Lab 0

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1 Objective

The purpose of this lab is to check your environment settings and to make sure you can compile and run CUDA programs on the environment youll be using throughout the course. In this lab, you will:

- Get a copy of the assignment package and walk through the directory structure

- Set up the environment for executing the assignments

- Test the environment with a simple program that just queries what GPU device is attached

2 Activity

1. Login to kodiak. On a Mac or Linux system open a terminal and type `ssh kodiak.baylor.edu`, then enter your login information. On a Windows system, launch a secure shell app (in the Network Apps folder in the start menu) then use connect (sometimes called quick connect).

2. Now that you are in. Type `mkdir code` then `cd code`. You will now clone the lab from github by typing
`git clone https://github.com/BaylorComputerEngineering/mpplabs.git`

3. Now type `cd mpplabs` and `ls`. We want to use the code in lab 0, so `cd lab0*` (note star is a regular expression that stands for anything).

4. We will now make the executable by typing `make`.

5. First trying running the executable on the login node (generally don't do this): `./device-query`. It will tell you there is no cuda device, since the login node of kodiak doesn't have any gpus.

6. We will now submit to one of the gpu queues.

(a) First try kodiak's gpus by `qsub -q gpu device-query.sh`. It will give you two output files, one with a .e in the middle (error output) and one with .o in the middle (standard output). Let's look at the standard output `cat *.o*`.

(b) Repeat it for Tardis (my cluster connected to kodiak) `qsub -q tardis device-query.sh`, and examine the output.

3   Turn in

Copy the output from both kodiak and tardis and put them in a single pdf. This is very easy to do in LaTeX . Upload this to the course Canvas site.

4   Further Reading

In the class Canvas, I have an announcement with Kodiak References. The first two are essentially the same as the last two - I presume this is a rename in progress, but I included both, since I don't know which will continue. They are very easy to read and will get you up to speed on using Kodiak.