

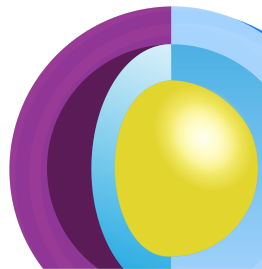
SYCL Hands on

Using ComputeCpp

Monday 18th May, 2015

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Codeplay Research



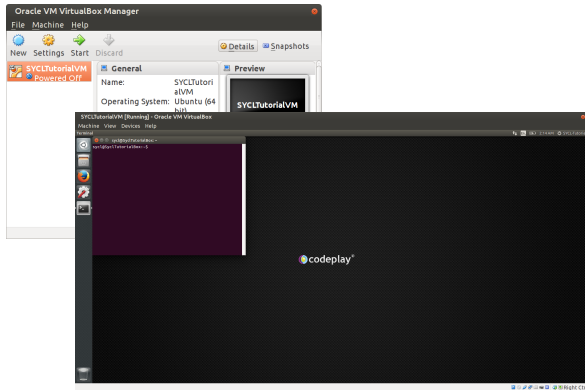
1. Setting up
2. Exercises
3. Final Remarks

Setting up

Setting up the Virtual Machine

Start your Virtual Machine (VM)!

The VM contains an image of Ubuntu 14.10 with all you need to work with SYCL



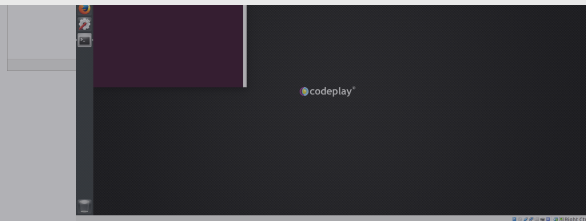
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Having Problems?

- Check the documentation on the USB
- Ask anyone with a Codeplay T-shirt !



ComputeCpp: A (WIP) SYCL 1.2 implementation

- Codeplay's **ComputeCpp** is a pre-release alpha version
- Early access to the core feature-set of the SYCL 1.2 for OpenCL
- Support for Windows, Linux, ARM, Android and many more targets
- Interested? Contact sycl@codeplay.com

OpenCL implementation

- **ComputeCpp** requires an OpenCL implementation with **SPIR** support
- The VM has AMD APP SDK 3.0 Beta installed
→ <http://developer.amd.com/tools-and-sdks/openc1-zone/amd-accelerated-parallel-processing-app-sdk/>
- You can download the Intel OpenCL SDK from
→ <https://software.intel.com/en-us/intel-openc1>



OpenCL



The Virtual Machine contains a Trial Version

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Please Note

- Can only work inside the VM
- Will work until the 15th of April
- Please do not evaluate performance!
 - Most of the OpenCL calls are currently blocking
 - Extra debugging code is inserted

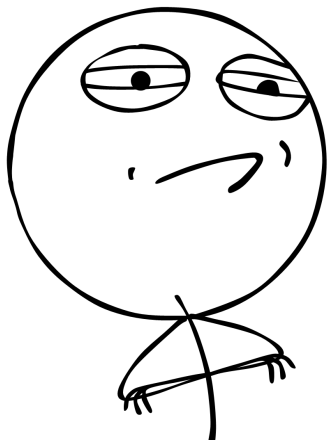
Executing the Sample Code

From a terminal

```
$ cd ComputeCpp/sample_code/  
$ mkdir build  
$ cd build  
$ cmake ../ -DCMAKE_BUILD_TYPE=Release  
$ make  
$ make test
```

All the sample code should execute and give the correct result

Exercises



Lets do some coding!

Building the exercises

- Exercises are build using `make`
- `SYCL_ROOT` and `OPENCL_LIB_DIR` should be defined

```
$ export SYCL_ROOT=$HOME/ComputeCpp-15.05-Linux/  
$ export OPENCL_LIB_DIR=$AMDAPPSDKROOT/lib/x86_64/
```
- Some exercises are not complete!
→ Solutions are on the solutions folder

The exercises

- Each exercise has a **README.md** file with instructions
- We will focus on three exercises today:
 - **exercise0** : Test the setup
 - **exercise1** : Basic SYCL exercise
 - **exercise2** : Using the Hierarchical API
 - **exercise3** : Playing around with image filters

Final Remarks

Thank You For Attending!

If you have any questions or comments...

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