AMD **Accelerated** Parallel Processing TECHNOLOGY

SAMPLE

Device Fission 11 Ext

1 Overview

Note that this sample is essential the same as the DeviceFission sample, except that this sample uses OpenCL 1.1 and the cl_ext_device_fission extension; the DeviceFission sample uses the OpenCL 1.2 device fission functionality.

1.1 Location

`$<AMDAPPSDKSamplesInstallPath>\samples\opencl\cl\1.x`

1.2 How to Run

See the *Getting Started* guide for how to build samples. You first must compile the sample.

Ensure that the OpenCL 1.2 environment is installed.

Use the command line to change to the directory where the executable is located. The default executables are placed in `$<AMDAPPSDKSamplesInstallPath>\samples\opencl\bin\x86` for 32-bit builds and `$<AMDAPPSDKSamplesInstallPath>\samples\opencl\bin\x86_64\` for 64-bit builds.

Type the following command(s).

1. `DeviceFission`
   This command tests the kernel execution on multi-devices asynchronously with the default option
   `-x 1024`.
2. `DeviceFission -h`
   This command prints the help message.

1.3 Command Line Options

Table 1 lists, and briefly describes, the command line options.

Table 1 Command Line Options

Short Form	Long Form	Description
`-h`	`--help`	Shows all command options and their respective meaning.
	`--device`	Devices on which the program is to be run. Acceptable values are `cpu` or `gpu`.
`-q`	`--quiet`	Quiet mode. Suppresses all text output.
`-e`	`--verify`	Verify results against reference implementation.
`-t`	`--timing`	Print timing.
	`--dump`	Dump binary image for all devices.
	`--load`	Load binary image, and execute on the CPU..
	`--loadgpu`	Load GPU binary image, and execute on the GPU.
	`--flags`	Specify compiler flags to build the kernel.

Short Form	Long Form	Description
-p	--platformId	Select platformId to be used (0 to N-1, where N is the number of available platforms).
-v	--version	AMD APP SDK version string.
-x	--length	Length of the input array.
-d	--deviceId	Select deviceId to be used (0 to N-1, where N is the number of available devices).

2 Introduction

In this sample, a device which supports the `cl_ext_device_fission` extension is divided into sub-devices. Different partitioning techniques can be used for the division. In this sample, the device is partitioned equally into multiple sub-devices. For demonstration purposes, a simple copy kernel is used. The different sub-devices load sections of the input buffer and copy them to the corresponding sections of the output buffer.

The following functions are introduced in the `cl_ext_device_fission` extension:

- `clCreateSubDeviceEXT`
- `clReleaseDeviceEXT`
- `clRetainDeviceEXT`

The function pointers for these functions are procured using the `clGetExtensionFunctionAddress` API from the OpenCL 1.1 specification. This API has been deprecated in the OpenCL 1.2 specification.

Contact

Advanced Micro Devices, Inc.
One AMD Place
P.O. Box 3453
Sunnyvale, CA, 94088-3453
Phone: +1.408.749.4000

For AMD Accelerated Parallel Processing:
URL: developer.amd.com/appsdk
Developing: developer.amd.com/
Support: developer.amd.com/appsdksupport