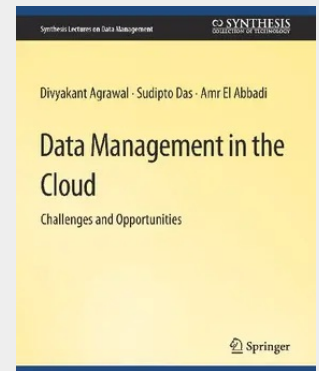


Data Management in the Cloud

Cloud computing has emerged as a successful paradigm of service-oriented computing and has revolutionized the way computing infrastructure is used. This success has seen a proliferation in the number of applications that are being deployed in various cloud platforms. There has also been an increase in the scale of the data generated as well as consumed by such applications. Scalable database management systems form a critical part of the cloud infrastructure. The attempt to address the challenges posed by the management of big data has led to a plethora of systems. This book aims to clarify some of the important concepts in the design space of scalable data management in cloud computing infrastructures. Some of the questions that this book aims to answer are: the appropriate systems for a specific set of application requirements, the research challenges in data management for the cloud, and what is novel in the cloud for database researchers? We also aim to address one basic question: whether cloud computing poses new challenges in scalable data management or it is just a reincarnation of old problems? We provide a comprehensive background study of state-of-the-art systems for scalable data management and analysis. We also identify important aspects in the design of different systems and the applicability and scope of these systems. A thorough understanding of current solutions and a precise characterization of the design space are essential for clearing the "cloudy skies of data management" and ensuring the success of DBMSs in the cloud, thus emulating the success enjoyed by relational databases in traditional enterprise settings. Table of Contents: Introduction / Distributed Data Management / Cloud Data Management: Early Trends / Transactions on Co-located Data / Transactions on Distributed Data / Multi-tenant Database Systems / Concluding Remarks

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35,30 €

32,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783031007675

Medium: Buch

ISBN: 978-3-031-00767-5

Verlag: Springer

Erscheinungstermin: 13.12.2012

Sprache(n): Englisch

Auflage: Erscheinungsjahr 2012

Serie: Synthesis Lectures on Data Management

Produktform: Kartoniert

Gewicht: 277 g

Seiten: 120

Format (B x H): 191 x 235 mm

