Using CUDA in the Lab

The CUDA libraries are already installed in the machines in the IIMS lab. However, there are some additional steps you need to take before you can start using them.

Environment Variables

You need to set your paths to point to the CUDA libraries. You can do this by typing the following on a command line in a terminal window

```
export CUDA_HOME="/usr/local/cuda"
export LD_LIBRARY_PATH="${LD_LIBRARY_PATH}:${CUDA_HOME}/lib64"
export PATH=${CUDA_HOME}/bin:${PATH}
```

Better still, you can put these in your `.bashrc` file in your home directory.

Simple demo program

Try running and compiling the simple demo program available from the Stream site. Just type

```
nvcc -o testprog1 testprog1.cu
./testprog1
```

CUDA code samples

The CUDA installation in the lab contains an extensive range of code samples that demo a number of things from very simple examples through to very advanced applications. These reside in `/usr/local` which has general read access but write access only for root. You can copy these samples into your own directory and then build them there.

```
cp -r /usr/local/cuda/samples .
cd samples/
make
```

This may take a while.

When the build is completed, try the device query program. This will tell you a lot of useful information about any graphics cards in your machine:

```
bin/x86_64/linux/release/deviceQuery
```

Have fun exploring the other CUDA samples!