

# Oracle Database Transactions and Locking Revealed

Building High Performance Through Concurrency

Second Edition

Darl Kuhn Thomas Kyte

# **Oracle Database Transactions And Locking Revealed**

**Elvis Foster, Shripad Godbole** 

#### **Oracle Database Transactions And Locking Revealed:**

Oracle Database Transactions and Locking Revealed Thomas Kyte, Darl Kuhn, 2014-11-05 Oracle Database Transactions and Locking Revealed provides much needed information for building scalable high concurrency applications and deploy them against the Oracle Database Read this short 150 page book that is adapted from Expert Oracle Database Architecture to gain a solid and accurate understanding of how locking and concurrency are dealt with by Oracle Database Also learn how the Oracle Database architecture accommodates user transactions and how you can write code to mesh with how Oracle Database is designed to operate Good transaction design is an important facet of highly concurrent applications that are run by hundreds even thousands of users who are all executing transactions at the same time Transaction design in turn relies upon a good understanding of how the underlying database platform manages of the locking of resources so as to prevent access conflicts and data loss that might otherwise result from concurrent access to data in the database Oracle Database Transactions and Locking Revealed covers in detail the various lock types and also different locking schemes such as pessimistic and optimistic locking Then you ll learn about transaction isolation and multiversion concurrency and how the various lock types support Oracle Database s transactional features You ll learn some good tips for transaction design as well as some bad practices and habits to avoid Coverage is also given to redo and undo and their role in concurrency This is an important book that anyone developing highly concurrent applications will want to have handy on their shelf Database Transactions and Locking Revealed Darl Kuhn, Thomas Kyte, 2020-10-30 Access much needed information for building scalable high concurrency applications and deploying them against the Oracle Database This new edition is updated to be current with Oracle Database 19 It includes a new chapter with troubleshooting recipes to help you quickly diagnose and resolve locking problems that are urgent and block production Good transaction design is an important facet of highly concurrent applications that are run by hundreds even thousands of users who are executing transactions at the same time Transaction design in turn relies on a good understanding of how the database engine manages the locking of resources to prevent access conflicts and data loss that might otherwise result from concurrent access to data in the database This book provides a solid and accurate explanation of how locking and concurrency are dealt with by Oracle Database You will learn how the Oracle Database architecture accommodates user transactions and how you can write code to mesh with the way in which Oracle Database is designed to operate Oracle Database Transactions and Locking Revealed covers in detail the various lock types and also different locking schemes such as pessimistic and optimistic locking Then you will learn about transaction isolation and multi version concurrency and how the various lock types support Oracle Database s transactional features You will learn tips for transaction design as well as some bad practices and habits to avoid Coverage is also given to redo and undo and their role in concurrency The book is loaded with insightful code examples that drive home each concept This is an important book that anyone developing highly concurrent applications will want to have handy on their shelf What

You Will Learn Avoid application lockups due to conflicts over accessing the same resource Understand how Oracle prevents one application from overwriting another's modifications Create transaction designs that mesh with how Oracle Database is designed Build high throughput applications supporting thousands of concurrent users Design applications to take full advantage of Oracle's powerful database engine Gain a fundamental knowledge of Oracle's transaction and locking architecture Develop techniques to quickly diagnose and resolve common locking issues Who This Book Is For Oracle developers and database administrators faced with troubleshooting and solving deadlocks locking contention and similar problems that are encountered in high concurrency environments and application developers wanting to design their applications to excel at multi user concurrency by taking full advantage of Oracle Database's multi versioning and Emerging Trends in Information Systems and Technologies Alvaro Rocha, Hojjat Adeli, Aneta concurrency support Poniszewska-Marańda, Fernando Moreira, Isaias Bianchi, 2025-11-18 This book comprises a selection of articles from the 13th World Conference on Information Systems and Technologies WorldCIST 25 held from April 15 to 17 2025 at the Federal University of Santa Catarina Florian polis Brazil WorldCIST is a global forum for researchers and practitioners to present and discuss recent results and innovations current trends professional experiences and the challenges of modern research in Information Systems and Technologies along with their technological developments and applications The main and distinctive topics covered include A Information and Knowledge Management B Organizational Models and Information Systems C Software and Systems Modeling D Software Systems Architectures Applications and Tools E Multimedia Systems and Applications F Computer Networks Mobility and Pervasive Systems G Intelligent and Decision Support Systems H Big Data Analytics and Applications I Human Computer Interaction J Ethics Computers and Security K Health Informatics L Information Technologies in Education M Information Technologies in Radiocommunications N Technologies for Biomedical Applications The primary target audience for this book is postgraduate students and researchers in the field of Information Systems and Technologies The secondary audience includes undergraduate students and professionals in the same field

Good Practices and New Perspectives in Information Systems and Technologies Álvaro Rocha, Hojjat
Adeli, Gintautas Dzemyda, Fernando Moreira, Aneta Poniszewska-Marańda, 2024-05-15 This book is composed by a selection of
articles from the 12th World Conference on Information Systems and Technologies WorldCIST 24 held between 26 and 28 of
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Tuning Recipes Sam Alapati, Darl Kuhn, Bill Padfield, 2014-01-21 Performance problems are rarely problems per se They are more often crises during which you re pressured for results by a manager standing outside your cubicle while your phone rings with gueries from the help desk You won t have the time for a leisurely perusal of the manuals nor to lean back and read a book on theory What you need in that situation is a book of solutions and solutions are precisely what Oracle Database 12c Performance Tuning Recipes delivers Oracle Database 12c Performance Tuning Recipes is a ready reference for database administrators in need of immediate help with performance issues relating to Oracle Database The book takes an example based approach wherein each chapter covers a specific problem domain Within each chapter are recipes showing by example how to perform common tasks in that chapter s domain Solutions in the recipes are backed by clear explanations of background and theory from the author team Whatever the task if it's performance related you'll probably find a recipe and a solution in this book Provides proven solutions to real life Oracle performance problems Offers relevant background and theory to support each solution Gets straight to the point for when you re under pressure for results Query Formulation, and Administration Michael Mannino, 2023-11-30 Formerly published by Chicago Business Press now published by Sage Database Design Query Formulation and Administration Eighth Edition offers a comprehensive understanding of database technology Author Michael Mannino equips students with the necessary tools to grasp the fundamental concepts of database management and then guides them in honing their skills to solve both basic and advanced problems for operational databases and data warehouses in query formulation database design and administration Features of the Eighth Edition Unmatched SQL coverage in both breadth and depth Oracle and PostgreSQL coverage Problem solving guidelines Sample databases and examples Normalization Physical database design Triggers Data modeling tools Data warehouse design Data integration NoSQL coverage Current and cutting edge topics Comprehensive enough for multiple database courses Expert Oracle Database Architecture Thomas Kyte, 2006-11-07 This is a defining book on the Oracle database for any developer or database administrator who works with Oracle driven database applications Tom Kyte has a simple philosophy you can treat Oracle as a black box and just stick data into it or you can understand how it works and exploit it as a powerful computing environment If you choose the latter then you will find that there are few information management problems that you cannot solve quickly and elegantly Expert Oracle Database Architecture is the first of a three book series that completely explores and defines the Oracle database It covers all of the most important Oracle architecture features including Files memory structures and processes Locking and latching Transactions concurrency and multi versioning Tables and Indexes Datatypes Partitioning and parallelism Each feature is taught in a proof by example manner not only discussing what it is but also how it works how to implement software using it and the common pitfalls associated with it This fully revised edition covers both the 9i and 10g versions It also comes with a CD containing a searchable PDF of the 8i version of the book Tom has fully revised and expanded the architecture related sections from Expert One on One

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**Oracle Internals** Donald K. Burleson, 2017-07-27 If you are a typical Oracle professional you don t have the luxury of time to keep up with new technology and read all the new manuals to understand each new feature of the latest release from Oracle You need a comprehensive source of information and in depth tips and techniques for using the new technology You need Oracle Internals Tips Trick Database Systems Elvis Foster, Shripad Godbole, 2022-09-26 This book provides a concise but comprehensive guide to the disciplines of database design construction implementation and management Based on the authors professional experience in the software engineering and IT industries before making a career switch to academia the text stresses sound database design as a necessary precursor to successful development and administration of database systems The discipline of database systems design and management is discussed within the context of the bigger picture of software engineering Students are led to understand from the outset of the text that a database is a critical component of a software infrastructure and that proper database design and management is integral to the success of a software system Additionally students are led to appreciate the huge value of a properly designed database to the success of a business enterprise The text was written for three target audiences It is suited for undergraduate students of computer science and related disciplines who are pursuing a course in database systems graduate students who are pursuing an introductory course to database and practicing software engineers and information technology IT professionals who need a quick reference on database design Database Systems A Pragmatic Approach 3rd Edition discusses concepts principles design implementation and management issues related to database systems Each chapter is organized into brief reader

friendly conversational sections with itemization of salient points to be remembered This pragmatic approach includes adequate treatment of database theory and practice based on strategies that have been tested proven and refined over several years Features of the third edition include Short paragraphs that express the salient aspects of each subject Bullet points itemizing important points for easy memorization Fully revised and updated diagrams and figures to illustrate concepts to enhance the student's understanding Real world examples Original methodologies applicable to database design Step by step student friendly guidelines for solving generic database systems problems Opening chapter overviews and concluding chapter summaries Discussion of DBMS alternatives such as the Entity Attributes Value model NoSQL databases database supporting frameworks and other burgeoning database technologies A chapter with sample assignment questions and case studies. This textbook may be used as a one semester or two semester course in database systems augmented by a DBMS preferably Oracle After its usage students will come away with a firm grasp of the design development implementation and management of a database system Database Systems Elvis C. Foster, Shripad Godbole, 2016-11-07 Learn the concepts principles design implementation and management issues of databases You will adopt a methodical and pragmatic approach to solving database systems problems Database Systems A Pragmatic Approach provides a comprehensive yet concise introduction to database systems with special emphasis on the relational database model This book discusses the database as an essential component of a software system as well as a valuable mission critical corporate resource New in this second edition is updated SQL content covering the latest release of the Oracle Database Management System along with a reorganized sequence of the topics which is more useful for learning Also included are revised and additional illustrations as well as a new chapter on using relational databases to anchor large complex management support systems There is also added reference content in the appendixes This book is based on lecture notesthat have been tested and proven over several years with outstanding results It combines a balance of theory with practice to give you your best chance at success Each chapter is organized systematically into brief sections with itemization of the important points to be remembered Additionally the book includes a number of author Elvis Foster's original methodologies that add clarity and creativity to the database modeling and design experience What You ll Learn Understand the relational model and the advantages it brings to software systems Design database schemas with integrity rules that ensure correctness of corporate data Query data using SQL in order to generate reports charts graphs and other business results Understand what it means to be a database administrator and why the profession is highly paid Build and manage web accessible databases in support of applications delivered via a browser Become familiar with the common database brands their similarities and differences Explore special topics such as tree based data hashing for fast access distributed and object databases and more Who This Book Is For Students who are studying database technology who aspire to a career as a database administrator or designer and practicing database administrators and developers desiring to strengthen their knowledge of database theory **Oracle 11G Administration** 

In Simple Steps Kogent Solutions Inc.,2008-06 This book contains the step by step information about the Oracle 11g database Administration This book is for you if you are familiar with SQL and are looking for a book that effectively explains the concepts of the Oracle 11g database Administration It gives the core information about administrating the Oracle 11g database using the new and improved Enterprise Manager GUI The book contains lots of examples and helps you to perform the Oracle 11g administration in an easier way You will also find information about the Grid Architecture in this book

**Database Tuning** Dennis Shasha, Philippe Bonnet, 2002-06-07 Tuning your database for optimal performance means more than following a few short steps in a vendor specific guide For maximum improvement you need a broad and deep knowledge of basic tuning principles the ability to gather data in a systematic way and the skill to make your system run faster This is an art as well as a science and Database Tuning Principles Experiments and Troubleshooting Techniques will help you develop portable skills that will allow you to tune a wide variety of database systems on a multitude of hardware and operating systems Further these skills combined with the scripts provided for validating results are exactly what you need to evaluate competing database products and to choose the right one Forward by Jim Gray with invited chapters by Joe Celko and Alberto Lerner Includes industrial contributions by Bill McKenna RedBrick Informix Hany Saleeb Oracle Tim Shetler TimesTen Judy Smith Deutsche Bank and Ron Yorita IBM Covers the entire system environment hardware operating system transactions indexes gueries table design and application analysis Contains experiments scripts available on the author's site to help you verify a system's effectiveness in your own environment Presents special topics including data warehousing Web support main memory databases specialized databases and financial time series Describes performance monitoring techniques that will help you recognize and troubleshoot problems Oracle 10g Grid and Real Application Clusters Mike Ault, Madhu Tumma, Ranko Mosic, 2004-08 Revealing the secrets for quickly implementing and tuning Oracle RAC database systems this book covers all areas of Oracle Real Application Clusters including Oracle10g new features Oracle DBAs who are charged with configuring and implementing a RAC clusters database will benefit from this complete guide to the installation as well as configuration and design of Oracle Real Application Clusters Information is supplied on expert internals of shared disk technology raw devices and RAID with RAC the internal concurrency resource coordination and the locking mechanism within RAC Also explained are Transparent Application Failover TAF and monitoring and tuning Oracle10g RAC applications

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