# Lab 0: Package Download and Environment Setup

## 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 you’ll 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. Preliminary work

**Step 1:** Use an **SSH program** to login to **cluster-name.illinois.edu**, using the training account login information provided to you. Your home directory can be organized in any way you like.

**Step 2:** Clone the repository you will be using for all the lab assignments from the public repository by executing the following command in the directory where you would like to put it:

hg clone <public-repository-url> <directory-name>

**Step 3**: Change into the new directory.

cd <directory-name>

You are now ready to begin the lab.

## 3. Compile and execute the CUDA program

**Step 1**: Change into the lab directory and compile:

cd lab0

make

**Step 2**: Execute the lab

./device-query

You should expect see something like the following message:

There is 1 device supporting CUDA

Device 0: "Tesla T10 Processor"

Major revision number: 1

Minor revision number: 3

Total amount of global memory: 4294770688 bytes

Number of multiprocessors: 30

Number of cores: 240

Total amount of constant memory: 65536 bytes

Total amount of shared memory per block: 16384 bytes

Total number of registers available per block: 16384

Warp size: 32

Maximum number of threads per block: 512

Maximum sizes of each dimension of a block: 512 x 512 x 64

Maximum sizes of each dimension of a grid: 65535 x 65535 x 1

Maximum memory pitch: 2147483647 bytes

Texture alignment: 256 bytes

Clock rate: 1.30 GHz

Concurrent copy and execution: Yes

TEST PASSED