A new architecture for enterprise application software based on in-memory databases

Hasso Plattner
SAP AG

Abstract: Six years ago, I proposed a common database architecture for transaction processing and analytical systems using a columnar in-memory database, disputing the common belief that columnar storages are not suitable for transactional workloads in enterprise applications.

Today, the concept has been widely adopted in academia and industry and it is proven that it is not only feasible but also lead to a dramatic simplification of data models, a reduction in transaction complexity, the highest flexibility of queries, and finally an impressive performance at lower Total Cost of Ownership. This redefines the way we build enterprise software because we are now able to run analytical queries on large data sets directly on the finest granularity of data, eliminating the need to maintain pre–built aggregate tables. So, the next generation of applications is possible and realizes, for example, interactive boardroom meetings or personalized medicine.