

Analysis of Large Scale System Models

Background

The flexibility of Petri nets makes them well equipped for modelling complex system. Petri nets for large systems are normally solved using Monte Carlo simulations. However using the Monte Carlo method can be computationally heavy practically if the model is slow to converge.

Objectives

Find ways to reduce the computation time for large scale Petri nets by;

- Improving the Petri net algorithm (in C++)
- Using parallel CPU code (Threads or Parallel_for library)
- Using GPU(Graphic Processing Unit) accelerators
- Using the university HPC (High Performance Computer)
 - The HPC has a high number of CPU cores and multiple GPU accelerators

Nottingham
university HPC



Tesla K40 was used
in this research

