ORACLE DATABASE LITE® 10g

KEY NEW FEATURES IN 10.3

- Synchronization support for Berkeley DB and SQLite databases
- Background Synchronization without database locking
- Windows Mobile 5 & 6/CE Standard SDK 5.0 support. Android and Blackberry device support
- JDK 1.5 compatibility
- Rapid Application Development with MDW Quick Start Wizards
- Troubleshooting with Mobile Server Repository Diagnostic Tool (MSRDT)
- Mobile Client installation without administrator privileges.
- New member user privilege to support field force teams.
- Oracle RAC support
- Sync repository separation from application data
- File-based synchronization in absence of network connectivity

KEY BENEFITS

- Extend the Grid Environment to enterprise-enable mobile workers with on-the-go access to enterprise data
- Increase employee productivity, reduce operation costs, and improve customer satisfaction with demonstrable impact in sales force automation, data collection, customer relationship management (CRM), and field service applications in a wide range of industries

Oracle Database Lite 10g is an integrated and complete solution for rapid development and deployment of high impact, mission critical applications for mobile and lightweight environments. Corporations with mobile workforces can leverage Oracle Database Lite 10g to increase employee productivity, reduce operation costs, and improve customer satisfaction.

Oracle Database Lite Overview

Oracle Database Lite 10*g* is an integrated and complete solution for rapid development and deployment of high impact, mission critical applications for mobile and lightweight environments. It extends the grid environment to mobile devices, allowing mobile workers to access enterprise data and applications in the absence of a network connection. When a network connection is available, Oracle Database Lite uses data synchronization to allow reliable and secure data exchange with a corporate Oracle Database.

The three main components of Oracle Database Lite are:

1) Client stack, including Berkeley DB, available on multiple platforms including Android, iPhone (Apple iOS), Blackberry, Symbian OS, Windows 32-bit, Windows Mobile, Linux, and other mobile device platforms.

2) Mobile Server for synchronization and scalable deployment and management of applications, users, and devices.

3) Developer tools that enable quick and simple application development.

Full-featured Client Stack

The Oracle Database Lite client includes various components that operate in concert to facilitate a seamless user experience and easy remote administration. The Mobile client provides support for either a SQLite database or Oracle Berkeley DB.

- SQLite is the most popular embedded database library available and is widely used in smart phones, including Android and Blackberry devices. It is a small footprint, transactional database library that is self-administering, requiring no external DBA involvement.

- BDB is a very widely deployed embedded database library that provides enterprise class features, including high throughput, low-latency reads, non-blocking writes, data scalability and in-memory caching in a small memory footprint. BDB offers a SQL API that is completely SQLite compatible. BDB offers features that allow it to scale well beyond the limitations of the SQLite native library, while retaining the ease-of-use of the SQLite API.

The Mobile client supports both databases with rich data synchronization. Depending on the platform, a synchronization agent can synchronize automatically in the background, a GUI application can enable manual invocation of synchronization and APIs can be invoked by the application. On some platforms, a device agent on the Mobile client

allows administrators to remotely manage the device by sending commands or querying system and application data. Finally, on some platforms, an update utility supports application life-cycle management.

Enterprise Ready Mobile Server

Mobile Server, the core of the Oracle Database Lite product, can be deployed on commodity server hardware running industry standard operating systems including Windows, Linux, Solaris, HP-UX and IBM AIX. The Mobile Server provides a reliable, bi-directional synchronization system and a powerful administration interface.

Robust and Scalable Synchronization System

Based on the publish-subscribe model, Oracle Database Lite's synchronization system allows efficient asynchronous and synchronous incremental data synchronization between thousands of mobile users and the Oracle Database.

Oracle Database Lite recovers from network failures during synchronization. If a user experiences a network failure during synchronization, the Database Lite client will resume the function from the last acknowledged checkpoint rather than restart the transmission.

Mobile Server analyzes information contained in the mobile application to automatically create the application's server-side synchronization logic. Oracle Database Lite provides a flexible architecture that enables customization of the synchronization process at multiple levels. Callback support enables interleaving various application-specific tasks during the various synchronization phases. Developers can choose to optimize only the resource intensive Compose phase of synchronization by implementing java classes that leverage their insights into the data model. Alternatively, developers can provide full control of the synchronization system by independently managing the data queues that contain the uploaded data and the client updates to be downloaded.

Conflicts can occur when the same data has been modified by the server and the client, or by multiple clients. Oracle Database Lite automatically detects such conflicts and resolves them based on configurable standard resolution rules.

Comprehensive Management and Administration

Oracle Database Lite employs a secure, centralized repository to support a unified interface for distributing and managing software and data on remote systems. Mobile Manager, a web-based administration interface for Mobile Server, enables 100% server-side management of all mobile applications, devices, users and mobile servers. The administrator can create users and groups, assign application access privileges, send device commands and retrieve device diagnostic information from a single interface. Integration with enterprise Oracle OID and LDAP directories further simplifies user management. In addition, the administrator can manage the synchronization process by setting its frequency, resolving errors, or analyzing and tuning its performance from the same interface. Further, a scripting language that can be used to batch administration functions minimize administrator overhead.

Rapid Application Development Support

The Oracle Database Lite Mobile Development Kit (MDK) is a set of tools, APIs, tutorials and code samples that accelerate the development of mobile applications.

The Mobile Database Workbench (MDW) is a visual development tool for designing replicated databases. Wizards in the MDW accelerate creation of replicated databases by allowing developers to quickly define and customize snapshots of enterprise data models for incorporation into the replicated database. The Packaging Wizard enables bundling all application components (JSP/servlets, executables, DLLs, images, etc.) into a JAR file for simple upload to the Mobile Server from where it can be deployed to mobile or lightweight business environments easily.

Developers can use Oracle JDeveloper with ADF Mobile to visually develop applications that enable access to critical business data. Oracle Database Lite includes support for deploying and managing applications created using JDeveloper and ADF Mobile.

Oracle Database Lite also supports familiar data access interfaces and open standards such as ODBC, JDBC, and ADO.NET. Tutorials and samples included in the documentation and MDK highlight how to leverage specific features or develop applications on a particular platform.

Table 1 Supported data access technologies on supported Database Lite client platform

O/S	ODBC	JDBC	ADO.Net
Windows 32 bit	Yes	Yes	Yes
Windows Mobile/CE	Yes	Yes	Yes
Linux	Yes	Yes	N/A
Symbian OS	Yes	Yes	N/A

High Performance and Scalability

Oracle Database Lite delivers out-of-the-box performance, enabling users to access information quickly and efficiently. Multiprocessor and dynamic cache sizing ensure top performance for larger databases and greater numbers of connected users. Oracle Database Lite provides tools to tune the performance of data synchronization.

Database Lite supports both single-user and multi-user deployment configurations guaranteeing that Oracle Database Lite applications can adapt to the demands of ever-changing environments. Mobile Server integration with the WebLogic Server 11*g* and Oracle Application Server (OAS) enable scaling of Mobile Server deployments by taking advantage of their load balancing features.

On the mobile device side, Berkeley DB's small footprint, extreme scalability, and fine-grain locking make it suitable for almost any application. It supports a high degree of concurrency, including support for concurrent Vacuum and Backup commands.

Unparalleled Device and Application Security

Oracle Database Lite provides standard device commands as well as the infrastructure to implement new commands to support enterprise business processes and security best practices. For example, you can issue commands to synchronize the database, perform diagnostics, or change application settings. In the event of a device loss, theft, or other security concern, you can delete applications and databases, uninstall the client or reset the password.

SSL based encryption protects data integrity while data is in transit between the device and the enterprise database.

Table 2 Key Oracle Database Lite features

Berkeley Database	Synchronization System	Mobile Manager
• Footprint is 1 MB • Very broad platform support • High performance • Non-blocking writes • In-memory caching • Concurrent access by multiple threads or processes • Full ACID transactions • Automatic recovery • Scales to 256 TB of data in a single table • JDBC, ODBC, ADO.NET APIs • SQL-92 support • 128-bit AES encryption • Fine-grain locking • Zero administration	• Flexible & reliable bi-directional synchronization • Asynchronous architecture for high scalability • Multi-threaded architecture • Custom synchronization invocation • Automatic (background) Synchronization • Support for schema evolution • SSL encryption & data compression • Network failure recovery • Built-in and custom conflict detection / resolution • Ability to synchronize data and applications	• EM compliant UI • Can operate standalone or integrated with OAS or WebLogic Server • Single Sign-On • Scripting language for batch administration • Extension APIs • User management • Application provisioning and deployment • Device management including remote diagnostics • Unified interface to monitor synchronization and resolve errors

Conclusion

Corporations can leverage Oracle Database Lite 10*g* to increase employee productivity, reduce operation costs, and improve customer satisfaction. Oracle Database Lite has delivered demonstrable impact in sales force automation, data collection, customer relationship management (CRM), and field service applications in a range of industries including financial services, healthcare, transportation, logistics, government and retail.

Contact Us

For more information about Oracle Database Lite, please visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

Oracle is committed to developing practices and products that help protect the environment

ORACLE