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TxFS: Leveraging File-System Crash Consistency to Provide ACID Transactions

Summary and Strengths:

The objective of this paper is to introduce TxFS. TxFS is a transactional file system with interesting properties such as cross-hardware portability, a simple API, availability of full ACID transactions, high performance and low complexity. It achieves low complexity by leveraging the file-system journal, building on top of file system's atomic-update mechanisms. Experiments show that using TxFS transactions increases performance significantly for several different workloads, as well as strong crash consistency.