

# Oracle® Database

## SQL Tuning Guide

Figure 8-1 Direct Path Reads

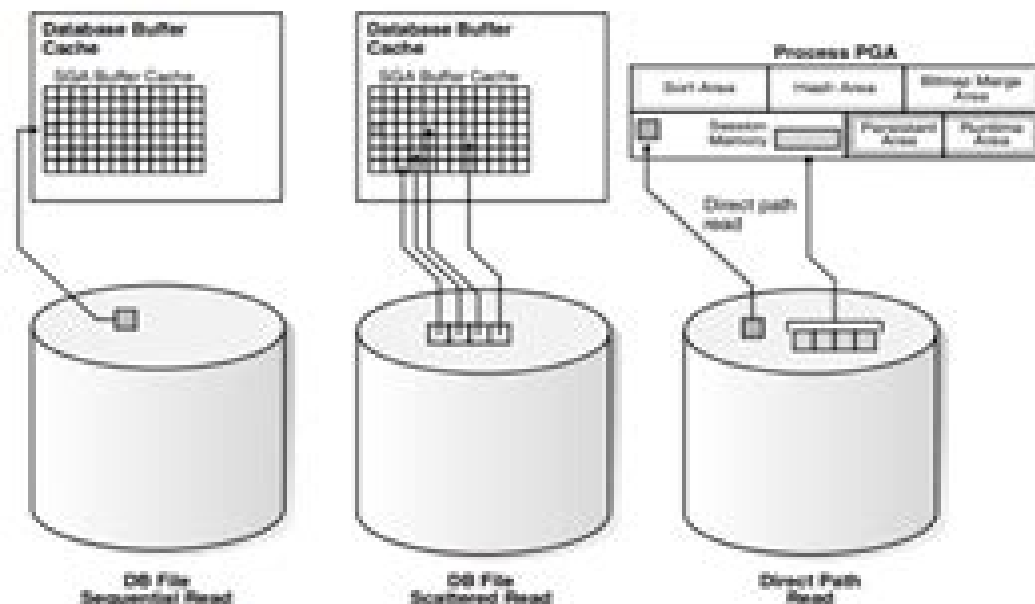
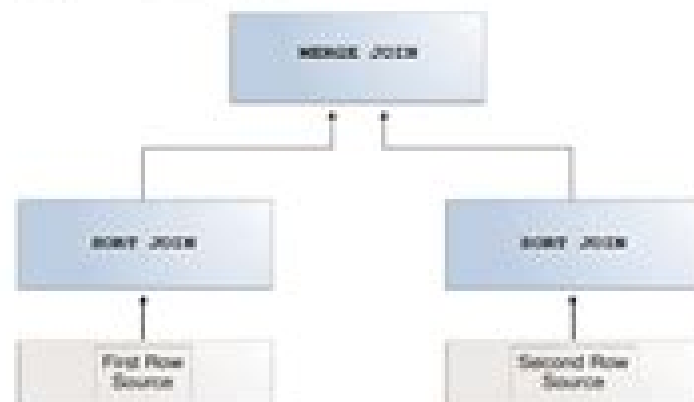


Figure 9-6 Sort Merge Join



### SQL 쿼리 최적화 기본 사항

- 누락된 인덱스 추가
- 사용하지 않는 인덱스 확인
- FILTER 술어에 여러 OR를 사용하지 않는다.
- 구의 끝에만 와일드 카드 사용
- 너무많은 JOIN은 피해라
- SELECT DISTINCT를 사용하지마라
- SELECT \* 대신 SELECT 필드 사용
- TOP을 사용하여 쿼리 결과 샘플링
- 사용량이 적은 시간에 쿼리 실행
- 쿼리 힌트 사용 최소화
- 대규모 쓰기 작업 최소화
- WHERE가 아닌 INNER JOIN으로 조인 생성

### SQL 튜닝방법론

- 적절한 인덱스를 사용하여 Block I/O를 최소화 하라
- 조인방법과 조인순서를 최적화 하라.
- Table Access(Random Access)를 최소화하라
- Sort나 Hash 작업을 최소화하라
- 한 블록은 한번만 Scan하고 끝내라
- 온라인의 조회화면이라면 페이징 처리는 필수다.

# Oracle Sql Tuning Guide

**Guy Harrison, Raymond Aron**



## Oracle Sql Tuning Guide:

*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 kl rt man die Ursache schlechter Performance und wie beseitigt man sie am effektivsten Welche Möglichkeiten bietet Oracle Welche anderen nicht oder nur sp rlich 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 F lle im Buch pr sentierte die direkt f r die Praxis umsetzbar sind Die begleitende Webseite bietet Test Cases f r einige Features sowie SQL und PLSQL Skripte f r Performance Tuning

**Pro Oracle SQL Development** Jon Heller, 2022-12-26 Write SQL statements that are more powerful simpler and faster using the advanced features of Oracle SQL This updated second edition includes the newest advanced features improved data structures such as more JSON support and more table options improved automated processes such as automatic indexing and improved SQL language extensions such as polymorphic table functions SQL macros and the multilingual engine Pro Oracle SQL Development is for anyone who already knows Oracle SQL and is ready to take their skills to the next level This book provides a clearer way of thinking about SQL by building sets and it provides practical advice for using complex features while avoiding anti patterns that lead to poor performance and wrong results Relevant theories real world best practices and style guidelines help you get the most out of Oracle SQL Many developers testers analysts and administrators use Oracle databases frequently but their queries are limited because they do not take advantage of Oracle s advanced features This book inspires you to achieve more with your Oracle SQL statements by creating your own style for writing simple yet powerful SQL It teaches you how to think about and solve performance problems in Oracle SQL and it covers enough advanced topics to put you on the path to becoming an Oracle expert What You ll Learn Solve challenging problems with declarative SQL instead of procedural languages Write SQL statements that are large and powerful but also elegant and fast Create development environments that are simple scalable and conducive to learning Visualize and understand SQL more intuitively Apply advanced syntax objects and architecture Avoid SQL anti patterns that accumulate technical debt Tune SQL statements with multiple strategies that can significantly improve performance Who This Book Is For Developers testers analysts and administrators who want to harness the full power of Oracle SQL to solve their problems as simply and as quickly as possible traditional database professionals looking for new ways of thinking about the language they have used for so long and modern full stack developers who need an explanation of how a database can be much more than simply a place to store data

**Oracle Essentials** Rick Greenwald, Robert Stackowiak, Associate Fellow Sustainable Development Programme Royal Institute of International Affairs Jonathan Stern, Jonathan Stern, 2013-09-06 Written by Oracle insiders this indispensable guide distills an

enormous amount of information about the Oracle Database into one compact volume Ideal for novice and experienced DBAs developers managers and users Oracle Essentials walks you through technologies and features in Oracle s product line including its architecture data structures networking concurrency and tuning Complete with illustrations and helpful hints this fifth edition provides a valuable one stop overview of Oracle Database 12c including an introduction to Oracle and cloud computing Oracle Essentials provides the conceptual background you need to understand how Oracle truly works Topics include A complete overview of Oracle databases and data stores and Fusion Middleware products and features Core concepts and structures in Oracle s architecture including pluggable databases Oracle objects and the various datatypes Oracle supports System and database management including Oracle Enterprise Manager 12c Security options basic auditing capabilities and options for meeting compliance needs Performance characteristics of disk memory and CPU tuning Basic principles of multiuser concurrency Oracle s online transaction processing OLTP Data warehouses Big Data and Oracle s business intelligence tools Backup and recovery and high availability and failover solutions Oracle 10g Lutz

Fröhlich,Carsten Czarski,Klaus Maier,2005 **Oracle Database 10g Performance Tuning Tips & Techniques** Richard Niemiec,2007-07-16 Offers hundreds of hints tips and tricks of the trade that can be useful to any DBA wanting to achieve maximum performance of Oracle applications No Oracle library would be complete without this book Ken Dr DBA Jacobs Vice President of Product Strategy for Server Technologies Oracle Corporation Rich is the first and last stop for Oracle Database technology and performance tuning His knowledge is a vital tool that you need to successfully negotiate the waters of Oracle database development Mike Frey Principal Architect Navteq **Easy Oracle Automation** Arun Kumar R.,2005 Explaining how to use the powerful Oracle10g automatic features for simple database administration this book has complete coverage for 10g Automatic Storage Management ASM 10g Automatic Workload Repository AWR Automatic Database Diagnostic Monitor ADDM Automatic SGA Management ASM and the SQL Tuning Advisor Demonstrated is how a non Oracle person can quickly install and configure Oracle database 10g for automatic database administration and how in less than a day a complete Oracle10g database can be ready to use Also explained is easy disk and file management with the 10g Automatic Storage Management and how the 10g Automatic Workload Repository collects important Oracle performance statistics

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 Oracle 12c Lutz Fröhlich,2014-08-01 Dieses Buch wurde auf Basis der Schwerpunkte und neuen Features der Version 12c neu strukturiert und gestaltet Es richtet sich an fortgeschrittene und erfahrene Datenbankadministratoren Systemberater und Architekten und nicht zuletzt an Entwickler von Oracle Applikationen Es ist gleichermaßen auch für Einsteiger gedacht die bereits grundlegende Kenntnisse in der IT besitzen und beginnen wollen sich in die Oracle Welt einzuarbeiten Das Buch ist Handbuch und Nachschlagewerk für alle die sich mit Planung Einsatz und Administration von Oracle Datenbanken beschäftigen Der Beiname Cloud Control weist auf den Schwerpunkt der neuen Version von Oracles Datenbank Software hin Damit folgt Oracle dem allgemeinen IT Trend und setzt die Idee des Cloud Computing im Datenbankbereich konsequent um Die Umsetzung wurde wie nicht anders zu erwarten wesentlich durch den Enterprise Manager der auch den Namen Cloud Control erhalten hat vorgenommen Konsequenterweise wurde dem Enterprise Manager 12c eine zentrale Rolle und ein ausreichender Umfang in diesem Buch zugewiesen **Oracle SQL High-performance Tuning** Guy Harrison,Raymond Aron,2001 Canada was young during the First World War and with as many as 20 000 underage soldiers leaving their homes to join the war effort the country's army was too Jim at 17 was one of them and he penned countless letters home But these weren't the writings of an ordinary boy They were the letters of a lad who left a small farming community for the city on July 15 1915 a boy who volunteered to serve with the 79th Queen's Own Cameron Highlanders Jim's letters home gloss over the horrors of war focusing instead on issues of the home front of harvesting training the horses and the price of hogs Rarely do these letters especially those to his mother and father mention the mud and rats the lice and stench of the trenches or the night duty of cutting barbed wire in no man's land For 95 years his letters remained in a shoebox decorated by his mother Jim was just 18 when he was wounded and died during the Battle of the Somme Hold the Oxo tells the story that lies between the lines of his letters filling in the historical context and helping us to understand what it was like to be Jim 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 Oracle 11g Release 2 You'll start by mastering Oracle structured performance tuning principles and tools including techniques for tracing and monitoring Oracle execution Harrison illuminates the interaction between applications and databases guides you through choosing tuning tools and introduces upfront design techniques that lead to higher performance applications He also presents a collection of downloadable scripts for reporting on all aspects of database performance Coverage includes Tuning by layers the most effective highest value approach to Oracle performance optimization Making the most of Oracle's core tools for tracing monitoring and diagnosing performance Highly efficient database logical and physical design indexing transaction design and API use SQL and PL SQL tuning including the use of parallel SQL techniques Minimizing contention for locks latches shared memory and other database resources Optimizing memory and physical disk IO Tuning Real Application Cluster RAC databases [guyharrison.net/informit.com.ph](http://guyharrison.net/informit.com.ph)

Datenbanken und SQL Edwin Schicker, 2025-07-29 Dieses Buch vermittelt fundierte Grundkenntnisse sowohl in Datenbanken als auch in SQL Eine Zusammenfassung und zahlreiche Übungsaufgaben in jedem Kapitel dienen der Vertiefung des Stoffes und verbessern den Lernerfolg deutlich Die Schwerpunkte des Buches sind relationale Datenbanken Entwurf von Datenbanken die Programmiersprache SQL und der Zugriff auf Datenbanken mittels der Sprache PHP Aber auch Themen wie Recovery Concurrency Sicherheit und Integrität werden ausführlich besprochen Ein Kapitel zu verteilten Datenbanken NoSQL und objektrelationalen Datenbanken führt in die jeweilige Thematik ein Ein eigenes Kapitel über Performance gibt wertvolle Anregungen und Tipps zum Betrieb von leistungsfähigen Datenbanken Der Autor legt sehr viel Wert auf die praktische Anwendung Mit Hilfe einer Beispieldatenbank kann das Gelernte sofort geübt werden Diese Datenbank aller vorgestellten Programme und die Lösungen zu allen Übungen werden im Internet zum Download bereitgestellt Oracle SQL High-performance Tuning Guy Harrison, Raymond Aron, 2001 Canada was young during the First World War and with as many as 20 000 underage soldiers leaving their homes to join the war effort the country's army was too Jim at 17 was one of them and he penned countless letters home But these weren't the writings of an ordinary boy They were the letters of a lad who left a small farming community for the city on July 15 1915 a boy who volunteered to serve with the 79th Queen's Own Cameron Highlanders Jim's letters home gloss over the horrors of war focusing instead on issues of the home front of harvesting training the horses and the price of hogs Rarely do these letters especially those to his mother and father mention the mud and rats the lice and stench of the trenches or the night duty of cutting barbed wire in no man's land For 95 years

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Oracle Database 12c Release 2 Performance Tuning Tips & Techniques Richard Niemiec, 2017-03-22

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Oracle SQL Tuning with Oracle SQLTXPLAIN Stelios Charalambides, 2017-04-05

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