

Assignment - CUDA

1. Write a c program (des.c) which implements the DES (Data Encryption Standard) algorithm. Here are some fundamental functions (You can add your own functions if you need to).
 - DES(int index, long long int *MD, long long int *keys) : this function conducts the DES xor operation.
 - F(unsigned int c, long long int key) : the DES function uses this F function during encryption.
 - encryption(char *in, char *out, char *key) : this encryption function has the *in* file as an input, performs encryption with *key*, and writes to the *out* file as the output.
 - decryption(char *in, char *out, char *key) : this decryption function has the *in* file as an input, performs decryption with *key*, and writes to the *out* file as the output.
2. Write a CUDA program (des.cu) which implements the DES algorithm based on the c program described in problem 1.
3. Compare the CUDA program's execution times for different sizes of the input file.
4. Compare the CUDA program's execution times for different numbers of Blocks and threads.
5. Your report should include the followings:
 - How to transform the .c file to .cu file
 - What each team member has done
 - Graphs that show the results of the comparisons described in Problem 3 and 4
 - How to build / run the programs you made from the .c and .cu file
 - How to get the numbers(e.g., execution time) in your report

You can add something if you need to.
6. You should submit the followings:
 - des.c file (it should be compilable)
 - des.cu file (it should be compilable)
 - Team report

Tar/zip these files and name the resulting file as "DIP2016_CUDA_TeamNo.[zip|tar]". Submit this file to the TA (skim@dcslab.snu.ac.kr) with mail subject containing [DIP2015_CUDA_TeamNo_Submit] by December 10th. The deadline is subject to change.

- **server setting environments**

CPU : Intel i7 – 2600 @ 3.40GHz

MEM : 8G

GPU : NVIDIA GeForce GTX 580

you can connect via SSH to this server. (ip : 147.46.242.21, port:22)

Other detailed information will be announced via presentation.

(e.g. user id , passwd, etc..)

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