Defesa de Tese: Arlino Henrique Magalhães de Araújo

Escrito por Secretaria MDCC

Título: Main Memory Database Instant Recovery

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Resumo:

Main Memory Databases (MMDBs) technology handles the primary database in RAM to provide high throughput and low latency. However, volatile memory makes MMDBs much more sensitive to system failures. The contents of the database are lost in these failures, and, as a result, systems may be unavailable for a long time until database recovery process has been finished. Therefore, novel recovery techniques are needed to repair crashed MMDBs as quickly as possible. This thesis presents MM-DIRECT (Main Memory Database Instant RECovery with Tuple consistent checkpoint), an MMDBs recovery technique able to schedule transactions simultaneously with the database recovery process at system startup. Thus it is giving the impression that the database is instantly restored. The approach implements a tuple-level consistent checkpoint to reduce the recovery time. In order to validate the proposed approach, experiments have been performed in a prototype implemented on the Redis database. The results show that the instant recovery technique effectively provides high transaction throughput rates even during both the recovery process and normal database processing.

Banca examinadora:

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