

Preface

Preface to the Second Edition

About one year ago we published the first edition of this book. Within this last year, in-memory technology had such a big impact on the enterprise computing and application market that it truly marked an inflection point. This progress on the one hand, but also the resulting new questions on the other hand, convinced us that it is time for an extended second edition of our book.

The new content in the second edition targets the development and deployment of data-intensive applications that are designed for leveraging the capabilities of in-memory database systems. Among other new content, [Sect. 6.1.1](#) introduces an in-memory application programming model that includes the most important aspects and guidelines for developing in-memory applications. To ease the tasks of application developers and database administrators, we discuss the graphical creation of database views in [Sect. 6.1.5](#). Finally, we also elaborate on new features on application level, e.g., in [Sect. 6.2.4](#) through the combination of data analytics and text search and by presenting two industry case studies in [Sect. 9.2](#).

Of course, we could not have written a second edition of this book in such a short time without the help of our students at our Enterprise Platform and Integration Concepts chair. Therefore, we want to thank them in addition to the acknowledgement in the following preface of the first edition for their hard work and efforts.

Potsdam, 1 March 2012

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We wrote this book because we think that the use of in-memory technology marks an inflection point for enterprise applications. The capacity per dollar and the availability of main memory has increased markedly in the last few years. This has led to a rethinking of how mass data should be stored. Instead of using mechanical disk drives it is now possible to store the primary data copy of a database in silicon-based main memory resulting in an orders of magnitude improvement in performance and allowing completely new applications to be developed. This change in the way data are stored is having, and will continue to have a significant impact on enterprise applications and ultimately on the way businesses are run. Having real-time information available at the speed of thought provides decision makers in an organization with insights that have, until now, not existed.

This book serves the interests of specific reader groups. Generally, the book is intended for anyone who wishes to find out how this fundamental shift in the way data is managed is affecting, and will continue to affect enterprise applications. In particular, we hope that university students, IT professionals, and IT managers, as well as senior management, who wish to create new business processes by leveraging in-memory computing, will find this book inspiring.

The book is divided into three parts:

- Part I gives an overview of our vision of how in-memory technology will change enterprise applications. This part will be of interest to all readers.
- Part II provides a more in-depth description of how we intend to realize our vision, and addresses students and developers, who want a deeper technical understanding of in-memory data management.
- Part III describes the resulting implications on the development and capabilities of enterprise applications, and is suited for technical as well as business-oriented readers.

Writing a book like this always involves more people than just the authors. We would like to thank the members of our Enterprise Platform and Integration Concepts group at the Hasso Plattner Institute at the University of Potsdam in Germany. Anja Bog, Martin Grund, Jens Krüger, Stephan Müller, Jan Schaffner, and Christian Tinnefeld are part of the HANA research group and their work over the last 5 years in the field of in-memory applications is the foundation for our book. Vadym Borovskiy, Thomas Kowark, Ralph Kühne, Martin Lorenz, Jürgen Müller, Oleksandr Panchenko, Matthieu Schapranow, Christian Schwarz, Matthias Uflacker, and Johannes Wust also made significant contributions to the book and our assistant Andrea Lange helped with the necessary coordination. Additionally, writing this book would not have been possible without the help of many colleagues at SAP. Cafer Tosun in his role as the link between HPI and SAP not only coordinates our partnership with SAP, but also actively provided sections for our book. His team members Andrew McCormick-Smith and Christian Mathis added important text passages to the book. We are grateful for the work of Joos-Hendrik Boese, Bernhard Fischer, Enno Folkerts, Andreas Herschel, Sarah Kappes,

Christian Münkel, Frank Renkes, Frederik Transier, and other members of his extended team. We would like to thank Paul Hofmann for his input and for his valuable help in managing our research projects with American Universities. The results we achieved in our research efforts would also not have been possible without the outstanding help of many other colleagues at SAP. We would particularly like to thank Franz Färber and his team for their feedback and their outstanding contributions to our research results over the past years. Many ideas that we describe throughout the book were originally Franz's, and he is also responsible for their implementation within SAP. We especially want to emphasize his efforts.

Finally, we want to express our gratitude to SAP CTO Vishal Sikka for his sponsorship of our research and his personal involvement in our work. In addition, we are grateful to SAP COO Gerhard Oswald and SAP Co-CEOs Jim Hagemann Snabe and Bill McDermott for their ongoing support of our projects.

We encourage you to visit the official website of this book. The website contains updates about the book, reviews, blog entries about in-memory data management, and examination questions for students.

no-disk.com

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