

Preface

Over the last 30 years, memory prices have been dropping by a factor of 10 every 5 years. The number of I/O operations per second (IOPS) in DRAM is far greater than other storage media such as hard disks and SSDs. DRAM is readily available in the market at better price point in comparison to DRAM-alternatives. These trends make DRAM a better storage media for latency-sensitive data management applications. For example, mobile applications require low-latency responses to user requests. The “hot set” of large transactional workloads fit comfortably in memory. Many large-scale web applications such as Facebook and Amazon manage most of their active data in main memory. With the emergence of such a diverse pool of latency-sensitive applications coupled with dropping DRAM prices, it is timely to explore main-memory optimized data management platforms.

In addition, almost all major database vendors offer (or plan to offer) main-memory optimized database solutions. Examples include solidDB from IBM, Hekaton from Microsoft, TimesTen and Exalytics from Oracle, HANA from SAP, and startups such as MemSQL and VoltDB. Such interest from most major vendors clearly shows the emerging trend and the need for further research in this direction.

We organized the In-Memory Data Management and Analytics workshop (IMDM) to bring together researchers and practitioners interested in the proliferation of in-memory data management and analytics infrastructures. The workshop is a forum to present research challenges, novel ideas, and methodologies that can improve in-memory (main memory) data management and analytics. These proceedings contain papers from both the 2013 and 2014 workshops colocated with VLDB in Trento, Italy and Hangzhou, China, respectively. Both workshops were well attended and sparked interesting technical discussions spanning themes from main-memory graph analytics platforms to main-memory OLTP applications.

All papers in these proceedings were peer reviewed by an expert Program Committee comprised of experts from both industry and academia. We would like to thank these committee members as well as the authors for contributing high-quality work.

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