDLE objectHandle)

  *Close a Hash Map.*

- VDSF_EXPORT int vdsHashMapDelete (VDS_HANDLE objectHandle, const void ∗key, size_t keyLength)

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

- VDSF_EXPORT int vdsHashMapGet (VDS_HANDLE objectHandle, 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.*

- VDSF_EXPORT int vdsHashMapGetFirst (VDS_HANDLE objectHandle, void ∗key, size_t keyLength, void ∗buffer, size_t bufferLength, size_t ∗retKeyLength, size_t ∗retDataLength)

  *Iterate through the hash map.*

- VDSF_EXPORT int vdsHashMapGetNext (VDS_HANDLE objectHandle, void ∗key, size_t keyLength, void ∗buffer, size_t bufferLength, size_t ∗retKeyLength, size_t ∗retDataLength)

  *Iterate through the hash map.*

- VDSF_EXPORT int vdsHashMapInsert (VDS_HANDLE objectHandle, const void ∗key, size_t keyLength, const void ∗data, size_t dataLength)

  *Insert a data element in the hash map.*

- VDSF_EXPORT int vdsHashMapOpen (VDS_HANDLE sessionHandle, const char ∗hashMapName, size_t nameLengthInBytes, VDS_HANDLE ∗objectHandle)

  *Open an existing hash map (see vdsCreateObject to create a new object).*

- VDSF_EXPORT int vdsHashMapStatus (VDS_HANDLE objectHandle, vdsObjStatus ∗pStatus)

  *Return the status of the hash map.*

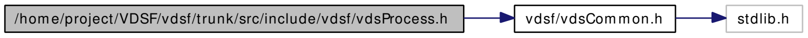
## 8.6 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsProcess.h File Reference

### 8.6.1 Detailed Description

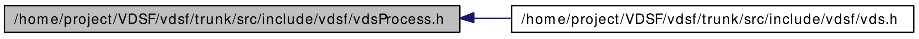
This file provides the API functions for vdsf processes.

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

Include dependency graph for vdsProcess.h:



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


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

#### Functions

- VDSF_EXPORT void vdsExit ()

  *This function terminates all access to the VDS.*

- VDSF_EXPORT int vdsInit (const char ∗wdAddress, int protectionNeeded)

  *This function initializes access to a VDS.*

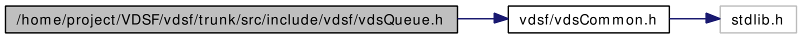
## 8.7 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsQueue.h File Reference

### 8.7.1 Detailed Description

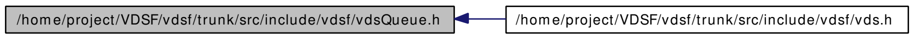
This file provides the API needed to access a VDSF FIFO queue.

`#include <vdsf/vdsCommon.h>`

Include dependency graph for vdsQueue.h:



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


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

**Functions**

- VDSF_EXPORT int vdsQueueClose (VDS_HANDLE objectHandle)

  *Close a FIFO queue.*

- VDSF_EXPORT int vdsQueueGetFirst (VDS_HANDLE objectHandle, void ∗buffer, size_t bufferLength, size_t ∗returnedLength)

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

- VDSF_EXPORT int vdsQueueGetNext (VDS_HANDLE objectHandle, void ∗buffer, size_t bufferLength, size_t ∗returnedLength)

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

- VDSF_EXPORT int vdsQueueOpen (VDS_HANDLE sessionHandle, const char ∗queueName, size_t nameLengthInBytes, VDS_HANDLE ∗objectHandle)

  *Open an existing FIFO queue (see vdsCreateObject to create a new queue).*

- VDSF_EXPORT int vdsQueuePop (VDS_HANDLE objectHandle, 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.*

- VDSF_EXPORT int vdsQueuePush (VDS_HANDLE objectHandle, const void ∗pItem, size_t length)

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

- VDSF_EXPORT int vdsQueueStatus (VDS_HANDLE objectHandle, vdsObjStatus *pStatus)

  *Return the status of the queue.*

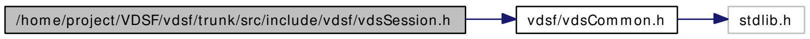
## 8.8 /home/project/VDSF/vdsf/trunk/src/include/vdsf/vdsSession.h File Reference

### 8.8.1 Detailed Description

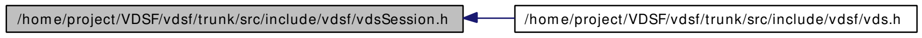
This file provides the API needed to create and use a session.

`#include <vdsf/vdsCommon.h>`

Include dependency graph for vdsSession.h:



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


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

**Functions**

- VDSF_EXPORT int vdsCommit (VDS_HANDLE sessionHandle)

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

- VDSF_EXPORT int vdsCreateObject (VDS_HANDLE sessionHandle, const char *objectName, size_t nameLengthInBytes, vdsObjectType objectType)

  *Create a new object in shared memory.*

- VDSF_EXPORT int vdsDestroyObject (VDS_HANDLE sessionHandle, const char *objectName, size_t nameLengthInBytes)

  *Destroy an existing object in shared memory.*

- VDSF_EXPORT int vdsErrorMsg (VDS_HANDLE sessionHandle, char *message, size_t msgLengthInBytes)

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

- VDSF_EXPORT int vdsExitSession (VDS_HANDLE sessionHandle)

  *Terminate the current session.*

- VDSF_EXPORT int vdsGetInfo (VDS_HANDLE sessionHandle, vdsInfo ∗p-Info)

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

- VDSF_EXPORT int vdsGetStatus (VDS_HANDLE sessionHandle, const char ∗objectName, size_t nameLengthInBytes, vdsObjStatus ∗pStatus)

  *Return the status of the named object.*

- VDSF_EXPORT int vdsInitSession (VDS_HANDLE ∗sessionHandle)

  *This function initializes a session.*

- VDSF_EXPORT int vdsLastError (VDS_HANDLE sessionHandle)

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

- VDSF_EXPORT int vdsRollback (VDS_HANDLE sessionHandle)

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

# Index