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OpenGL Interoperability [DEPRECATED] −

Enumerations

enum **CUGLmap_flags**

Functions

CUresult cuGLCtxCreate (**CUcontext** *pCtx, unsigned int Flags, **CUdevice** device)
Create a CUDA context for interoperability with OpenGL.
CUresult cuGLInit (void)
Initializes OpenGL interoperability.
CUresult cuGLMapBufferObject (**CUdeviceptr** *dptr, size_t *size, GLuint buffer)
Maps an OpenGL buffer object.
CUresult cuGLMapBufferObjectAsync (**CUdeviceptr** *dptr, size_t *size, GLuint buffer, **CUstream** hStream)
Maps an OpenGL buffer object.
CUresult cuGLRegisterBufferObject (GLuint buffer)
Registers an OpenGL buffer object.
CUresult cuGLSetBufferObjectMapFlags (GLuint buffer, unsigned int Flags)
Set the map flags for an OpenGL buffer object.
CUresult cuGLUnmapBufferObject (GLuint buffer)
Unmaps an OpenGL buffer object.
CUresult cuGLUnmapBufferObjectAsync (GLuint buffer, **CUstream** hStream)
Unmaps an OpenGL buffer object.
CUresult cuGLUnregisterBufferObject (GLuint buffer)
Unregister an OpenGL buffer object.

Detailed Description

\brief deprecated OpenGL interoperability functions of the low-level CUDA driver API (**cudaGL.h**)

This section describes deprecated OpenGL interoperability functionality.

Enumeration Type Documentation

enum CUGLmap_flags

Flags to map or unmap a resource

Function Documentation

CUresult cuGLCtxCreate (CUcontext * pCtx, unsigned int Flags, CUdevice device)

Deprecated

This function is deprecated as of Cuda 5.0.

This function is deprecated and should no longer be used. It is no longer necessary to associate a CUDA context with an OpenGL context in order to achieve maximum interoperability performance.

Parameters:

pCtx - Returned CUDA context
Flags - Options for CUDA context creation
device - Device on which to create the context

Returns:

CUDA_SUCCESS, **CUDA_ERROR_DEINITIALIZED**, **CUDA_ERROR_NOT_INITIALIZED**, **CUDA_ERROR_INVALID_CONTEXT**, **CUDA_ERROR_INVALID_VALUE**, **CUDA_ERROR_OUT_OF_MEMORY**

Note:

Note that this function may also return error codes from previous, asynchronous launches.

See also:

cuCtxCreate, **cuGLInit**, **cuGLMapBufferObject**, **cuGLRegisterBufferObject**, **cuGLUnmapBufferObject**, **cuGLUnregisterBufferObject**, **cuGLMapBufferObjectAsync**, **cuGLUnmapBufferObjectAsync**, **cuGLSetBufferObjectMapFlags**, **cuWGLGetDevice**

CUresult cuGLInit (void)

Deprecated

This function is deprecated as of Cuda 3.0.

Initializes OpenGL interoperability. This function is deprecated and calling it is no longer required. It may fail if the needed OpenGL driver facilities are not available.

Returns:

CUDA_SUCCESS, **CUDA_ERROR_DEINITIALIZED**, **CUDA_ERROR_NOT_INITIALIZED**, **CUDA_ERROR_INVALID_CONTEXT**, **CUDA_ERROR_UNKNOWN**

Note:

Note that this function may also return error codes from previous, asynchronous launches.

See also:

cuGLMapBufferObject, **cuGLRegisterBufferObject**, **cuGLUnmapBufferObject**, **cuGLUnregisterBufferObject**, **cuGLMapBufferObjectAsync**, **cuGLUnmapBufferObjectAsync**, **cuGLSetBufferObjectMapFlags**, **cuWGLGetDevice**

CUresult cuGLMapBufferObject (CUdeviceptr * dptr, size_t * size, GLuint buffer)

Deprecated

This function is deprecated as of Cuda 3.0.

Maps the buffer object specified by `buffer` into the address space of the current CUDA context and returns in `*dptr` and `*size` the base pointer and size of the resulting mapping.

There must be a valid OpenGL context bound to the current thread when this function is called. This must be the same context, or a member of the same shareGroup, as the context that was bound when the buffer was registered.

All streams in the current CUDA context are synchronized with the current GL context.

Parameters:

dptr - Returned mapped base pointer
size - Returned size of mapping
buffer - The name of the buffer object to map

Returns:

CUDA_SUCCESS, **CUDA_ERROR_DEINITIALIZED**, **CUDA_ERROR_NOT_INITIALIZED**, **CUDA_ERROR_INVALID_CONTEXT**, **CUDA_ERROR_INVALID_VALUE**, **CUDA_ERROR_MAP_FAILED**

Note:

Note that this function may also return error codes from previous, asynchronous launches.

See also:

cuGraphicsMapResources

CUresult cuGLMapBufferObjectAsync (CUdeviceptr * dptr, size_t * size, GLuint buffer, CUstream hStream)

Deprecated

This function is deprecated as of Cuda 3.0.

Maps the buffer object specified by `buffer` into the address space of the current CUDA context and returns in `*dptr` and `*size` the base pointer and size of the resulting mapping.

There must be a valid OpenGL context bound to the current thread when this function is called. This must be the same context, or a member of the same shareGroup, as the context that was bound when the buffer was registered.

Stream `hStream` in the current CUDA context is synchronized with the current GL context.

Parameters:

dptr - Returned mapped base pointer
size - Returned size of mapping
buffer - The name of the buffer object to map
hStream - Stream to synchronize

Returns:

CUDA_SUCCESS, **CUDA_ERROR_DEINITIALIZED**, **CUDA_ERROR_NOT_INITIALIZED**, **CUDA_ERROR_INVALID_CONTEXT**, **CUDA_ERROR_INVALID_VALUE**, **CUDA_ERROR_MAP_FAILED**

Note:
Note that this function may also return error codes from previous, asynchronous launches.

See also:
cuGraphicsMapResources

CUresult cuGLRegisterBufferObject (GLuint buffer)

Deprecated
This function is deprecated as of Cuda 3.0.

Registers the buffer object specified by `buffer` for access by CUDA. This function must be called before CUDA can map the buffer object. There must be a valid OpenGL context bound to the current thread when this function is called, and the buffer name is resolved by that context.

Parameters:
buffer - The name of the buffer object to register.

Returns:
CUDA_SUCCESS, **CUDA_ERROR_DEINITIALIZED**, **CUDA_ERROR_NOT_INITIALIZED**, **CUDA_ERROR_INVALID_CONTEXT**, **CUDA_ERROR_ALREADY_MAPPED**

Note:
Note that this function may also return error codes from previous, asynchronous launches.

See also:
cuGraphicsGLRegisterBuffer

CUresult cuGLSetBufferObjectMapFlags (GLuint buffer, unsigned int Flags)

Deprecated
This function is deprecated as of Cuda 3.0.

Sets the map flags for the buffer object specified by `buffer`.

Changes to `Flags` will take effect the next time `buffer` is mapped. The `Flags` argument may be any of the following:

- CU_GL_MAP_RESOURCE_FLAGS_NONE: Specifies no hints about how this resource will be used. It is therefore assumed that this resource will be read from and written to by CUDA kernels. This is the default value.
- CU_GL_MAP_RESOURCE_FLAGS_READ_ONLY: Specifies that CUDA kernels which access this resource will not write to this resource.
- CU_GL_MAP_RESOURCE_FLAGS_WRITE_DISCARD: Specifies that CUDA kernels which access this resource will not read from this resource and will write over the entire contents of the resource, so none of the data previously stored in the resource will be preserved.

If `buffer` has not been registered for use with CUDA, then **CUDA_ERROR_INVALID_HANDLE** is returned. If `buffer` is presently mapped for access by CUDA, then **CUDA_ERROR_ALREADY_MAPPED** is returned.

There must be a valid OpenGL context bound to the current thread when this function is called. This must be the same context, or a member of the same shareGroup, as the context that was bound when the buffer was registered.

Parameters:
buffer - Buffer object to unmap
Flags - Map flags

Returns:
CUDA_SUCCESS, **CUDA_ERROR_NOT_INITIALIZED**, **CUDA_ERROR_INVALID_HANDLE**, **CUDA_ERROR_ALREADY_MAPPED**, **CUDA_ERROR_INVALID_CONTEXT**,

Note:
Note that this function may also return error codes from previous, asynchronous launches.

See also:
cuGraphicsResourceSetMapFlags

CUresult cuGLUnmapBufferObject (GLuint buffer)

Deprecated

This function is deprecated as of Cuda 3.0.

Unmaps the buffer object specified by `buffer` for access by CUDA.

There must be a valid OpenGL context bound to the current thread when this function is called. This must be the same context, or a member of the same shareGroup, as the context that was bound when the buffer was registered.

All streams in the current CUDA context are synchronized with the current GL context.

Parameters:

buffer - Buffer object to unmap

Returns:

CUDA_SUCCESS, **CUDA_ERROR_DEINITIALIZED**, **CUDA_ERROR_NOT_INITIALIZED**, **CUDA_ERROR_INVALID_CONTEXT**, **CUDA_ERROR_INVALID_VALUE**

Note:

Note that this function may also return error codes from previous, asynchronous launches.

See also:

cuGraphicsUnmapResources

CUresult cuGLUnmapBufferObjectAsync (GLuint buffer, CUstream hStream)

Deprecated

This function is deprecated as of Cuda 3.0.

Unmaps the buffer object specified by `buffer` for access by CUDA.

There must be a valid OpenGL context bound to the current thread when this function is called. This must be the same context, or a member of the same shareGroup, as the context that was bound when the buffer was registered.

Stream `hStream` in the current CUDA context is synchronized with the current GL context.

Parameters:

buffer - Name of the buffer object to unmap
hStream - Stream to synchronize

Returns:

CUDA_SUCCESS, **CUDA_ERROR_DEINITIALIZED**, **CUDA_ERROR_NOT_INITIALIZED**, **CUDA_ERROR_INVALID_CONTEXT**, **CUDA_ERROR_INVALID_VALUE**

Note:

Note that this function may also return error codes from previous, asynchronous launches.

See also:

cuGraphicsUnmapResources

CUresult cuGLUnregisterBufferObject (GLuint buffer)

Deprecated

This function is deprecated as of Cuda 3.0.

Unregisters the buffer object specified by `buffer`. This releases any resources associated with the registered buffer. After this call, the buffer may no longer be mapped for access by CUDA.

There must be a valid OpenGL context bound to the current thread when this function is called. This must be the same context, or a member of the same shareGroup, as the context that was bound when the buffer was registered.

Parameters:

buffer - Name of the buffer object to unregister

Returns:

CUDA_SUCCESS, **CUDA_ERROR_DEINITIALIZED**, **CUDA_ERROR_NOT_INITIALIZED**, **CUDA_ERROR_INVALID_CONTEXT**, **CUDA_ERROR_INVALID_VALUE**

Note:

Note that this function may also return error codes from previous, asynchronous launches.

See also:

cuGraphicsUnregisterResource

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