

1 Overview

1.1 Location `$<APPSDKSamplesInstallPath>\samples\C++Amp\`

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 `$<APPSDKSamplesInstallPath>\samples\C++Amp\bin\x86\` for 32-bit builds, and `$<APPSDKSamplesInstallPath>\samples\C++Amp\bin\x86_64\` for 64-bit builds.

Type the following command(s).

1. `ArrayBandwidth`

This measures the read and write bandwidths of the GPU from the array.

2. `ArrayBandwidth -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	Show all command options and their respective meaning.
-q	--quiet	Quiet mode. Suppresses text output.
-e	--verify	Verify results against reference implementation.
-t	--timing	Print timing.
-i	--iterations	Number of iterations for kernel execution.

2 Implementation Details

The sample measures the read and write bandwidths from a C++ AMP array using the following tests.

1. Read Bandwidth (single access) — All threads are read from a single memory location.
2. Read Bandwidth (linear access) — All threads perform linear read accesses.
3. Read bandwidth (linear access and uncached) — All threads perform uncached linear read accesses.
4. Read bandwidth (random) — All threads perform random read accesses.

5. Read bandwidth (stride) — Read accesses for adjacent threads are strided so that the memory reads are uncoalesced.
6. Write Bandwidth (linear access) — All threads perform linear write accesses.

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