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Presents an ideal mix of theory and practice, which allows the reader to understand the principle behind the application.; Coverage of performance tuning of datawarehouses offers readers the principles and tools they need to handle large reporting databases.; Material can also be used in a non-Oracle environment; Highly experienced author. Bert Scalzo and Dan Hotka have written the definitive, up-to-date guide to Version 12.x, Dell's powerful new release of Toad for Oracle. Packed with step-by-step recipes, detailed screen shots, and hands-on exercises, Toad for Oracle Unleashed shows both developers and DBAs how to maximize their productivity. Drawing on their unsurpassed experience running Toad in production Oracle environments, Scalzo and Hotka thoroughly cover every area of Toad's functionality. You'll find practical insights into each of Toad's most useful tools, from App Designer to Doc Generator, ER Diagrammer to Code Road Map. The authors offer proven solutions you can apply immediately to solve a wide variety of problems, from maintaining code integrity to automating performance and scalability testing. Learn how to... Install and launch Toad, connect to a database, and explore Toad's new features Customize Toad to optimize productivity in your environment Use the Editor Window to execute SQL and PL/SQL, and view, save, or convert data Browse your schema, and create and edit objects Quickly generate useful reports with FastReport and Report Manager Clarify your database's tables and data with the powerful Entity Relationship Diagrammer (ERD) and HTML documentation generator Work more efficiently with PL/SQL using code templates, snippets, and shortcuts Automate actions and applications with Automation Designer Perform key DBA tasks including database health checks, tablespace management, database and schema comparisons, and object rebuilding Identify and

optimize poorlyperforming SQL and applications ON THE WEB: Download all examples and source code presented in this book from informit.com/title/9780134131856 as it becomes available. Use this fast and complete guide to optimize the performance of MongoDB databases and the applications that depend on them. You will be able to turbo-charge the performance of your MongoDB applications to provide a better experience for your users, reduce your running costs, and avoid application growing pains. MongoDB is the world's most popular document database and the foundation for thousands of mission-critical applications. This book helps you get the best possible performance from MongoDB. MongoDB Performance Tuning takes a methodical and comprehensive approach to performance tuning that begins with application and schema design and goes on to cover optimization of code at all levels of an application. The book also explains how to configure MongoDB hardware and cluster configuration for optimal performance. The systematic approach in the book helps you treat the true causes of performance issues and get the best return on your tuning investment. Even when you're under pressure and don't know where to begin, simply follow the method in this book to set things right and get your MongoDB performance back on track.

What You Will Learn

- Apply a methodical approach to MongoDB performance tuning
- Understand how to design an efficient MongoDB application
- Optimize MongoDB document design and indexing strategies
- Tune MongoDB queries, aggregation pipelines, and transactions
- Optimize MongoDB server resources: CPU, memory, disk
- Configure MongoDB Replica sets and Sharded clusters for optimal performance

Who This Book Is For Developers and administrators of high-performance MongoDB applications who want to be sure they are getting the best possible performance from their MongoDB system. For developers who wish to create applications that are fast, scalable, and cost-effective. For administrators who want to optimize their MongoDB server and hardware configuration. A comprehensive guide to performance design planning for client-network-server systems using Oracle, this book contains some dynamite applications design tips that can reduce network and server traffic dramatically. The CD-ROM contains various tuning and performance measurement utilities provided by the author and third-party developers. If you're a SQL Server DBA who wants to get proactive and organized with performance monitoring and tuning, then this book is for you. Written by a widely read DBA and SQL Server internals expert, Robin Schumacher offers real-world advice, an easy to follow performance strategy, and lots of SQL diagnostics scripts in a superb book that shows how to quickly diagnose and optimize SQL Server performance problems. Robin Schumacher has written the internals for some of the world's most powerful SQL Server performance software, and now he shows you how to make your database servers run as fast as possible. Get well-versed with ready-to-use techniques for creating high-performance queries and applications.

Key Features

- Speed up queries and dramatically improve application performance by both understanding query engine internals and practical query optimization
- Understand how the query optimizer works
- Learn about intelligent query processing and what is new in SQL Server 2022

Book Description SQL Server is a relational database management system developed by Microsoft. As a database server, it is a software product with the primary function of storing and retrieving data as requested by other software applications. This book starts by describing the inner workings of the query optimizer, and will enable you to use this knowledge to write better queries and provide the query engine with all the information it needs to produce efficient execution plans. As you progress, you'll get practical query optimization tips for troubleshooting underperforming queries. The book will also guide you through intelligent query processing and what is new in SQL Server 2022. Query performance topics such as the Query Store, In-Memory OLTP and columnstore indexes are covered as well. By the end of this book, you'll be able to get the best possible performance for your queries and applications.

What you will learn

- Troubleshoot queries using methods including extended events, SQL Trace, and dynamic management views
- Understand how the execution engine and query operators work
- Speed up queries and improve app performance by creating the right indexes
- Detect and fix cardinality estimation errors by examining query optimizer statistics
- Monitor and promote both plan caching and plan reuse to improve app performance
- Troubleshoot and improve query performance by using the Query Store
- Improve the performance of data warehouse queries by using columnstore indexes
- Handle query processor limitations with hints and other methods

Who this book is for This book is for SQL Server developers who are struggling with slow query execution, database administrators who are tasked with troubleshooting slow application performance, and database architects who design SQL Server databases in support of line-of-business and data warehousing applications. A very practical guide to making databases run faster and better. A poorly performing database application can cost each user time, and have an impact on other applications running on the same computer or the same network. This book will help DBAs and programmers improve the performance of their databases. How can you help your Drupal website continue to perform at the highest level as it grows to meet demand? This comprehensive guide provides best practices, examples, and in-depth explanations for solving several performance and scalability issues. You'll learn how to apply coding and infrastructure techniques to Drupal internals, application performance, databases, web servers, and performance analysis. Covering Drupal versions 7 and 8, this book is the ideal reference for everything from site deployment to implementing specific technologies such as Varnish, memcache, or Solr. If you have a basic understanding of Drupal and the Linux-Apache-MySQL-PHP (LAMP) stack, you're ready to get started. Establish a performance baseline and define goals for improvement

- Optimize your website's code and front-end performance
- Get best and worst practices for customizing Drupal core functionality
- Apply infrastructure design techniques to launch or expand a site
- Use tools to configure, monitor, and optimize MySQL performance
- Employ alternative storage and backend search options as your site grows
- Tune your web servers through httpd and PHP configuration
- Monitor services and perform load tests to catch problems before they become critical

Database tuning is the activity of making a database application run more quickly. Tuning is difficult because it requires global knowledge of an information system, from the hardware to the operating system to the query language to the application. This is the first book to deal with tuning object-oriented database systems in a serious way. Aiming to impart a broad knowledge of applications and of computer systems, the book's practical advice helps to decide whether to change the way to construct applications, the parameters of database systems, the configuration of operating systems, the resources that hardware offers, or perhaps even replace entire components to boost a database performance. A poorly performing database application not only costs users time, but also has an impact on other applications running on the same computer or the same network. SQL Tuning provides an essential next step for SQL developers and database administrators who want to extend their SQL tuning expertise and get the most from their database applications. There are two basic issues to focus on when tuning SQL: how to find and interpret the execution plan of an SQL statement and how to change SQL to get a specific alternate execution plan. SQL Tuning provides answers to these questions and addresses a third issue that's even more important: how to find the optimal execution plan for the query to use. Author Dan Tow outlines a timesaving method he's developed for finding the optimum execution plan--rapidly and systematically--regardless of the complexity of the SQL or the database platform being used. You'll learn how to understand and control SQL execution plans and how to diagram SQL queries to deduce the best execution plan for a query. Key chapters in the book include exercises to reinforce the concepts you've learned. SQL Tuning concludes by addressing special concerns and unique solutions to "unsolvable problems."

Whether you are a programmer who develops SQL-based applications or a database administrator or other who troubleshoots poorly tuned applications, SQL Tuning will arm you with a reliable and deterministic method for tuning your SQL queries to gain optimal performance. Write optimized queries. This book helps you write queries that perform fast and deliver results on time. You will learn that query optimization is not a dark art practiced by a small, secretive cabal of sorcerers. Any motivated professional can learn to write efficient queries from the get-go and capably optimize existing queries. You will learn to look at the process of writing a query from the database engine's point of view, and know how to think like the database optimizer. The book begins with a discussion of what a performant system is and progresses to measuring performance and setting performance goals. It introduces different classes of queries and optimization techniques suitable to each, such as the use of indexes and specific join algorithms. You will learn to read and understand query execution plans along with techniques for influencing those plans for better performance. The book also covers advanced topics such as the use of functions and procedures, dynamic SQL, and generated queries. All of these techniques are then used together to produce performant applications, avoiding the pitfalls of object-relational mappers.

What You Will Learn

- Identify optimization goals in OLTP and OLAP systems
- Read and understand PostgreSQL execution plans
- Distinguish between short queries and long queries
- Choose the right optimization technique for each query type
- Identify indexes that will improve query performance
- Optimize full table scans
- Avoid the pitfalls of object-relational mapping systems
- Optimize the entire application rather

than just database queries Who This Book Is For IT professionals working in PostgreSQL who want to develop performant and scalable applications, anyone whose job title contains the words “database developer” or “database administrator” or who is a backend developer charged with programming database calls, and system architects involved in the overall design of application systems running against a PostgreSQL database

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 SQL and PL/SQL Query Tuning and Optimization Tips and Tricks You don't have to accept slow Ruby or Rails performance. In this comprehensive guide to Ruby optimization, you'll learn how to write faster Ruby code--but that's just the beginning. See exactly what makes Ruby and Rails code slow, and how to fix it. Alex Dymo will guide you through perils of memory and CPU optimization, profiling, measuring, performance testing, garbage collection, and tuning. You'll find that all those "hard" things aren't so difficult after all, and your code will run orders of magnitude faster. This is the first book ever that consolidates all the Ruby performance optimization advice in one place. It's your comprehensive guide to memory optimization, CPU optimization, garbage collector tuning, profiling, measurements, performance testing, and more. You'll go from performance rookie to expert. First, you'll learn the best practices for writing Ruby code that's easy not only on the CPU, but also on memory, and that doesn't trigger the dreaded garbage collector. You'll find out that garbage collection accounts for 80% of slowdowns, and often takes more than 50% of your program's execution time. And you'll discover the bottlenecks in Rails code and learn how selective attribute loading and preloading can mitigate the performance costs of ActiveRecord. As you advance to Ruby performance expert, you'll learn how to profile your code, how to make sense out of profiler reports, and how to make optimization decisions based on them. You'll make sure slow code doesn't creep back into your Ruby application by writing performance tests, and you'll learn the right way to benchmark Ruby. And finally, you'll dive into the Ruby interpreter internals to really understand why garbage collection makes Ruby so slow, and how you can tune it up. What You Need: Some version of Ruby. The advice from this book applies to all modern Ruby versions from 1.9 to 2.2. 80% of the material will also be useful for legacy Ruby 1.8 users, and there is 1.8-specific advice as well. T-SQL insiders help you tackle your toughest queries and query-tuning problems Squeeze maximum performance and efficiency from every T-SQL query you write or tune. Four leading experts take an in-depth look at T-SQL's internal architecture and offer advanced practical techniques for optimizing response time and resource usage. Emphasizing a correct understanding of the language and its foundations, the authors present unique solutions they have spent years developing and refining. All code and techniques are fully updated to reflect new T-SQL enhancements in Microsoft SQL Server 2014 and SQL Server 2012. Write faster, more efficient T-SQL code: Move from procedural programming to the language of sets and logic Master an efficient top-down tuning methodology Assess algorithmic complexity to predict performance Compare data aggregation techniques, including new grouping sets Efficiently perform data-analysis calculations Make the most of T-SQL's optimized bulk import tools Avoid date/time pitfalls that lead to buggy, poorly performing code Create optimized BI statistical queries without additional software Use programmable objects to accelerate queries Unlock major performance improvements with In-Memory OLTP Master useful and elegant approaches to manipulating graphs About This Book For experienced T-SQL practitioners Includes coverage updated from Inside Microsoft SQL Server 2008 T-SQL Querying and Inside Microsoft SQL Server 2008 T-SQL Programming Valuable to developers, DBAs, BI professionals, and data scientists Covers many MCSE 70-464 and MCSA/MCSE 70-461 exam topics 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 Identify and fix causes of poor performance. You will learn Query Store, adaptive execution plans, and automated tuning on the Microsoft Azure SQL Database platform. Anyone responsible for writing or creating T-SQL queries will find valuable the insight into bottlenecks, including how to recognize them and eliminate them. This book covers the latest in performance optimization features and techniques and is current with SQL Server 2017. If your queries are not running fast enough and you're tired of phone calls from frustrated users, then this book is the answer to your performance problems. SQL Server 2017 Query Performance Tuning is about more than quick tips and fixes. You'll learn to be proactive in establishing performance baselines using tools such as Performance Monitor and Extended Events. You'll recognize bottlenecks and defuse them before the phone rings. You'll learn some quick solutions too, but emphasis is on designing for performance and getting it right. The goal is to head off trouble before it occurs. What You'll Learn Use Query Store to understand and easily change query performance Recognize and eliminate bottlenecks leading to slow performance Deploy quick fixes when needed, following up with long-term solutions Implement best practices in T-SQL to minimize performance risk Design in the performance that you need through careful query and index design Utilize the latest performance optimization features in SQL Server 2017 Protect query performance during upgrades to the newer versions of SQL Server Who This Book Is For Developers and database administrators with responsibility for application performance in SQL Server environments. Anyone responsible for writing or creating T-SQL queries will find valuable the insight into bottlenecks, including how to recognize them and eliminate them. * A completely revised edition of a book that is highly-regarded in the community (as evidenced by Amazon reviews and other customer feedback). * The only comprehensive,

practical guide to performance optimization techniques for SQL Server applications. * Essential reading for any DBA or developer responsible for the performance of an existing SQL Server system, or the design of a new one. Design and configure SQL Server instances and databases in support of high-throughput applications that are mission-critical and provide consistent response times in the face of variations in user numbers and query volumes. Learn to configure SQL Server and design your databases to support a given instance and workload. You'll learn advanced configuration options, in-memory technologies, storage and disk configuration, and more, all toward enabling your desired application performance and throughput. Configuration doesn't stop with implementation. Workloads change over time, and other impediments can arise to thwart desired performance. High Performance SQL Server covers monitoring and troubleshooting to aid in detecting and fixing production performance problems and minimizing application outages. You'll learn a variety of tools, ranging from the traditional wait analysis methodology to the new query store, and you'll learn how improving performance is really an iterative process. High Performance SQL Server is based on SQL Server 2016, although most of its content can be applied to prior versions of the product. This book is an excellent complement to performance tuning books focusing on SQL queries, and provides the other half of what you need to know by focusing on configuring the instances on which mission-critical queries are executed. Covers SQL Server instance-configuration for optimal performance Helps in implementing SQL Server in-memory technologies Provides guidance toward monitoring and ongoing diagnostics What You Will Learn Understand SQL Server's database engine and how it processes queries Configure instances in support of high-throughput applications Provide consistent response times to varying user numbers and query volumes Design databases for high-throughput applications with focus on performance Record performance baselines and monitor SQL Server instances against them Troubleshoot and fix performance problems Who This Book Is For SQL Server database administrators, developers, and data architects. The book is also of use to system administrators who are managing and are responsible for the physical servers on which SQL Server instances are run. This text offers a detailed look at Sybase SQL Server Performance Tuning and a sneak peek at Sybase System 11 performance features. It compares and contrasts all recent major releases of Sybase SQL Server Get peak performance from your Windows 2000 enterprise network--and run Windows faster, more reliably, and more efficiently with help from this hands-on resource. You'll get an in-depth analysis of optimizing Windows 2000 subsystems, replication, hardware--and much more. Plus, learn to master IIS, Terminal Services, Active Directory and performance-tuning tools. Get well-versed with ready-to-use techniques for creating high-performance queries and applications Key Features: Speed up queries and dramatically improve application performance by both understanding query engine internals and practical query optimization Understand how the query optimizer works Learn about intelligent query processing and what is new in SQL Server 2022 Book Description: SQL Server is a relational database management system developed by Microsoft. As a database server, it is a software product with the primary function of storing and retrieving data as requested by other software applications. This book starts by describing the inner workings of the query optimizer, and will enable you to use this knowledge to write better queries and provide the query engine with all the information it needs to produce efficient execution plans. As you progress, you'll get practical query optimization tips for troubleshooting underperforming queries. The book will also guide you through intelligent query processing and what is new in SQL Server 2022. Query performance topics such as the Query Store, In-Memory OLTP and columnstore indexes are covered as well. By the end of this book, you'll be able to get the best possible performance for your queries and applications. What You Will Learn: Troubleshoot queries using methods including extended events, SQL Trace, and dynamic management views Understand how the execution engine and query operators work Speed up queries and improve app performance by creating the right indexes Detect and fix cardinality estimation errors by examining query optimizer statistics Monitor and promote both plan caching and plan reuse to improve app performance Troubleshoot and improve query performance by using the Query Store Improve the performance of data warehouse queries by using columnstore indexes Handle query processor limitations with hints and other methods Who this book is for: This book is for SQL Server developers who are struggling with slow query execution, database administrators who are tasked with troubleshooting slow application performance, and database architects who design SQL Server databases in support of line-of-business and data warehousing applications. Queries not running fast enough? Wondering about the in-memory database features in 2014? Tired of phone calls from frustrated users? Grant Fritchey's book SQL Server Query Performance Tuning is the answer to your SQL Server query performance problems. The book is revised to cover the very latest in performance optimization features and techniques, especially including the newly-added, in-memory database features formerly known under the code name Project Hekaton. This book provides the tools you need to approach your queries with performance in mind. SQL Server Query Performance Tuning leads you through understanding the causes of poor performance, how to identify them, and how to fix them. You'll learn to be proactive in establishing performance baselines using tools like Performance Monitor and Extended Events. You'll learn to recognize bottlenecks and defuse them before the phone rings. You'll learn some quick solutions too, but emphasis is on designing for performance and getting it right, and upon heading off trouble before it occurs. Delight your users. Silence that ringing phone. Put the principles and lessons from SQL Server Query Performance Tuning into practice today. Covers the in-memory features from Project Hekaton Helps establish performance baselines and monitor against them Guides in troubleshooting and eliminating of bottlenecks that frustrate users 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 queries 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 Publisher's Note: Products purchased from Third Party sellers are not guaranteed by the publisher for quality, authenticity, or access to any online entitlements included with the product. Optimize Microsoft SQL Server 2014 queries and applications Microsoft SQL Server 2014 Query Tuning & Optimization is filled with ready-to-use techniques for creating high-performance queries and applications. The book describes the inner workings of the query processor so you can write better queries and provide the query processor with the quality information it needs to produce efficient execution plans. You'll also get tips for troubleshooting underperforming queries. In-Memory OLTP (Hekaton), a key new feature of SQL Server 2014, is fully covered in this practical guide. Understand how the query optimizer works Troubleshoot queries using extended events, SQL trace, dynamic management views (DMVs), the data collector, and other tools Work with query operators for data access, joins, aggregations, parallelism, and updates Speed up queries and dramatically improve application performance by creating the right indexes Understand statistics and how to detect and fix cardinality estimation errors Maximize OLTP query performance using In-Memory OLTP (Hekaton) features, including memory-optimized tables and natively compiled stored procedures Monitor and promote plan caching and reuse to improve application performance Improve the performance of data warehouse queries using columnstore indexes Handle query processor limitations with hints and other methods Troubleshoot query performance issues, identify anti-patterns in code, and write efficient T-SQL queries Key Features Discover T-SQL functionalities and services that help you interact with relational databases Understand the roles, tasks and responsibilities of a T-SQL developer Explore solutions for carrying out database querying tasks, database administration, and troubleshooting Book Description Transact-SQL (T-SQL) is Microsoft's proprietary extension to the SQL language that is used with Microsoft SQL Server and Azure SQL Database. This book will be a useful guide to learning the art of writing efficient T-SQL code in modern SQL Server versions, as well as the Azure SQL Database. The book will get you started with query processing fundamentals to help you write powerful, performant T-SQL queries. You will then focus on query execution plans and learn how to leverage them for troubleshooting. In the later chapters, you will learn how to identify various T-SQL patterns and anti-patterns. This will help you analyze execution plans to gain insights into current performance, and determine whether or not a query is

scalable. You will also learn to build diagnostic queries using dynamic management views (DMVs) and dynamic management functions (DMFs) to address various challenges in T-SQL execution. Next, you will study how to leverage the built-in tools of SQL Server to shorten the time taken to address query performance and scalability issues. In the concluding chapters, the book will guide you through implementing various features, such as Extended Events, Query Store, and Query Tuning Assistant using hands-on examples. By the end of this book, you will have the skills to determine query performance bottlenecks, avoid pitfalls, and discover the anti-patterns in use. Foreword by Conor Cunningham, Partner Architect – SQL Server and Azure SQL – Microsoft

What you will learn

- Use Query Store to understand and easily change query performance
- Recognize and eliminate bottlenecks that lead to slow performance
- Deploy quick fixes and long-term solutions to improve query performance
- Implement best practices to minimize performance risk using T-SQL
- Achieve optimal performance by ensuring careful query and index design
- Use the latest performance optimization features in SQL Server 2017 and SQL Server 2019
- Protect query performance during upgrades to newer versions of SQL Server

Who this book is for This book is for database administrators, database developers, data analysts, data scientists, and T-SQL practitioners who want to get started with writing T-SQL code and troubleshooting query performance issues, through the help of practical examples. Previous knowledge of T-SQL querying is not required to get started on this book. The SQL Server Query Optimizer is perceived by many to be a magic black box, transforming SQL queries into high performance execution plans in the blink of an eye through some unknowable process. The truth is that, while the Query Optimizer is indeed the highly-complex result of decades of research, learning how it works its magic is not only possible, but immensely useful to DBAs and Developers alike. A better understanding of what the Query Optimizer does behind the scenes can help you to improve the performance of your databases and applications, and this book explains the core concepts behind how the SQL Server Query Optimizer works. With this knowledge, you'll be able to write superior queries, provide the Query Optimizer with all the information it needs to produce efficient execution plans, and troubleshoot the cases when the Query Optimizer is not giving you the best plan possible. With over 15 years of experience in the use of Relational Databases (including SQL Server since version 6.5), Benjamin has watched the SQL Server Query Optimizer grow and evolve. His insight will leave you with an excellent foundation in the practicalities of the Query Optimizer, and everything you need to know to start tuning your queries to perfection. Identify, analyze, and improve poorly performing queries that damage user experience and lead to lost revenue for your business. This book will help you make query tuning an integral part of your daily routine through a multi-step process that includes monitoring of execution times, identifying candidate queries for optimization, analyzing their current performance, and improving them to deliver results faster and with less overhead. Author Jesper Krogh systematically discusses each of these steps along with the data sources and the tools used to perform them.

MySQL 8 Query Performance Tuning aims to help you improve query performance using a wide range of strategies. You will know how to analyze queries using both the traditional EXPLAIN command as well as the new EXPLAIN ANALYZE tool. You also will see how to use the Visual Explain feature to provide a visually-oriented view of an execution plan. Coverage of indexes includes indexing strategies and index statistics, and you will learn how histograms can be used to provide input on skewed data distributions that the optimizer can use to improve query performance. You will learn about locks, and how to investigate locking issues. And you will come away with an understanding of how the MySQL optimizer works, including the new hash join algorithm, and how to change the optimizer's behavior when needed to deliver faster execution times. You will gain the tools and skills needed to delight application users and to squeeze the most value from corporate computing resources.

What You Will Learn

- Monitor query performance to identify poor performers
- Choose queries to optimize that will provide the greatest gain
- Analyze queries using tools such as EXPLAIN ANALYZE and Visual Explain
- Improve slow queries through a wide range of strategies
- Properly deploy indexes and histograms to aid in creating fast execution plans
- Understand and analyze locks to resolve contention and increase throughput

Who This Book Is For Database administrators and SQL developers who are familiar with MySQL and need to participate in query tuning. While some experience with MySQL is required, no prior knowledge of query performance tuning is needed.

How can you bring out MySQL's full power? With **High Performance MySQL**, you'll learn advanced techniques for everything from designing schemas, indexes, and queries to tuning your MySQL server, operating system, and hardware to their fullest potential. This guide also teaches you safe and practical ways to scale applications through replication, load balancing, high availability, and failover. Updated to reflect recent advances in MySQL and InnoDB performance, features, and tools, this third edition not only offers specific examples of how MySQL works, it also teaches you why this system works.

Effectively query and modify data using Transact-SQL Master T-SQL fundamentals and write robust code for Microsoft SQL Server and Azure SQL Database. Itzik Ben-Gan explains key T-SQL concepts and helps you apply your knowledge with hands-on exercises. The book first introduces T-SQL's roots and underlying logic. Next, it walks you through core topics such as single-table queries, joins, subqueries, table expressions, and set operators. Then the book covers more-advanced data-query topics such as window functions, pivoting, and grouping sets. The book also explains how to modify data, work with temporal tables, and handle transactions, and provides an overview of programmable objects.

Microsoft Data Platform MVP Itzik Ben-Gan shows you how to:

- Review core SQL concepts and its mathematical roots
- Create tables and enforce data integrity
- Perform effective single-table queries by using the SELECT statement
- Query multiple tables by using joins, subqueries, table expressions, and set operators
- Use advanced query techniques such as window functions, pivoting, and grouping sets
- Insert, update, delete, and merge data
- Use transactions in a concurrent environment
- Get started with programmable objects—from variables and batches to user-defined functions, stored procedures, triggers, and dynamic SQL

High Performance MySQL is the definitive guide to building fast, reliable systems with MySQL. Written by noted experts with years of real-world experience building very large systems, this book covers every aspect of MySQL performance in detail, and focuses on robustness, security, and data integrity. **High Performance MySQL** teaches you advanced techniques in depth so you can bring out MySQL's full power. Learn how to design schemas, indexes, queries and advanced MySQL features for maximum performance, and get detailed guidance for tuning your MySQL server, operating system, and hardware to their fullest potential. You'll also learn practical, safe, high-performance ways to scale your applications with replication, load balancing, high availability, and failover. This second edition is completely revised and greatly expanded, with deeper coverage in all areas. Major additions include:

- Emphasis throughout on both performance and reliability
- Thorough coverage of storage engines, including in-depth tuning and optimizations for the InnoDB storage engine
- Effects of new features in MySQL 5.0 and 5.1, including stored procedures, partitioned databases, triggers, and views
- A detailed discussion on how to build very large, highly scalable systems with MySQL
- New options for backups and replication
- Optimization of advanced querying features, such as full-text searches
- Four new appendices

The book also includes chapters on benchmarking, profiling, backups, security, and tools and techniques to help you measure, monitor, and manage your MySQL installations. Provides information on the tuning and optimization features of SQL server 2005, covering such topics as query execution, plan caching, and concurrency problems. This IBM® Redbooks® publication focuses on gathering the correct technical information, and laying out simple guidance for optimizing code performance on IBM POWER8® processor-based systems that run the IBM AIX®, IBM i, or Linux operating systems. There is straightforward performance optimization that can be performed with a minimum of effort and without extensive previous experience or in-depth knowledge. The POWER8 processor contains many new and important performance features, such as support for eight hardware threads in each core and support for transactional memory. The POWER8 processor is a strict superset of the IBM POWER7+™ processor, and so all of the performance features of the POWER7+ processor, such as multiple page sizes, also appear in the POWER8 processor. Much of the technical information and guidance for optimizing performance on POWER8 processors that is presented in this guide also applies to POWER7+ and earlier processors, except where the guide explicitly indicates that a feature is new in the POWER8 processor. This guide strives to focus on optimizations that tend to be positive across a broad set of IBM POWER® processor chips and systems. Specific guidance is given for the POWER8 processor; however, the general guidance is applicable to the IBM POWER7+, IBM POWER7®, IBM POWER6®, IBM POWER5, and even to earlier processors. This guide is directed at personnel who are responsible for performing migration and implementation activities on POWER8 processor-based systems. This includes system administrators, system architects, network administrators, information architects, and database administrators (DBAs). Gain an in depth view of optimizing the performance of BizTalk Server. This book provides best practices and techniques for improving development of high mission critical solutions.

You'll see how the BizTalk Server engine works and how to proactively detect and remedy potential bottlenecks before they occur. The book starts with an overview of the BizTalk Server internal mechanisms that will help you understand the optimizations detailed throughout the book. You'll then see how the mechanisms can be applied to a BizTalk Server environment to improve low and high latency throughput scenarios. A section on testing BizTalk server solutions will guide you through the most frequently adopted techniques used to develop solutions such as performance and unit testing as part of the development cycle. With BizTalk Server 2016 you'll see how to apply side-by-side versioning to your solutions to reduce the chances of downtime, You'll also review instrumentation techniques using Event Traces for windows and business activity monitoring (BAM). While the book is focused on the latest version of BizTalk Server, most of the topics discussed will also work with BizTalk Server 2013R2. What You'll Learn Review BizTalk Server internals and how the message engine works Understand BizTalk Server architecture Gather and analyze BizTalk Server performance data Develop BizTalk Server performance solutions Use advanced troubleshooting tools to help diagnose your platform Who This Book Is For Those who have strong BizTalk and .NET Framework knowledge and want to get their BizTalk Server knowledge to the next level Identify, analyze, and improve poorly performing queries that damage user experience and lead to lost revenue for your business. This book will help you make query tuning an integral part of your daily routine through a multi-step process that includes monitoring of execution times, identifying candidate queries for optimization, analyzing their current performance, and improving them to deliver results faster and with less overhead. Author Jesper Krogh systematically discusses each of these steps along with the data sources and the tools used to perform them. MySQL 8 Query Performance Tuning aims to help you improve query performance using a wide range of strategies. You will know how to analyze queries using both the traditional EXPLAIN command as well as the new EXPLAIN ANALYZE tool. You also will see how to use the Visual Explain feature to provide a visually-oriented view of an execution plan. 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What You Will Learn Monitor query performance to identify poor performers Choose queries to optimize that will provide the greatest gain Analyze queries using tools such as EXPLAIN ANALYZE and Visual Explain Improve slow queries through a wide range of strategies Properly deploy indexes and histograms to aid in creating fast execution plans Understand and analyze locks to resolve contention and increase throughput Who This Book Is For Database administrators and SQL developers who are familiar with MySQL and need to participate in query tuning. While some experience with MySQL is required, no prior knowledge of query performance tuning is needed. The authors make performance issues the central topic, with very in-depth discussion and examples. Database professionals will find that this new edition aids in mastering the latest version of Microsoft's SQL Server. Developers and database administrators (DBAs) use SQL on a daily basis in application development and the subsequent problem solving and fine tuning. Answers to SQL issues can be quickly located helping the DBA or developer optimize and tune a database to maximum efficiency. Basic questions are easily located on the topics of filtering, sorting, operators, conditionals, pseudo columns, single row functions, joins, grouping functions, sub queries, composite queries, hierarchies, flashback queries, parallel queries, expressions and regular expressions. Assistance on DML, data types (including collections), XML, DDL for basic database objects such as tables, views and indexes, partitioning, and security is also considered. * Identifies and discusses the most common issues database administrators (DBAs) face day-to-day * Provides DBAs with solutions actually used by the authors in enterprise environments * Explores new features which add more control but reduce performance Optimize Microsoft SQL Server 2014 queries and applications Microsoft SQL Server 2014 Query Tuning & Optimization is filled with ready-to-use techniques for creating high-performance queries and applications. The book describes the inner workings of the query processor so you can write better queries and provide the query processor with the quality information it needs to produce efficient execution plans. You'll also get tips for troubleshooting underperforming queries. In-Memory OLTP (Hekaton), a key new feature of SQL Server 2014, is fully covered in this practical guide. Understand how the query optimizer works Troubleshoot queries using extended events, SQL trace, dynamic management views (DMVs), the data collector, and other tools Work with query operators for data access, joins, aggregations, parallelism, and updates Speed up queries and dramatically improve application performance by creating the right indexes Understand statistics and how to detect and fix cardinality estimation errors Maximize OLTP query performance using In-Memory OLTP (Hekaton) features, including memory-optimized tables and natively compiled stored procedures Monitor and promote plan caching and reuse to improve application performance Improve the performance of data warehouse queries using columnstore indexes Handle query processor limitations with hints and other methods

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