

Plan hash value: 1232802935

Id	Operation	Name	Rows
0	SELECT STATEMENT		1
1	SORT AGGREGATE		1
2	VIEW	VW_EMP_LOC_DIM	198M
3	UNION-ALL		
* 4	HASH JOIN		296K
* 5	VIEW		240K
* 6	WINDOW SORT PUSHED RANK		240K
* 7	FILTER		
* 8	TABLE ACCESS STORAGE FULL	EMP_DIM	240K
* 9	TABLE ACCESS STORAGE FULL	EMP_LOC_DIM	296K
10	COUNT		
* 11	HASH JOIN		152M
12	VIEW		8874
13	HASH UNIQUE		8874
* 14	FILTER		
* 15	TABLE ACCESS STORAGE FULL	EMPLR_LOC_DIM	8874
16	VIEW		240K
17	MINUS		
18	SORT UNIQUE		240K
* 19	TABLE ACCESS STORAGE FULL	EMP_DIM	240K
20	SORT UNIQUE		251K
* 21	TABLE ACCESS STORAGE FULL	EMP_LOC_DIM	251K

Oracle SQL Performance Tuning and Optimization

It's all about the Cardinalities

FRP SPREADSHEET

ID	TABLE_NAME	NUM_ROWS	ROWCOUNT	Plan Cardinality	Filtered Cardinality	Actual FRP
8	EMP_DIM	6243035	6243035	240117	215414	3.5
9	EMP_LOC_DIM	329699	329699	296337	329699	100.0
15	EMPLR_LOC_DIM	8874	8874	8874	8872	100.0
19	EMP_DIM	6243035	6243035	240117	236469	3.8
21	EMP_LOC_DIM	329699	329699	251761	212993	64.6

5 rows selected.

Oracle Sql Performance Tuning And Optimization Its All About The Cardinalities

**Leonid Nossov, Hanno Ernst, Victor
Chupis**



Oracle Sql Performance Tuning And Optimization Its All About The Cardinalities:

Oracle SQL Performance Tuning and Optimization Kevin Meade, 2014-09-16 Written by a Senior Database Administrator who has worked with the Oracle RDBMS for thirty years this is a book which teaches the skill of SQL Tuning for the Oracle Database Not a list of one off tricks or tips nor a glossing over of topics this book offers an in depth process covering discovery analysis and problem resolution Learn the science behind SQL Tuning Learn and apply the FILTERED ROWS PERCENTAGE Cardinality based method of tuning Determine a query s Driving Table and Join Order Construct Query Diagrams Data Models and Join Trees Build and use Count Filter and Reconstruction Queries Identify Waste in a Query Execution Plan Zero in on Cardinality Divergence using Estimated vs Actuals Use the ACCESS FILTER COVERAGE strategy to build indexes for Problem Queries Exploit THE 2% RULE in analyzing Access method and Join method Classify queries as Precision Style or Warehouse Style Understand Hash Join mechanics and make Hash Joins go faster Make HINTS work as Detection Tools rather than clubs Avoid early Database Design flaws Manage Statistics and deal with common Statistics problems NDV Uniform Distribution Independence Dynamic Sampling Staleness Skew Dependence Defaulting Out Of Bounds Transiency Bloat Perfect your Question Based Analysis Technique and more Included are a special chapter for EXADATA a LAB which demonstrates the cardinality based process of SQL Tuning and twenty three magical SQL scripts that make the process of SQL Tuning easy to do Learn the skill of SQL Tuning as taught by an expert who does it for a living and become the go to specialist in your company Chapter 1 DRIVING TABLE and JOIN ORDER Chapter 2 Ways to Use a Query Execution Plan Chapter 3 The Best Indexes for a Query Chapter 4 JOINS Chapter 5 HINTS Chapter 6 BASICS Chapter 7 ROW COUNTS and RUN TIMES Chapter 8 EXADATA LAB Reverse Engineering the QEP Appendix Know Your Scripts Scripts for analyzing queries and plans Scripts for examining an active database Scripts for looking at metadata showplan showplanshort showplanconstraints showplancountqueries showplandatamodel showplandrivingtable showplanfilterqueries showplanfrpspreadsheetcode showplanindexes showplannumrows showplanquerydiagram showplantables showplantablesunique loadplanfromcache loadplanfromhist showtopcpu showowner showindexes showconstraints showcolstats showhistograms showallscanrates showallworkareas It s all about the Cardinalities [Formales SQL-Tuning für Oracle-Datenbanken](#) Leonid Nossov, Hanno Ernst, Victor Chupis, 2016-02-05 Das Ziel des SQL Tunings ist eine Verbesserung des bestehenden Ausführungsplans Die in diesem Buch beschriebene Methode kann man Bremsenbeseitigung im Ausführungsplan nennen Solche Bremsen oder Engpässe lassen sich durch eine formale Analyse des Ausführungsplans erkennen Dafür sind keine Datenmodellkenntnisse notwendig Das ist besonders vorteilhaft für Datenbankadministratoren weil sie in der Regel gar nicht oder unzureichend gut mit dem Datenmodell vertraut sind Im Buch werden zahlreiche praktische Erfahrungen mit dieser Methode präsentiert **Formal SQL Tuning for Oracle Databases** Leonid Nossov, Hanno Ernst, Victor Chupis, 2016-09-16 The target of SQL tuning is the improvement of the existing execution plan The authors

discuss the removal of brakes in the execution plan Such brakes or bottlenecks can be recognized by a formal analysis of the execution plan For this purpose no data model knowledge is needed This is especially beneficial for database administrators because they are usually not or insufficiently familiar with the data model The book presents numerous practical examples with this method

Relational Database Design and Implementation Jan L. Harrington, 2016-04-15 Relational Database Design and Implementation Clearly Explained Fourth Edition provides the conceptual and practical information necessary to develop a database design and management scheme that ensures data accuracy and user satisfaction while optimizing performance Database systems underlie the large majority of business information systems Most of those in use today are based on the relational data model a way of representing data and data relationships using only two dimensional tables This book covers relational database theory as well as providing a solid introduction to SQL the international standard for the relational database data manipulation language The book begins by reviewing basic concepts of databases and database design then turns to creating populating and retrieving data using SQL Topics such as the relational data model normalization data entities and Codd's Rules and why they are important are covered clearly and concisely In addition the book looks at the impact of big data on relational databases and the option of using NoSQL databases for that purpose Features updated and expanded coverage of SQL and new material on big data cloud computing and object relational databases Presents design approaches that ensure data accuracy and consistency and help boost performance Includes three case studies each illustrating a different database design challenge Reviews the basic concepts of databases and database design then turns to creating populating and retrieving data using SQL

Expert Oracle SQL Tony Hasler, 2014-07-05 Expert Oracle SQL Optimization Deployment and Statistics is about optimizing individual SQL statements especially on production database systems This Oracle specific book begins by assuming you have already identified a particular SQL statement and are considering taking steps to improve its performance The book describes a systematic process by which to diagnose a problem statement identify a fix and to implement that fix safely in a production system You ll learn not only to improve performance when it is too slow but also to stabilize performance when it is too variable You ll learn about system statistics and how the Cost Based Optimizer uses them to determine a suitable execution plan for a given statement That knowledge provides the foundation from which to identify the root cause and to stabilize and improve performance Next after identifying a problem and the underlying root cause is to put in place a solution Expert Oracle SQL Optimization Deployment and Statistics explains how to apply various remedies such as changing the SQL statement adding hints changing the physical design and more and how they can be brought to bear on fixing a problem once and for all Rolling a change out smoothly is an important topic when dealing with tuning and optimization Expert Oracle SQL Optimization Deployment and Statistics does not let you down in this critical area The book contains two chapters of good information from an experienced professional on how to safely deploy changes into production so that your systems remaining running and available

throughout the deployment process Describes a systematic approach to tuning Oracle SQL Explains how things are supposed to work what can go wrong and how to fix it Takes you through the steps needed to stabilize performance in your production systems

OCP: Oracle9i Performance Tuning Study Guide Joseph C. Johnson,2006-07-14 Here s the book you need to prepare for Exam 1Z0 033 Oracle9i Database Performance Tuning This Study Guide provides In depth coverage of official exam objectives Practical information on optimizing Oracle9i databases Hundreds of challenging review questions in the book and on the CD Authoritative coverage of all exam objectives including Using Diagnostic and Tuning Tools Monitoring and Managing the Buffer Cache Optimizing Sort Operations Detecting and Resolving Lock Contention Diagnosing Shared Server Performance Issues Using Oracle Blocks Efficiently Tuning SQL Statements Configuring Resource Manager Note CD ROM DVD and other supplementary materials are not included as part of eBook file

Comprehensive Oracle Database Management: Strategies for Performance Tuning and System Optimization Adam Jones,2025-01-03 Comprehensive Oracle Database Management Strategies for Performance Tuning and System Optimization is an indispensable resource for mastering the intricate realm of Oracle Database administration This book offers extensive insights into the essential techniques and methodologies required to boost the performance reliability and scalability of Oracle systems From grasping the nuances of database architecture and SQL query optimization to mastering sophisticated indexing and efficient memory management this all encompassing guide leaves no stone unturned Aimed at seasoned database administrators system architects and developers this meticulously structured book not only elucidates fundamental concepts but also delves into advanced topics such as concurrency locking mechanisms and intricate diagnostics Each chapter is designed to build progressively upon the previous one ensuring a comprehensive and coherent grasp of effective Oracle Database management Whether you re preparing for advanced Oracle certifications or seeking to resolve critical performance bottlenecks in enterprise environments this book provides a trove of knowledge best practices and expert techniques to achieve optimal database performance Arm yourself with the expertise and tools necessary to adeptly navigate and optimize sophisticated Oracle Database systems Unlock the full potential of your database with Comprehensive Oracle Database Management Strategies for Performance Tuning and System Optimization

Oracle Performance Survival Guide Guy Harrison,2009-10-09 Oracle Performance Survival Guide A Systematic Approach to Database Optimization The fast complete start to finish guide to optimizing Oracle performance Oracle Performance Survival Guide offers a structured systematic start to finish methodology for optimizing Oracle performance as efficiently as possible Leading Oracle expert Guy Harrison shows how to maximize your tuning investment by focusing on causes rather than symptoms and by quickly identifying the areas that deliver the greatest bang for the buck Writing for DBAs and developers with all levels of experience Harrison covers every area of Oracle performance management from application design through SQL tuning contention management through memory and physical IO management He also presents up to the minute guidance for optimizing the performance of the

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your ultimate companion Inside you ll discover In depth explanations of query optimization techniques including cost based optimization index selection and query rewriting Advanced tuning concepts such as cardinality estimation join algorithms and subquery optimization Expert guidance on performance tuning for specific database systems including MySQL PostgreSQL Microsoft SQL Server Oracle Database and NoSQL NewSQL systems Strategies for performance monitoring and diagnostics including identifying slow queries analyzing execution plans and implementing real time performance monitoring Best practices for performance tuning in real time applications data warehouses mobile and IoT environments and machine learning AI workloads SQL Performance Enhancement is more than just a book it s a comprehensive toolkit for database professionals who want to take their skills to the next level With its practical examples expert insights and structured approach this book will help you diagnose and resolve performance issues improve query response times and ensure that your SQL applications run at peak efficiency Unlock the true power of SQL performance tuning and elevate your database skills to new heights Get your copy of SQL Performance Enhancement today and start your journey to database performance excellence If you like this book write a review

Proceedings of the Third International Conference on Information Management and Machine Intelligence Dinesh Goyal,Anil Kumar,Vincenzo Piuri,Marcin Paprzycki,2022-08-03 This book features selected papers presented at Third International Conference on International Conference on Information Management and Machine Intelligence ICIMMI 2021 held at Poornima Institute of Engineering AI machine and deep learning information management security processing techniques and interpretation applications of artificial intelligence in soft computing and pattern recognition cloud based applications for machine learning application of IoT in power distribution systems as well as wireless sensor networks and adaptive wireless communication

Mastering Oracle Database Administration: From On-Premises to Cloud Solutions Dheeraj Yadav Prof Moparthy Nageswara Rao,2025-01-18 The rapid evolution of data driven technologies has positioned databases as the cornerstone of modern business operations Oracle Database a leader in enterprise database solutions has consistently set the standard for performance scalability and reliability As organizations increasingly migrate to hybrid and cloud environments mastering Oracle Database administration has become essential for IT professionals seeking to deliver robust and future proof data management strategies Mastering Oracle Database Administration From On Premises to Cloud Solutions is crafted to equip database administrators architects and IT leaders with the skills and knowledge necessary to navigate the complexities of managing Oracle databases in diverse environments Whether you are overseeing traditional on premises infrastructure embracing cloud native solutions or managing hybrid setups this book provides a comprehensive guide to optimize your database operations In this book you will explore Core principles of Oracle Database architecture and administration Advanced performance tuning techniques for high demand environments Best practices for database backup recovery and security Strategies for seamless migration from on premises to Oracle Cloud Infrastructure OCI Integration of Oracle Database with emerging technologies such as AI and

machine learning With a focus on actionable insights and real world applications this book bridges foundational concepts with cutting edge advancements Each chapter includes practical examples and step by step instructions to help you address common challenges and leverage Oracle s powerful features to their fullest potential As the database landscape evolves so does the role of database administrators This book not only prepares you to meet today s demands but also empowers you to anticipate future trends ensuring your organization remains at the forefront of innovation Authors *SQL All-in-One Desk Reference For Dummies* Allen G. Taylor, 2007-06-15 SQL is the international standard language for creating and maintaining relational databases This book is a compendium of information about SQL and relational database design development and maintenance The nine mini books cover the full spectrum of issues that arise in building using and maintaining relational database systems Book I SQL Concepts Book II Relational Database Development Book III SQL Queries Book IV Data Security Book V SQL and Programming Book VI SQL and XML Book VII Database Tuning Overview Book VIII Appendices

Performance Tuning für Oracle-Datenbanken Leonid Nossov, 2014-03-25 Stellen Sie sich vor Ihre Datenbank lahmpt plötzlich oder steht gar Es kann auch sein dass einige Anwendungsteile zu langsam sind und Sie wissen nicht warum Wie klärt man die Ursache schlechter Performance und wie beseitigt man sie am effektivsten Welche Möglichkeiten bietet Oracle Welche anderen nicht oder nur spärlich beschriebenen Methoden und Tricks kann man anwenden damit Ihre Datenbank wieder richtig tickt Aus diesem Blickwinkel betrachtet der Autor diverse Oracle Features Sie sind auch mit Test Cases versehen so dass der Leser selbst deren Tiefen untersuchen kann Da machs wie ich eine der besten Lehrmethoden ist sind zahlreiche Fälle im Buch präsentiert die direkt für die Praxis umsetzbar sind Die begleitende Webseite bietet Test Cases für einige Features sowie SQL und PL/SQL Skripte für Performance Tuning Troubleshooting Oracle Performance Christian Antognini, 2014-06-14 Troubleshooting Oracle Performance 2nd Edition is your systematic guide to diagnosing and resolving performance problems in database backed applications involving Oracle s database engine Christian Antognini brings a decade and a half experience to his topic His first edition is one of the most well respected books in its field This second edition has been rigorously updated to cover the latest developments in Oracle Database 11g Release 2 through Oracle Database 12c What do you do when your database application isn t running fast enough You troubleshoot of course Finding the slow part of an application is often the easy part of the battle It s finding a solution that s difficult Troubleshooting Oracle Performance 2nd Edition helps by providing a systematic approach to addressing the underlying causes of poor database application performance The author freely shares his experience while explaining the underlying foundations of how SQL statements are executed by the Oracle database engine You ll be able to draw a solid foundation of theory and shared experience as you face head on the performance challenges in your daily work Written for developers by an application developer who has learned by doing Gives a systematic approach to solving database application performance problems Helps you plan for performance as you would for any other application requirement **Oracle PL/SQL Programming**

Steven Feuerstein,Bill Pribyl,2014-01-23 Considered the best Oracle PL SQL programming guide by the Oracle community this definitive guide is precisely what you need to make the most of Oracle s powerful procedural language The sixth edition describes the features and capabilities of PL SQL up through Oracle Database 12c Release 1 Hundreds of thousands of PL SQL developers have benefited from this book over the last twenty years this edition continues that tradition With extensive code examples and a lively sense of humor this book explains language fundamentals explores advanced coding techniques and offers best practices to help you solve real world problems Get PL SQL programs up and running quickly with clear instructions for executing tracing testing debugging and managing code Understand new 12 1 features including the ACCESSIBLE_BY clause WITH FUNCTION and UDF pragma BEQUEATH CURRENT_USER for views and new conditional compilation directives Take advantage of extensive code samples from easy to follow examples to reusable packaged utilities Optimize PL SQL performance with features like the function result cache and Oracle utilities such as PL Scope and the PL SQL hierarchical profiler Build modular easy to maintain PL SQL applications using packages procedures functions and triggers

Expert Oracle Database 11g Administration Sam Alapati,2009-01-10 Sam Alapati s *Expert Oracle Database 11g Administration* is a comprehensive handbook for Oracle database administrators DBAs using the 11g release of the Oracle Database All key aspects of database administration are covered including backup and recovery day to day administration and monitoring performance tuning and more This is the one book to have on your desk as a continual reference Refer to it frequently It ll help you get the job done Comprehensive handbook for Oracle Database administrators Covers all major aspects of database administration Tests and explains in detail key DBA commands Offers primers on Linux Unix data modeling SQL and PL SQL

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