

Title: Runtime Elision of Transactional Barriers for Captured Memory

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Abstract: In this paper, we propose a new technique that can identify transaction-local memory (i.e. captured memory), in managed environments, while having a low runtime overhead. We implemented our proposal in a well known STM framework (Deuce) and we tested it in STMBench7 with two different STMs: TL2 and LSA. In both STMs the performance improved significantly (4 times and 2.6 times, respectively). Moreover, running the STAMP benchmarks with our approach shows improvements of 7 times in the best case for the Vacation application.

Author Keywords: Neutrino Physics; Discrete and Finite Symmetries Performance; Transactions; Software Transactional Memory; Runtime Optimizations

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