

ORACLE DATABASE MOBILE SERVER 11g[®]

KEY NEW FEATURES IN 11.1

- Support for Java SE, including SE Embedded
- Device Management for Android platforms
- Automatic sync for Android and Blackberry platforms
- Support for Oracle Glassfish
- Support for Java 1.6
- Better integration with Oracle Berkeley DB, including encryption support

Oracle Database Mobile Server 11g is the best way to securely connect embedded devices and mobile applications to Oracle Database.

Any organization with a mobile workforce or network of remote devices can benefit from using Oracle Database Mobile Server to safely and reliably link them into their existing enterprise infrastructure. Oracle Database Mobile Server is designed to work with Berkeley DB, Oracle's high performance mobile data store. It is also compatible with SQLite, the popular open source project.

KEY BENEFITS

- Secure, efficient, resilient mobile data synchronization with Oracle Database
- Remote application, user, and device management
- Standards-based encryption for remote data, in both storage and transit
- Robust and reliable mobile data synchronization over unreliable networks
- Highly scalable server configuration, supporting large and growing mobile or remote deployments

Oracle Database Mobile Server Overview

Oracle Database Mobile Server 11g is a reliable, secure way to link mobile applications and embedded devices into existing enterprise infrastructure. It is well suited for mission critical applications or any application where high performance and reliability are required. It extends the application grid to mobile devices, allowing access to enterprise data and applications in the absence of a network connection. When a network connection is available, Oracle Database Mobile Server uses data synchronization to allow reliable and secure data exchange with a backend Oracle Database.

The three main components of Oracle Database Mobile Server are:

- 1) Mobile Client, resides on mobile platform to facilitate sync and remote management
- 2) The Sync Server itself, coupled with the Mobile Manager console, provide scalable, secure management of data, applications and devices.
- 3) Mobile Development Kit (MDK), a suite of tools for packaging, publishing and testing applications.

Multi-Platform Mobile Client

Oracle Database Mobile Server supports many different client platforms, including Java, Android, Blackberry, Windows Desktop & Mobile, and Linux. The Mobile Client provides support for either a SQLite database or Oracle Berkeley DB.

- Berkeley DB is a widely deployed, mature 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. Berkeley DB offers a SQL API that is SQLite compatible. Berkeley DB 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.

- SQLite is a very popular open source embedded database library 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.

The Mobile Client supports both databases with a rich set of data synchronization features. Data synchronization can be enabled in a variety of ways – automatic background sync, manual sync using a GUI, command line app, or even from another application using API calls.

A device agent on the Mobile client allows administrators to remotely manage the device by sending commands or querying the system. Application life-cycle management can be achieved by enabling remote application updates.

Enterprise Ready Mobile Server

At the core of the Oracle Database Mobile Server product is the server itself, which 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 or “pub-sub” model, the Oracle Database Mobile Server synchronization system allows efficient asynchronous and synchronous incremental data synchronization between thousands of mobile users and the Oracle Database.

Oracle Database Mobile Server features a robust and resilient synchronization process. In the event of a network failure, the client will resume the function from the last acknowledged checkpoint rather than restart the transmission. The result is that a successful synchronization can be achieved even over unreliable network connections.

Oracle Database Mobile Server is capable of analyzing information contained in the mobile application to automatically create the application's server-side synchronization logic. It 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 Mobile Server automatically detects such conflicts and resolves them based on a highly customizable rule set.

Comprehensive Management and Administration

Oracle Database Mobile Server 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. A scripting language is available that can be used to batch administration functions minimize administrator overhead.

Rapid Application Development Support

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

The main component of the MDK is the Mobile Database Workbench (MDW), a visual development tool for designing synchronized databases. Wizards in the MDW accelerate creation of synchronized databases by allowing developers to quickly define and customize snapshots of enterprise data models for incorporation into these databases. The Packaging Wizard enables bundling all application components (executables, libraries, images, help files etc.) into a JAR file for simple upload to the Mobile Server from where it can be deployed to mobile, embedded 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 Mobile Server includes support for deploying and managing applications created using JDeveloper and ADF Mobile.

Oracle Database Mobile Server 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 install highlight how to leverage specific features or develop applications on a particular platform.

O/S	ODBC	JDBC	ADO.Net
Java	N/A	Yes	N/A
Android	N/A	Yes	N/A
Blackberry	N/A	Yes	N/A
Windows Desktop and Mobile	Yes	Yes	Yes
Linux	Yes	Yes	N/A

Table 1 Supported client platforms

High Performance and Scalability

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

Oracle Database Mobile Server integrates with Oracle WebLogic Server to enable scaling of Mobile Server deployments by taking advantage of the 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 Mobile Server provides standard device commands as well as the infrastructure to implement customized 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 Mobile Server features

Berkeley Database	Synchronization System	Mobile Manager
<ul style="list-style-type: none"> • 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 TB of data in a single table • JDBC, ODBC, ADO.NET APIs • SQL API compatible with SQLite, SQL-92 • 128-bit AES encryption • Fine-grain locking • Zero administration 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • EM compliant UI • Single Sign-On capability using Oracle Identity Management • 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

Organizations of all types can leverage Oracle Database Mobile Server 11g to increase employee productivity, reduce operation costs, and improve customer satisfaction. Oracle Database Mobile Server has delivered demonstrable impact in a wide variety of roles, including sales force automation, data collection, customer relationship management (CRM), and field service applications. It has an established presence in a range of industries including financial services, healthcare, transportation, logistics, government, retail, military, and law enforcement. It is also commonly used as a building block for custom solutions by ISVs and System Integrators (SIs).

Contact Us

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



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