Oracle Database 21c v21.3 for Win & Linux

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Oracle Database, often called Oracle DBMS, is one of the most renowned and widely used relational database management systems globally. Developed by Oracle Corporation, this sophisticated database system is celebrated for its robustness, scalability, and comprehensive features. Oracle Database is designed to handle large volumes of data and support critical business applications, making it an indispensable asset for enterprises across various industries.

At the heart of **Oracle Database**'s strength is its robust architecture, which ensures high performance and reliability. The system employs a multi-version concurrency control (MVCC) mechanism, allowing multiple transactions to co-occur without compromising data integrity. Oracle's use of a sophisticated optimizer aids in efficient query execution, enabling users to retrieve information from the database quickly and accurately. The database's support for various indexing and partitioning techniques further contributes to its efficiency in managing vast datasets.

Scalability is a crucial hallmark of Oracle Database, making it suitable for businesses of all sizes and complexities. The system can seamlessly scale vertically and horizontally, accommodating an increasing volume of data and user load. Oracle's Real Application Clusters (RAC) technology enables the deployment of a clustered database, distributing workload across multiple servers for enhanced performance and fault tolerance. This scalability ensures that Oracle Database remains a reliable choice for organizations experiencing dynamic growth and evolving data management needs.

Oracle Database is renowned for its comprehensive features beyond traditional data storage and retrieval. The system supports advanced analytics, data warehousing, and in-memory processing, allowing organizations to derive valuable insights from their data. Oracle's support for various data types, including spatial and multimedia data, makes it versatile for diverse use cases. Additionally, including features such as automatic storage management (ASM) and comprehensive security controls underscores Oracle Database's commitment to providing a holistic and secure data management solution.

Security is paramount in data management, and addresses this with robust security features. The system implements

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sophisticated authentication and authorization mechanisms, ensuring only authorized users access sensitive data. Oracle Advanced Security offers transparent data encryption, securing data at rest and in transit. With auditing and monitoring capabilities, the Oracle Database enables organizations to track and manage user activities, helping meet regulatory compliance requirements and ensuring the integrity of critical business data.

In conclusion, Oracle Database is a powerhouse in relational database management, combining robust architecture, scalability, and a rich set of features. Trusted by enterprises worldwide, **Oracle Database** continues to evolve, embracing new technologies and methodologies to meet the ever-expanding demands of modern data management. For transactional processing, analytical tasks, or complex data scenarios, Oracle Database remains a cornerstone for organizations seeking a reliable and scalable solution for their data management needs.

Key Features of **Oracle Database**:

1. **Multiversion Concurrency Control (MVCC):**
    - Enables concurrent transactions without compromising data consistency.
2. **Query Optimization and Execution:**
    - Sophisticated query optimizer for efficient execution of SQL queries.
    - Support for indexing, partitioning, and materialized views to enhance query performance.
3. **Scalability:**
    - Vertical scalability with the ability to scale up by adding resources to a single server.
    - Horizontal scalability through Real Application Clusters (RAC) for distributed workload.
4. **Data Types and Structures:**
    - Support for various data types, including numeric, character, date, spatial, and multimedia data.
    - Flexible data structures such as tables, views, and sequences.
5. **Advanced Analytics and Data Warehousing:**
    - In-built support for advanced analytics and data warehousing tasks.
    - Integration with Oracle Analytic Functions and tools for complex data analysis.
6. **In-Memory Processing:**
    - In-memory columnar storage for improved query performance and faster analytics.
    - Oracle Database In-Memory option for enhancing analytical queries.
7. **Automatic Storage Management (ASM):**
    - Simplifies storage management by automating data placement and rebalancing.
    - Ensures optimal performance and reliability of storage resources.
8. **Security Features:**
    - Robust authentication and authorization mechanisms.
    - Transparent Data Encryption (TDE) for securing data at rest and in transit.
    - Fine-grained access controls, auditing, and Oracle Label Security.
9. **High Availability:**
    - Data Guard for creating and maintaining standby databases for data protection.
    - Oracle RAC for clustering databases across multiple servers for high availability and load balancing.
10. **Backup and Recovery:**
    - Oracle Recovery Manager (RMAN) for comprehensive backup and recovery.
    - Flashback technology is used for point-in-time recovery and undoing data.
11. **Real Application Testing:**
    - Tools for testing changes to the database without affecting production.
    - SQL Performance Analyzer and Database Replay for testing and optimizing database performance.
12. **Cloud Integration:**
    - Oracle Cloud integration for deploying databases in the cloud.
    - Support for hybrid cloud scenarios with Oracle Cloud and on-premises deployments.
13. **Extensibility and Customization:**
    - PL/SQL, Oracle's procedural language, for developing custom procedures and functions.
    - Support for stored procedures, triggers, and user-defined functions.
14. **Management and Monitoring Tools:**
    - Oracle Enterprise Manager for centralized management and monitoring.
    - Performance tuning tools, including Automatic Workload Repository (AWR) and Automatic Database Diagnostic Monitor (ADDM).
15. **Partitioning and Compression:**
    - Partitioning options to manage and improve the performance of large tables and indexes.
    - She advanced compression techniques for reducing storage requirements.
16. **Spatial and Graph Data Management:**
    - Spatial data support for storing and querying spatial information.

- Graph data management for analyzing relationships in data.

17. **JSON Support:**
    - Native support for JSON data with JSON data types and functions.
    - JSON indexing for efficient querying of JSON documents.
18. **XML Database Support:**
    - Native support for XML data with XML data types and functions.
    - XML indexing for efficient retrieval of XML documents.
19. **Application Development Tools:**
    - Oracle Application Express (APEX) for web application development.
    - Oracle Developer Tools for Visual Studio and Oracle SQL Developer for development environments.
20. **Globalization and Localization:**
    - Support for multiple languages and character sets.
    - Advanced globalization features for internationalization and localization.

版本列表

Oracle Database 21c 21.3 x64