

Performance Enhancements for Database Transactions

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Abstract

Today's evolution of the software development imposing demands and the ever-increasing competitiveness between applications, considering not only their aesthetical appearance or ease of use, but also through continuously boosting their performance and suppressing their operation latency. This paper analyzes the resilience of architectural mechanisms for data persistence, to ensure the security of an information system against cyberattacks and preventing the disruption in the integrity and availability of the stored data. The study consists of a Fault Tree Analysis that underlines various design and implementation flaws, caused by the most common mistakes introduced by the software development teams in worldwide information systems. Solutions are proposed for every triggering event, minimizing the impact on the operations' efficiency and decreasing transactions' latency.

Index terms: caching mechanisms, database performance, performant data queries, resilient data transaction, secure architecture

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