AMD **Accelerated**
Parallel Processing
TECHNOLOGY

SAMPLE

Simple Multi-Device

1 Overview

1.1   Location   `$(AMDAPPSDKSAMPLESROOT)\samples\opencl\cl\app`

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 default executables are placed in `$(AMDAPPSDKSAMPLESROOT)\samples\opencl\bin\x86` for 32-bit builds and `$(AMDAPPSDKSAMPLESROOT)\samples\opencl\bin\x86_64\` for 64-bit builds.

Type the following command(s).

1. `SimpleMultiDevice`
    Tests the kernel execution on multi-device asynchronously.

2. `SimpleMultiDevice -h`
    This 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 meanings.
-e	--verify	Verify results against reference implementation.

2 Implementation Details

This sample tests concurrent execution on multi-devices using the following paths.

1. CPU + GPU – A CPU and a GPU device is required..

2. Multi GPU – More than one GPU is required.

Each test has following subtests.

1. Single Context — One global context is created for all devices, and kernels are enqueued using a separate command-queue for each device.

2. Multi Context — Each device has a different context, and kernels are enqueued on device specific command-queues.

3. Multi-Context (multi-threaded) — Each device has a separate context, and a device-specific host-thread is launched which enqueues kernel to its device.

The sample prints the kernel time taken for each device, as well as the total time taken to test whether the kernels run in parallel or not.