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Autore	Bach Martin
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Nota di contenuto	Contents at a Glance; Contents; About the Authors; Acknowledgments; Introduction; Chapter 1: What Is Exadata?; An Overview of Exadata; History of Exadata; Alternative Views of What Exadata Is; Data Warehouse Appliance; OLTP Machine; Consolidation Platform; Configuration Options; Exadata Database Machine X5-2 ; Exadata Database Machine X4-8 ; Exadata Storage Expansion Rack X5- 2 ; Upgrades; Hardware Components; Operating Systems; Database Servers; Storage Servers; InfiniBand; Flash Cache; Disks; Bits and Pieces; Software Components; Database Server Software Storage Server Software Software Architecture; Summary; Chapter 2: Offloading / Smart Scan; Why Offloading Is Important; What Offloading Includes; Column Projection; Predicate Filtering; Storage Indexes and Zone Maps; Simple Joins (Bloom Filters); Function Offloading; Compression/Decompression; Encryption/Decryption; Virtual Columns; Support for LOB offloading; JSON Support and Offloading; Data Mining Model Scoring; Non-Smart Scan Offloading; Smart/Fast File Creation; RMAN Incremental Backups; RMAN Restores; Smart Scan Prerequisites; Full Scans; Direct Path Reads Exadata Storage Smart Scan Disablers; Simply Unavailable; Reverting

to Block Shipping; Skipping Some Offloading; Skipping Offloading silently; How to Verify That Smart Scan Is Happening; 10046 Trace; Session Performance Statistics; Offload Eligible Bytes; SQL Monitoring; Parameters; Summary; Chapter 3: Hybrid Columnar Compression; Oracle Storage Review; Disassembling the Oracle Block; Compression Mechanics; BASIC Compression; OLTP Compression; Hybrid Columnar Compression; What Does the "Hybrid" in "Hybrid Columnar Compression" Mean?; Making Use of Hybrid Columnar Compression HCC Internals What Happens When You Create a HCC Compressed Table?; HCC Performance; Load Performance ; Query Performance ; DML Performance ; Expected Compression Ratios; Compression Advisor; Real-World Examples; Custom Application Data; Telecom Call Detail Data; Financial Data; Retail Sales Data; Summary of the Real-World Examples; Restrictions/Challenges; Moving Data to a Non-Exadata Platform; Disabling Serial Direct Path Reads; Locking Issues; Single Row Access; Common Usage Scenarios; Automatic Data Optimization; What Is Data Lifecycle Management?; Compression Automatic Data Optimization vs. Manual Lifecycle Management Example Use Cases for ADO; Enable ILM for Storage Tiering ; Enable ILM for Compression ; Summary; Chapter 4: Storage Indexes; Structure ; Monitoring Storage Indexes; Database Statistics; Tracing ; Monitoring Wrap-Up; Controlling Storage Indexes; `_kcfis_storageidx_disabled` ; `_kcfis_storageidx_diag_mode` ; `_cell_storidx_mode` ; `_cell_storidx_minmax_enabled` ; Storage Software Parameters ; Behavior; Performance; Special Optimization for Nulls; Physical Distribution of Values ; Potential Issues; Incorrect Results Moving Target

Sommario/riassunto

Expert Oracle Exadata, 2nd Edition opens up the internals of Oracle's Exadata platform so that you can fully benefit from the most performant and scalable database hardware appliance capable of running Oracle Database. This edition is fully-updated to cover Exadata 5-2 and Oracle Database 12c. If you're new to Exadata, you'll soon learn that it embodies a change in how you think about and manage relational databases. A key part of that change lies in the concept of offloading SQL processing to the storage layer. In addition there is Oracle's engineering effort in creating a powerful platform for both consolidation and transaction processing. The resulting value proposition in the form of Exadata has truly been a game-changer. Expert Oracle Exadata, 2nd Edition provides a look at the internals and how the combination of hardware and software that comprise Exadata actually work. Authors include Martin Bach, Andy Colvin, and Frits Hoogland, with contributions from Karl Arao, and built on the foundation laid by Kerry Osborne, Randy Johnson, and Tanel Poder in the first edition. They share their real-world experience gained through a great many Exadata implementations, possibly more than any other group of experts today. Always their goal is toward helping you advance your career through success with Exadata in your own environment. This book is intended for readers who want to understand what makes the platform tick and for whom—"how" it does what it is does is as important as what it does. By being exposed to the features that are unique to Exadata, you will gain an understanding of the mechanics that will allow you to fully benefit from the advantages that the platform provides. This book changes how you think about managing SQL performance and processing. It provides a roadmap to successful Exadata implementation. And it removes the "black box" mystique. You'll learn how Exadata actually works and be better able to manage your Exadata engineered systems in support of your business.
