Mobile OLAP

Oracle OLAP Goes Mobile

Keywords

Oracle Database, OLAP Option, Mobile, Apple iPad, iOS, Tablet, BI, Ad-hoc Analysis, Reporting

Introduction

In this paper, and in the corresponding DOAG 2013 conference session, we elaborate on the BI features of Mobile OLAP and how best to leverage it for secure, live analysis on your Oracle OLAP data.

In the conference session, we'll show a real-life example from Team Lines, one of Europe's leading oceanic feeder container operators that connects more than 30 ports from the Iberian Peninsula up to the Baltics and deploys about 35 high-quality modern feeder vessels.

We present a solution to a common set of multi-dimensional BI challenges, in particular, the use of a three-tier system composed of:

- Mobile OLAP App and its BI client features

- Mobile OLAP Server that connects app and database

- Oracle OLAP Option data cubes.

We want to illustrate to DOAG members the connectivity and BI power that can result when all these elements are put together.

Oracle OLAP Cubes

Oracle OLAP is a world class multidimensional analytic engine embedded in Oracle Database 11*g,* hosting a complete and sophisticated multi-dimensional OLAP system. It's designed to answer multi-dimensional queries extremely fast. Importantly, your data remains in the Oracle Database, protected by standard Oracle security. There's no need to extract data into a mid-tier server for analysis, and thus no need to manage extra systems and security associated with a mid-tier solution. Oracle OLAP Option includes Oracle's powerful, built-in calculation engine – which can be further accelerated by Exadata hardware – that processes massive amounts of data in seconds to deliver lightning-fast BI.

Extending FASMI Definition

Pendse and Creeth[1] defined five producer-independent evaluation rules in order to describe the OLAP concept. FASMI stands for "Fast Analysis of Shared Multidimensional Information".

- **Fast** Queries should take an average of 5 seconds.

- **Analysis** The definition of queries should not require any programming.

- **Shared** An OLAP system should be accessible to multiple users.

- **Multidimensional** Data should be structured in multiple dimensions with full support of dimension hierarchies.

- **Information** All data must be transparently accessible to the user.

These five rules are perfectly fulfilled by Oracle's OLAP Option. Mobile OLAP takes it one step further to fulfill the following new rule:

- **Mobile** An OLAP system should be accessible from mobile devices.

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[1] http://en.wikipedia.org/wiki/FASMI

Oracle OLAP Option Goes Mobile

Wouldn't it be nice to access your data warehouse with your mobile device – anywhere, anytime?

- Great if you're in **management** and want to view summary reports.

- Great if you're in **sales** and want to show reports to partners.

Gartner predicts that by 2015, over 50 percent of mobile BI users will rely exclusively on mobile devices for insight delivery, and will grow BI users by 20 percent.[2]

Enter Mobile OLAP

Mobile OLAP lets you do just that. You can access your OLAP cubes from your tablet using an easy to use, intuitive interface. You can view your data in cross tabs and visualize them in bar charts, maps and more, all on your Apple iPad.

Use ready-made reports or do your own **ad-hoc analysis**. Select cubes and dimensions to define cross-tab rows and columns. Then drill up and down the hierarchy levels and swap axes. You can use sheets to switch between different views of the same data and compare analyses.

All data is accessed **real-time**, so there is no stale data.

When you're done with your analysis, you can **export** discovered data as CSV, e.g. to Apple Numbers for presentation purposes or send the table by mail.
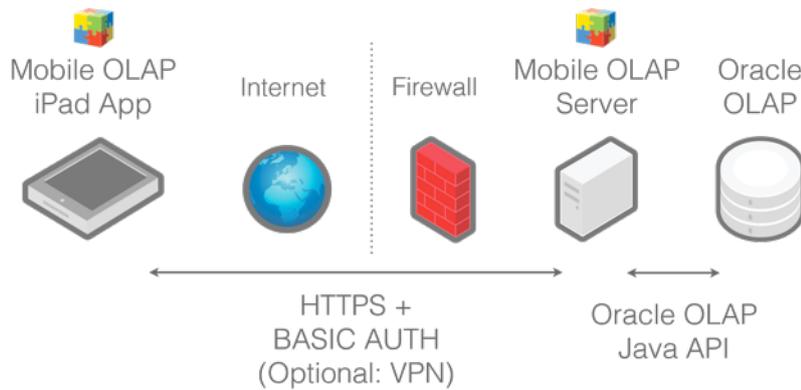
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[2]

http://www.forbes.com/sites/gartnergroup/2013/02/26/mobility-and-real-time-dashboards-will-make-business-intelligence-more-pervasive-in-2013/

Architecture

Mobile OLAP uses a three tier architecture. The Mobile OLAP App connects to the Mobile OLAP Server which connects to your Oracle database's OLAP option. Only standard Oracle and Apple technologies are used.

The app is a native iPad app, designed by leading UX designers specifically for use on tablets, that puts the data a user wants at the touch of her fingertips. Not a one-size-fits-all solution, Mobile OLAP is a solution tailored for tablets.

The light weight server serves as a bridge between app and Oracle OLAP cubes, and allows administrators to easily manage database connectivity and app security. It is a JEE web application that runs inside an Oracle Glassfish Server and uses the Oracle OLAP API for Java to connect to the Oracle OLAP Option.

The app can access any cubes inside the Oracle OLAP option, no extra database configuration is needed. If wanted, access to cubes can be restricted by the Mobile OLAP server, filtering the cubes available to the app.

Security

The app connects to the server using SSL encryption (HTTPS). The app must authenticate itself to the server, the app key and secret are configured once per device via email.

Users connect to the database with their regular Oracle credentials, i.e. user management remains inside the database, reducing administration overhead.

To increase security, the app can connect to the server through a VPN Tunnel.

Thanks to the three tier architecture, in case of a worst case scenario, the Mobile OLAP server can be disconnected from the Internet, shutting off external access without disturbing connection from the Intranet.

Requirements

The Mobile OLAP App requires an Apple iPad with iOS 6 or higher. iPhone and Android versions will be coming soon.

The Mobile OLAP Server runs inside an Oracle Glassfish Server[3] in a Java Runtime Environment 1.6 or higher, e.g. on Oracle Linux[4].

An Oracle Enterprise Database with OLAP Option 11.2 or higher is needed.[5]

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[3] Tested on Oracle Glassfish 3.1.2. The server should also run in other JEE compliant web servers, e.g. WebLogic, Tomcat.

[4] JRE 1.6 or higher needed, Windows and OS X also supported

[5] Oracle Fusion Middleware and Oracle Business Intelligence Suite Enterprise Edition are not needed.

Mobile OLAP

Resources and Additional Information

Mobile OLAP Webpage

Information on Oracle Database OLAP Option

Contact

Mobile OLAP

Guy Saldanha & Thomas Ewald-Nifkiffa

Bernstorffstr.4

DE-22767 Hamburg

Phone: +49(0)40-18173231

info@mobile-olap.com

http://www.mobile-olap.com

Partners:

concept to solution

– OLAP experts –

Dorfstr.13

DE-23923 Boitin-Resdorf

Phone: +49(0)38821-68671

Fax: +49(0)38821-68674

Email   info@concept-to-solution.com

Internet: www.concept-to-solution.com