STREAM
High Performance Computing

Schedule a meeting or Call +31 854865760   🐦 f 🔗 ✉ 📡

Search..

Industries   **Our Services and Products**   **Technologies and Expertise**   **Our Partners and Activities**   **Our Company**   **Blog**

Contact us

COMPANY BLOG

Handling OpenCL with CMake 3.1 and higher

POSTED BY VINCENT HINDRIKSEN ON 25 SEPTEMBER 2015 WITH 2 COMMENTS

There has been quite some "find OpenCL" code for CMake around. If you haven't heard of CMake, it's the most useful cross-platform tool to make cross-platform software.

Put this into CMakeLists.txt, changing the names for the executable.

> *#Minimal OpenCL CMakeLists.txt by StreamHPC*

```
cmake_minimum_required (VERSION 3.1)
project(GreatProject)
# Handle OpenCL
find_package(OpenCL REQUIRED)
include_directories(${OpenCL_INCLUDE_DIRS})
link_directories(${OpenCL_LIBRARY})
add_executable (main main.cpp)
target_include_directories (main PUBLIC ${CMAKE_CURRENT_SOURCE_DIR})
target_link_libraries (main ${OpenCL_LIBRARY})
```

Then do the usual:

- make a build-directory

- cd build

- cmake .. (specifying the right Generator)

Adding your own CMake snippets and you're one happy dev!

Cmake 3.7

CMake 3.7 makes it even easier! You can do the following:

```
find_package(OpenCL REQUIRED)
add_executable(test_tgt main.c)
target_link_libraries(test_tgt OpenCL::OpenCL)
```

This automatically sets up the include paths and target library to link against. No need to use the ${OpenCL_INCLUDE_DIRS} and ${OpenCL_LIBRARIES} any more.

(Thanks Matthäus G. Chajdas   for improving this!)

Getting CMake 3.1 or higher

- Ubuntu/Debian: Get the PPA   .

- Other Linux: Get the latest tar.gz   and compile.

- Windows/OSX: Download the latest exe/dmg   from the CMake homepage.

If you have more tips to share, put them in the comments.

⬇ pdf   🖨 print

Related Posts

Install OpenCL on Debian, Ubuntu and Mint orderly

... you read different types of manuals how to compile OpenCL software on Linux, then you can get dizzy of all the LD-parameters. ...

IWOCL 2017 – all the talks

... the PDF. Heterogeneous Computing Using Modern C++ with OpenCL Devices - Rod Burns and Ruyman Reyes (Codeplay) This hands-on ...

How to install OpenCL on Windows

... your Windows machine ready for OpenCL is rather straightforward. In short, you only need the latest drivers for your OpenCL device(s) ...

NVIDIA ended their industry-leading support for OpenCL in 2012

... for the samples in one zip-file, scroll down. The removed OpenCL-PDFs are also available for download.This sentence "NVIDIA's ...

General

WRITTEN BY VINCENT HINDRIKSEN

Mr. Vincent Hindriksen M.Sc is the founder of StreamComputing, a collective of performance engineering experts.

Do you need expertise in performance engineering? We have several experts available (HPC, GPGPU, OpenCL, HSA, CUDA, MPI, OpenMP) and solve any kind of performance problem. Contact me via phone or mail to discuss further: +31 854865760 or vincent@streamcomputing.eu

2 Comments   **Stream HPC**

1 **Login**

♡ **Recommend**   ↗ **Share**

Sort by Best

Join the discussion…

LOG IN WITH

OR SIGN UP WITH DISQUS **?**

Name

Ruben Dario Guerrero Mancilla • 2 months ago

Hi,

When I use the script avobe, is true that the project compile, but when I execute the resulting binary I get the error:
Failed to load kernel.

What modifications are needed in order to produce the right binary?

∧ | ∨ • Reply • Share ›

streamcomputing **Mod** ➤ Ruben Dario Guerrero Mancilla • 2 months ago

It seems that the kernel-file is not there. Easiest option is to copy kernel-files to the build directory during the build, as explained here:
https://stackoverflow.com/q...

1 ∧ | ∨ • Reply • Share ›

ALSO ON STREAM HPC

How we sped up a flooding simulation 35 times (from 32-core CPU to multi-

1 comment • a year ago•

Achwaq Khalid — Nice job ☐ ☐ ☐

OpenCL at SC15 – the booths to go to

1 comment • 2 years ago•

ArrayFire — In our booth we have an OpenCL demo running on Xilinx FPGAs! Come to booth #2229.

Atomic operations for floats in OpenCL – improved

1 comment • 2 years ago•

jack — or use CUDA with atomicAdd(float*,float) if you need good performance. implementation via

OpenCL basics: Multiple OpenCL devices with the ICD.

4 comments • 2 years ago•

streamcomputing — Correct. It is explained in more detail at https://www.khronos.org/reg... which is

Latest posts

- 📄 GPU and FPGA challenge for MSc and PhD students

- 📄 The single-core, multi-core and many-core CPU

- 📄 HPC centre EPCC says: "Better software, better science"

- 📄 Demo: cartoonizer on an Altera Arria 10 FPGA

- 📄 CPU Code modernisation – our hidden expertise

Upcoming Events

OpenCL CPU/GPU Training (4 days) (18 September 2017, Amsterdam)

OpenCL CPU/GPU Training (4 days) (16 October 2017, Amsterdam)

OpenCL CPU/GPU Training (4 days) (20 November 2017, Amsterdam)

OpenCL CPU/GPU Training (4 days) (18 December 2017, Amsterdam)

Follow us 🐦 💼 ✉ 📡

ABOUT THE COMPANY

Our clients are R&D focused SMEs and corporations, research institutes and startups.

We solve HPC, low-latency, low-power, and programmability problems.

COPYRIGHTS

OpenCL™ name and the OpenCL™ logo are trademarks of Apple Inc, used by permission by Khronos.

ADDRESS

StreamHPC / StreamComputing BV
Naritaweg 12B
1043 BZ Amsterdam
Netherlands, Europe

phone: +31 854865760
e-mail: info@streamhpc.com

NEWSLETTER

Sign up for our Newsletter

Email Address*

First Name*

Last Name*

Most interested in:*

◯   Faster software in general

◯   Faster Artificial Intelligence

◯   Faster Big Data

○ Faster Image Processing

○ GPU programming with OpenCL and CUDA

○ OpenCL on networked FPGAs

○ Stay up-to-date with what we do

Background:*

○ Management

○ Professional GPU/FPGA developer

○ Professional CPU developer

○ Academic researcher

○ Other

Want to say anything to us? (not required)

* = required field

SUBSCRIBE