

Abstract

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Response time analysis of software transactional memory-based distributed real-time systems

We consider distributed real-time systems where concurrency control is managed using software transactional memory (or STM). For such a method we propose an algorithm to compute an upper 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 timeliness guarantees for systems programmed using STM.