



**Event Data, Stream Processing, and Data Integration****Enabling Data Ecosystems for Intelligent Systems****Enhancing User Experience and Creating Business Value**

XML is one of the most common standards for the exchange of information. However, organizations find challenges in how to address the complexities of dealing with hierarchical data types, particularly as they scale to gigabytes and beyond. In this IBM® Redbooks® publication, we discuss and describe the new capabilities in IBM InfoSphere® DataStage® 8.5. These capabilities enable developers to more easily manage the design and processing requirements presented by the most challenging XML sources. Developers can use these capabilities to create powerful hierarchical transformations and to parse and compose XML data with high performance and scalability. Spanning both batch and real-time run times, these capabilities can be used to solve a broad range of business requirements. As part of the IBM InfoSphere Information Server 8.5 release, InfoSphere DataStage was enhanced with new hierarchical transformation capabilities called . XML Stage provides native XML schema support and powerful XML transformation functionality. These capabilities are based on a unique state-of-the-art technology that allows you to parse and compose any complex XML structure from and to a relational form, as well as to a separate hierarchical form. This book is targeted at an audience of systems designers and developers who focus on implementing XML integration support in their environments.

This book constitutes the thoroughly refereed post-conference proceedings of the Third International Workshop on Business Intelligence for the Real-Time Enterprise, BIRTE 2009, held in Lyon, France, in August 2009, in conjunction with VLDB 2009, the International Conference on Very Large Data Bases. The volume contains the carefully reviewed selected papers from the workshop, including one of the two keynotes, the six research, two industrial, and one experimental paper, and also the basic statements from the panel discussion on "Merging OLTP and OLAP". The topical focus is on models and concepts, architectures, case-studies, and applications of technologies for real-time enterprise business intelligence.

Have you seen any projects using hadoop where data integration issues led to significant problems? Is it generally accepted on real-time data integration projects that a canonical model is needed? Is a plan for Data Management required if a project is not expected to generate data or samples? When do you use batch data integration versus real-time data integration in a big data project? Who ensures that the data architecture will be updated as evolving data types and needs arise? Defining, designing, creating, and implementing a process to solve a challenge or meet an objective is the most valuable role... In EVERY group, company, organization and department. Unless you are talking to a one-time, single-use project, there should be a process. Whether that process is managed and implemented by humans, AI, or a combination of the two, it needs to be designed by someone with a complex enough perspective to ask the right questions. Someone capable of asking the right questions and step back and say, "What are you really trying to accomplish here? And is there a different way to look at it?" This Self-Assessment empowers people to do just that - whether their title is entrepreneur, manager, consultant, (Vice-)President, CxO etc. ... - they are the people who rule the future. They are the person who asks the right questions to make Data Access Language investments work better. This Data Access Language All-Inclusive Self-Assessment enables You to be that person. All the tools you need to an in-depth Data Access Language Self-Assessment. Featuring 540 new and updated case-based questions, organized into seven core areas of process design, this Self-Assessment will help you identify areas in which Data Access Language Improvements can be made. In using the questions you will be better able to: - diagnose Data Access Language projects, initiatives, organizations, businesses and processes using accepted diagnostic standards and practices - implement evidence-based best practice strategies aligned with overall goals - integrate recent advances in Data Access Language and process design strategies into practice according to best practice guidelines Using a Self-Assessment tool known as the Data Access Language Scorecard, you will develop a clear picture of which Data Access Language areas need attention. Your purchase includes access details to the Data Access Language self-assessment dashboard download which gives you your dynamically prioritized projects-ready tool and shows your organization exactly what to do next. You will receive the following contents with New and Updated specific criteria: - The latest quick edition of the book in PDF - The latest complete edition of the book in PDF, which criteria correspond to the criteria in... - The Self-Assessment Excel Dashboard - Example pre-filled Self-Assessment Excel Dashboard to get familiar with results generation - In-depth and specific Data Access Language Checklists - Project management checklists and templates to assist with implementation INCLUDES LIFETIME SELF ASSESSMENT UPDATES Every self assessment comes with Lifetime Updates and Lifetime Free Updated Books. Lifetime Updates is an industry-first feature which allows you to receive verified self assessment updates, ensuring you always have the most accurate information at your fingertips.

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Customer Data Integration

How do you approach answering queries when your data is stored in multiple databases that were designed independently by different people? This is first comprehensive book on data integration and is written by three of the most respected experts in the field. This book provides an extensive introduction to the theory and concepts underlying today's data integration techniques, with detailed, instruction for their application using concrete examples throughout to explain the concepts. Data integration is the problem of answering queries that span multiple data sources (e.g., databases, web pages). Data integration problems surface in multiple contexts, including enterprise information integration, query processing on the Web, coordination between government agencies and collaboration between scientists. In some cases, data integration is the key bottleneck to making progress in a field. The authors provide a working knowledge of data integration concepts and techniques, giving you the tools you need to develop a complete and concise package of algorithms and applications. Offers a range of data integration solutions enabling you to focus on what is most relevant to the problem at hand Enables you to build your own algorithms and implement your own data integration applications

This book constitutes the proceedings of the 13th European Conference on Technology Enhanced Learning, EC-TEL 2018, held in Leeds, UK, in September 2018. The 42 full and short papers, 7 demo papers, and 23 poster papers presented in this volume were carefully reviewed and selected from 142 submissions. This year, the European Conference on Technology-Enhanced Learning (EC-TEL) will engage researchers, practitioners, educational developers, entrepreneurs and policy makers in a joint discussion on how to put science, technology and practice at the service of learning to embrace these challenges on the topic: Lifelong technology enhanced learning: Dealing with the complexity of 21st century challenges. /div Chapter "" is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.

A practical guide to help you tackle different real-time data processing and analytics problems using the best tools for each scenario About This Book Learn about the various challenges in real-time data processing and use the right tools to overcome them This book covers popular tools and frameworks such as Spark, Flink, and Apache Storm to solve all your distributed processing problems A practical guide filled with examples, tips, and tricks to help you perform efficient Big Data processing in real-time Who This Book Is For If you are a Java developer who would like to be equipped with all the tools required to devise an end-to-end practical solution on real-time data streaming, then this book is for you. Basic knowledge of real-time processing would be helpful, and knowing the fundamentals of Maven, Shell, and Eclipse would be great. What You Will Learn Get an introduction to the established real-time stack Understand the key integration of all the components Get a thorough understanding of the basic building blocks for real-time solution designing Garnish the search and visualization aspects for your real-time solution Get conceptually and practically acquainted with real-time analytics Be well equipped to apply the knowledge and create your own solutions In Detail With the rise of Big Data, there is an increasing need to process large amounts of data continuously, with a shorter turnaround time. Real-time data processing involves continuous input, processing and output of data, with the condition that the time required for processing is as short as possible. This book covers the majority of the existing and evolving open source technology stack for real-time processing and analytics. You will get to know about all the real-time solution aspects, from the source to the presentation to persistence. Through this practical book,

you'll be equipped with a clear understanding of how to solve challenges on your own. We'll cover topics such as how to set up components, basic executions, integrations, advanced use cases, alerts, and monitoring. You'll be exposed to the popular tools used in real-time processing today such as Apache Spark, Apache Flink, and Storm. Finally, you will put your knowledge to practical use by implementing all of the techniques in the form of a practical, real-world use case. By the end of this book, you will have a solid understanding of all the aspects of real-time data processing and analytics, and will know how to deploy the solutions in production environments in the best possible manner. Style and Approach In this practical guide to real-time analytics, each chapter begins with a basic high-level concept of the topic, followed by a practical, hands-on implementation of each concept, where you can see the working and execution of it. The book is written in a DIY style, with plenty of practical use cases, well-explained code examples, and relevant screenshots and diagrams.

Cloud Enterprise Architecture examines enterprise architecture (EA) in the context of the surging popularity of Cloud computing. It explains the different kinds of desired transformations the architectural blocks of EA undergo in light of this strategically significant convergence. Chapters cover each of the contributing architectures of EA—business, information, application, integration, security, and technology—illustrating the current and impending implications of the Cloud on each. Discussing the implications of the Cloud paradigm on EA, the book details the perceptible and positive changes that will affect EA design, governance, strategy, management, and sustenance. The author ties these topics together with chapters on Cloud integration and composition architecture. He also examines the Enterprise Cloud, Federated Clouds, and the vision to establish the InterCloud. Laying out a comprehensive strategy for planning and executing Cloud-inspired transformations, the book: Explains how the Cloud changes and affects enterprise architecture design, governance, strategy, management, and sustenance Presents helpful information on next-generation Cloud computing Describes additional architectural types such as enterprise-scale integration, security, management, and governance architectures This book is an ideal resource for enterprise architects, Cloud evangelists and enthusiasts, and Cloud application and service architects. Cloud center administrators, Cloud business executives, managers, and analysts will also find the book helpful and inspirational while formulating appropriate mechanisms and schemes for sound modernization and migration of traditional applications to Cloud infrastructures and platforms.

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Third International Workshop, BIRTE 2009, Held at the 35th International Conference on Very Large Databases, VLDB 2009, Lyon, France, August 24, 2009, Revised Selected Papers

Efficient Joins to Process Stream Data

Principles of Data Integration

4th International Conference, ICICA 2013, Singapore, August 16-18, 2013. Revised Selected Papers, Part II

**As data management and integration continue to evolve rapidly, storing all your data in one place, such as a data warehouse, is no longer scalable. In the very near future, data will need to be distributed and available for several technological solutions. With this practical book, you'll learn how to migrate your enterprise from a complex and tightly coupled data landscape to a more flexible architecture ready for the modern world of data consumption. Executives, data architects, analytics teams, and compliance and governance staff will learn how to build a modern scalable data landscape using the Scaled Architecture, which you can introduce incrementally without a large upfront investment. Author Piethein Strengholt provides blueprints, principles, observations, best practices, and patterns to get you up to speed. Examine data management trends, including technological developments, regulatory requirements, and privacy concerns Go deep into the Scaled Architecture and learn how the pieces fit together Explore data governance and data security, master data management, self-service data marketplaces, and the importance of metadata**

**Making Data Integration Work: How to Systematically Reduce Cost, Improve Quality, and Enhance Effectiveness Today's enterprises are investing massive resources in data integration. Many possess thousands of point-to-point data integration applications that are costly, undocumented, and difficult to maintain. Data integration now accounts for a major part of the expense and risk of typical data warehousing and business intelligence projects--and, as businesses increasingly rely on analytics, the need for a blueprint for data integration is increasing now more than ever. This book presents the solution: a clear, consistent approach to defining, designing, and building data integration components to reduce cost, simplify management, enhance quality, and improve effectiveness. Leading IBM data management expert Tony Giordano brings together best practices for architecture, design, and methodology, and shows how to do the disciplined work of getting data integration right. Mr. Giordano begins with an overview of the "patterns" of data integration, showing how to build blueprints that smoothly handle both operational and analytic data integration. Next, he walks through the entire project lifecycle, explaining each phase, activity, task, and deliverable through a complete case study. Finally, he shows how to integrate data integration with other information management disciplines, from data governance to metadata. The book's appendices bring together key principles, detailed models, and a complete data integration glossary. Coverage includes Implementing repeatable, efficient, and well-documented processes for integrating data Lowering costs and improving quality by eliminating unnecessary or duplicative data integrations Managing the high levels of complexity associated with integrating business and technical data Using intuitive graphical design techniques for more effective process and data integration modeling Building end-to-end data integration applications that bring together many complex data sources**

**This open access book explores the dataspace paradigm as a best-effort approach to data management within data ecosystems. It establishes the theoretical foundations and principles of real-time linked dataspaces as a data platform for intelligent systems. The book introduces a set of specialized best-effort techniques and models to enable loose administrative proximity and semantic integration for managing and processing events and streams. The book is divided into five major parts: Part I "Fundamentals and Concepts" details the motivation behind and core concepts of real-time linked dataspaces, and establishes the need to evolve data management techniques in order to meet the challenges of enabling data ecosystems for intelligent systems within smart environments. Further, it explains the fundamental concepts of dataspaces and the need for specialization in the processing of dynamic real-time data. Part II "Data Support Services" explores the design and evaluation of critical services, including catalog, entity management, query and search, data service discovery, and human-in-the-loop. In turn, Part III "Stream and Event Processing Services" addresses the design and evaluation of the specialized techniques created for real-time support services including complex event processing, event service composition, stream dissemination, stream matching, and approximate semantic matching. Part IV "Intelligent Systems and Applications" explores the use of real-time linked dataspaces within real-world smart environments. In closing, Part V "Future Directions" outlines future research challenges for dataspaces, data ecosystems, and intelligent systems. Readers will gain a detailed understanding of how the dataspace paradigm is now being used to enable data ecosystems for intelligent systems within smart environments. The book covers the fundamental theory, the creation of new techniques needed for support services, and lessons learned from real-world intelligent systems and applications focused on sustainability. Accordingly, it will benefit not only researchers and graduate students in the fields of data management, big data, and IoT, but also professionals who need to create advanced data management platforms for intelligent systems, smart environments, and data ecosystems.**

**The Internet has redefined how maps are used. No longer restricted to paper, maps are now transmitted almost instantly and delivered to the user in a fraction of the time required to distribute maps on paper. They are viewed in a more timely fashion. The Internet presents the map user with both a faster method of map distribution and different forms of mapping. This book provides an international perspective on this growing area of information dissemination.**