

1 Overview

1.1 Location `$<AMDAPPSDKSamplesInstallPath>\samples\opencl\cl\2.0`

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

Use the command line to change to the directory where the executable is located. The pre-compiled sample executable is at

`$<AMDAPPSDKSamplesInstallPath>\samples\opencl\bin\x86_64\` for 64-bit builds.

Ensure that the OpenCL 2.0 environment is installed.

Type the following command(s).

1. `BuiltInScan`
This runs the program with the default options.
2. `BuiltInScan -h`
This prints the help file.

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 meanings.
	--device	Devices on which the program is to be run. Acceptable values are cpu or gpu.
-q	--quiet	Quiet mode. Suppresses most text output.
-e	--verify	Verify results against reference implementation.
-t	--timing	Print timing related statistics.
	--dump	Dump binary image for all devices.
	--load	Load binary image and execute on device.
	--flags	Specify compiler flags to build the kernel.
-p	platformId	Select platformId to be used (0 to N-1, where N is the number of available platforms).
-d	deviceId	Select deviceId to be used (0 to N-1, where N is the number of available devices).
-v	version	AMD APP SDK version string.
-i	iterations	Number of iterations for kernel execution.

2 Introduction

This sample demonstrates the work group level scan and work group level broadcast features introduced in OpenCL 2.0. Work-group level scan lets the programmer perform a prefix scan on an array at the work-group level. The scan could be done using three types of operations: add, min, and max. A work-group level broadcast lets one work-item broadcast a variable value to all the other work-items in the work-group.

This sample must be run in the OpenCL 2.0 environment.

3 Implementation Details

This sample implements a parallel prefix sum using work-group level scan and broadcast. Global prefix sum is performed by first using work-group level prefix sum. Each work-group then acquires result of previous scan to perform global prefix sum.

4 References

1. [The OpenCL Specification, version 2.0, rev 22 document](#) (page 34).
2. The OpenCL C Programming Language (ver 2.0, rev 22) document (page 38).

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