

Informal Parallel Programming Course for High School Students, Fall 2007

Getting Acclimated... (compiled by Scott Watson)

Server: vishkinpc.ece.umd.edu (use provided username and password)

XMT specific Commands to know:

xmtgcc32 – compiles c code for the XMT FPGA computer

xmtfpga – submits compiled binary files to run on XMT computer

xmtfpgadb – view a database of your previous submissions

(type any of these into the command line with the -h option to see their options)

Examples:

xmtgcc32 bfs.s.c (compile simple program for the FPGA)

xmtgcc32 -d START=0 -include ../data/hexagon/bfs.h bfs.p.c (compile program with #define and #include options)

xmtfpga -p hw4e -d ../data/huge/bfs.32b bfs.p.b (submit program with project label and binary data file)

xmtfpgadb -l -p hw4e (look at summary of submission results for projects marked 4e)

xmtfpgadb -g 3 (retrieve submission 3 output from database)

Text editors:

nano, emacs, vi, ...

XMTC highlights:

#include <xmtc.h> //required to use XMTC specific C functions

spawn(first,last){ ... } //call this function to 'spawn' (last-first+1) processes numbered first to last
//access the process number with the special '\$' variable

ps(int local_integer, psBaseReg ps_base); //sort of a global increment function that returns a current value without having to worry about concurrency issues. It's only called within a spawn block

void printINT(int x) { printf("%d",x); } //use this function, string.h not implemented on XMT

void printSTR(char *x) { printf("%s",x);} //use this function, string.h not implemented on XMT

...also see sspawn and psm in manual