Final Project

Create a general purpose STM system (which supports only integers (64 bits integers)) based on Invyswell Hybrid TM algorithm. Read Invyswell paper for details. A complete implementation of the entire algorithm with all its states is required. The paper has some optimizations that are not implemented in the experimental section. Those optimizations are **not** required.

A sample STM system using TL2 algorithm is given which can be used. Also, a Bloom filter sample code is provided also.

HTM code is provided in as a separate standalone global lock implementation.

Remember to check your code using the bank accounts scenario that we used in assignment #3, #4, and #6. But your STM system will be evaluated using arbitrary transactions.

This is a team project (2 members). Equal member contribution required, and each member contribution will be evaluated in the final grade.

Note: HTM code will not run of your laptop if the processor does not support TSX extension.

You can use the following server which has 72 cores and supports TSX extension.

ssh -p 2002 nile.ece.vt.edu -l <with your account>

For example:

ssh -p 2002 nile.ece.vt.edu -l student1

Account will be sent by email directly

Deliverables:

1. STM System implementation + a sample program using it (C/C++ file(s))
2. Member contribution and tasks distribution report.
3. Plot your results on banks accounts program up to 72 threads. Plot also statistics about how many times each path on Invyswell algorithm is used.
4. Analyze the effect of the size of the Bloom filter. The sample Bloom filter code has a configurable size. Show the percentage of aborts for different Bloom filter sizes. Show the results in tabular and graph format.

Dead line:

May 7th, 2018 at 12:00 PM