

CS-206 - Deneb1 tutorial

1 Introduction

Deneb is an Intel Ivy Bridge based cluster available to the EPFL community since November 17th, 2014. This cluster includes GPU nodes which we use for GPU programming assignment (will be released next week). In this tutorial, you will learn how to connect to Deneb, compile, and run a CUDA program on it.

2 Connecting to the server

To connect to Deneb cluster, you need to use your GASPAS username and password as follow:

```
ssh -Y YOUR_USERNAME@deneb1.epfl.ch
```

(YOUR_USERNAME is the username of your GASPAS account).

Your home directory is where you arrive after logging in, you should use this directory.

3 Test your account

In order to test your account, you will run a test code on Deneb server. Open a new terminal and go to the path where the `test` directory in the assignment is located. Copy the `test` directory in the assignment from your computer into your home directory on the server:

```
cd -r PATH_TO_TEST_DIRECTORY
scp -r ./test YOUR_USERNAME@deneb1.epfl.ch:/home/YOUR_USERNAME
```

On the server, go to the `test` directory:

```
cd test
```

In order to compile a CUDA code, you need to load cuda module:

```
module load cuda/6.0
```

To be sure that you load cuda module, run the following command:

```
nvcc --version
```

You should see the following response:

```
nvcc:  NVIDIA (R) Cuda compiler driver
Copyright (c) 2005-2013 NVIDIA Corporation
Built on Thu_Mar_13_11:58:58_PDT_2014
Cuda compilation tools, release 6.0, V6.0.1
```

Now you are ready to compile a CUDA code. You can compile the `test.cu` file by running the Makefile:

```
make
```

(You will receive a warning, just ignore it).

This command make a `test` file: in order to run this file you need to submit a batch job to the server. The file `test_username.run` is a script that you need to use to submit your job. You need to modify this file to specify your username. Change `username` to your GASPAS username as follow:

```
sed 's/username/YOUR_USERNAME/g' test_username.run > test.run
```

(YOUR_USERNAME is the username of your GASPAS account).

Now, you can submit a job to the server:

```
sbatch -A cs206 --reservation=cs-206 test.run
```

You will get a response:

```
Submitted batch job JOB_ID
```

JOB_ID is a number that shows your job ID. You can find the result of your job in the file: `slurm-JOB_ID.out`. You can see the result:

```
cat slurm-JOB_ID.out
```

If your account does not have any problem, you will see:

```
CUDA error: no error
```