

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 <code>cpu</code> or <code>gpu</code> . |
| -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



The contents of this document are provided in connection with Advanced Micro Devices, Inc. ("AMD") products. AMD makes no representations or warranties with respect to the accuracy or completeness of the contents of this publication and reserves the right to make changes to specifications and product descriptions at any time without notice. The information contained herein may be of a preliminary or advance nature and is subject to change without notice. No license, whether express, implied, arising by estoppel or otherwise, to any intellectual property rights is granted by this publication. Except as set forth in AMD's Standard Terms and Conditions of Sale, AMD assumes no liability whatsoever, and disclaims any express or implied warranty, relating to its products including, but not limited to, the implied warranty of merchantability, fitness for a particular purpose, or infringement of any intellectual property right.

AMD's products are not designed, intended, authorized or warranted for use as components in systems intended for surgical implant into the body, or in other applications intended to support or sustain life, or in any other application in which the failure of AMD's product could create a situation where personal injury, death, or severe property or environmental damage may occur. AMD reserves the right to discontinue or make changes to its products at any time without notice.

Copyright and Trademarks

© 2015 Advanced Micro Devices, Inc. All rights reserved. AMD, the AMD Arrow logo, ATI, the ATI logo, Radeon, FireStream, and combinations thereof are trademarks of Advanced Micro Devices, Inc. OpenCL and the OpenCL logo are trademarks of Apple Inc. used by permission by Khronos. Other names are for informational purposes only and may be trademarks of their respective owners.