clGetDeviceIDs

Obtain the list of devices available on a platform.

cl_int **clGetDeviceIDs**(cl_platform_id *platform*,
                          cl_device_type *device_type*,
                          cl_uint *num_entries*,
                          cl_device_id **devices*,
                          cl_uint **num_devices*)

Parameters

platform

> Refers to the platform ID returned by clGetPlatformIDs or can be NULL. If *platform* is NULL, the behavior is implementation-defined.

device_type

> A bitfield that identifies the type of OpenCL device. The *device_type* can be used to query specific OpenCL devices or all OpenCL devices available. The valid values for *device_type* are specified in the following table.

cl_device_type	Description
CL_DEVICE_TYPE_CPU	An OpenCL device that is the host processor. The host processor runs the OpenCL implementations and is a single or multi-core CPU.
CL_DEVICE_TYPE_GPU	An OpenCL device that is a GPU. By this we mean that the device can also be used to accelerate a 3D API such as OpenGL or DirectX.
CL_DEVICE_TYPE_ACCELERATOR	Dedicated OpenCL accelerators (for example the IBM CELL Blade). These devices communicate with the host processor using a peripheral interconnect such as PCIe.
CL_DEVICE_TYPE_DEFAULT	The default OpenCL device in the system.
CL_DEVICE_TYPE_ALL	All OpenCL devices available in the system.

num_entries

> The number of cl_device entries that can be added to *devices*. If *devices* is not NULL, the *num_entries* must be greater than zero.

devices

A list of OpenCL devices found. The cl_device_id values returned in *devices* can be used to identify a specific OpenCL device. If *devices* argument is NULL, this argument is ignored. The number of OpenCL devices returned is the mininum of the value specified by *num_entries* or the number of OpenCL devices whose type matches *device_type*.

num_devices

The number of OpenCL devices available that match *device_type*. If *num_devices* is NULL, this argument is ignored.

Notes

clGetDeviceIDs may return all or a subset of the actual physical devices present in the platform and that match *device_type*.

The application can query specific capabilities of the OpenCL device(s) returned by **clGetDeviceIDs**. This can be used by the application to determine which device(s) to use.

Errors

clGetDeviceIDs returns CL_SUCCESS if the function is executed successfully. Otherwise it returns the following:

- CL_INVALID_PLATFORM if *platform* is not a valid platform.

- CL_INVALID_DEVICE_TYPE if *device_type* is not a valid value.

- CL_INVALID_VALUE if *num_entries* is equal to zero and *device_type* is not NULL or if both *num_devices* and *device_type* are NULL.

- CL_DEVICE_NOT_FOUND if no OpenCL devices that matched *device_type* were found.

Specification

📕 OpenCL Specification

Also see

clGetDeviceInfo, clGetPlatformIDs, clCreateContext