Basic Capabilities

Sample User's Guide

Intel® SDK for OpenCL* Applications - Samples

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About Basic Capabilities Sample

CapsBasic sample demonstrates how to query all OpenCL* platforms available on the system and list all devices for a given platform. Also it demonstrates several important parameters for each device such as:

- device name
- driver
- vendor information
- other properties and capabilities of the device

Controlling the Sample

This is a console sample. To run it you need to run the executable through terminal:

$ ./capsbasic

By default, the sample searches for the OpenCL platform that contains "Intel" as a substring in platform name. If the application fails to find this platform, it prints error message and exits. In this case you need to select platform manually by name (as a substring). For example, to select platform, which contains "Different platform name" as a sub-name, run this command:

$ ./capsbasic "Different platform name"

Running capsbasic without any command-line options (default run) is equivalent to the following:

$ ./capsbasic Intel

The sample supports the following command-line options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-h, --help</td>
<td>Show this help text and exit.</td>
</tr>
<tr>
<td>&lt;PLATFORM&gt;</td>
<td>Platform name substring to select platform. Case sensitive. Default value is &quot;Intel&quot;. In case of multiple matches, the first matching platform is selected.</td>
</tr>
</tbody>
</table>

Understanding the Sample Output

Sample prints the information in the following order (examples are provided from the system with the Intel® Xeon Phi™ coprocessor and Intel Architecture CPU OpenCL devices):

1. List of available platforms; here is just one platform and it is selected:

   Number of available platforms: 1
   Platform names:[0] Intel(R) OpenCL [Selected]

2. List of device types with number of devices for each specific type:

   Number of devices available for each type:
   CL_DEVICE_TYPE_CPU: 1
   CL_DEVICE_TYPE_GPU: 0
   CL_DEVICE_TYPE_ACCELERATOR: 1

3. Several sections with device capabilities information. Devices are grouped by type and follow in the same order as showed above. For example, (the full list of properties is skipped):

   CL_DEVICE_TYPE_CPU[0]
   CL_DEVICE_NAME: Genuine Intel(R) CPU @ 2.60GHz
   CL_DEVICE_AVAILABLE: 1
   CL_DEVICE_VENDOR: Intel(R) Corporation
Understanding the Sample Output

... and so on

<table>
<thead>
<tr>
<th>CL_DEVICE_TYPE_ACCELERATOR[0]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL_DEVICE_NAME: Intel(R) Many Integrated Core Acceleration Card</td>
</tr>
<tr>
<td>CL_DEVICE_AVAILABLE: 1</td>
</tr>
<tr>
<td>CL_DEVICE_VENDOR: Intel(R) Corporation</td>
</tr>
</tbody>
</table>

... and so on

Each property has form "param_name: param_value", where param_name is one of the enumeration constants accepted by the clGetDeviceInfo OpenCL function.