Abstract

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On Bounding Response Times under Software Transactional Memory in Distributed Multiprocessor Real-Time Systems

We consider multiprocessor distributed real-time systems where concurrency control is managed using software transactional memory (or STM). For such a system, we propose an algorithm to compute an up- per bound on the response time.The proposed algorithm can be used to study the behavior of systems where node crash failures are possible. We compare the result of the proposed algorithm to a simulation of the system being studied in order to determine its efficacy. The results of our study indicate that it is possible to provide time- liness guarantees for multiprocessor distributed systems programmed using STM.