

# **OBIEE reporting best practices for RPAS based Oracle Retail planning and optimization modules**

Whitepaper

By Quickborn Consulting LLC



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## Preface

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This paper details an integration approach between Oracle Retail Predictive Application Server based modules and Oracle Business Intelligence Enterprise Edition reporting with a particular focus on high volume and complex data structures and complex data formatting requirements.

For further information about these and other issues and solutions encountered during installation, configuration, sizing, maintenance, operation and administration of RPAS and OBIEE domains and servers, please do not hesitate to contact the author: Quickborn Consulting LLC on our website: [www.quickbornconsulting.com](http://www.quickbornconsulting.com).

## Implementing reporting with high data volume and complexity requirements

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During the planning processes users often must review large amounts of data in an easy to comprehend, condensed and clear format that helps merchandisers and buyers to compare figures across a large set of data columns and rows. Such needs are difficult to answer on the standard Oracle Retail Planning module UI regardless of whether a customer is using the new Fusion based UI or the traditional classic UI for planning.

For such purposes the use of a reporting engine is needed, with the ability to access data stored in the RPAS database. One solution for such a requirement is the Oracle Business Intelligence Enterprise Edition. OBIEE has the capability to report directly from the RPAS database via a special ODBC adapter provided by Oracle specifically for RPAS. Although this solution is ideal for reporting on small to moderate sets of data, in case of large data sets with complex formatting and aggregation levels and data structures, a more robust solution was needed due to problems experienced in performance of the RPAS ODBC driver when retrieving large amount of complex data from the RPAS database.

### The problem:

Unfortunately the RPAS ODBC driver, which is responsible for data retrieval from the multidimensional RPAS database, cannot provide the stability and the performance which is needed in the case of mass amount of complex data. Also as the driver shows a so called relational format of the multidimensional database - mapping hierarchies and values real-time between the two database structures – developers encounter decreased functionality in SQL queries that are used to access data from RPAS via the ODBC driver for RPAS.

In addition to the above limitation in the set of available SQL instructions via ODBC for RPAS, the usage of the RPAS database for reporting purposes during daytime is also resource intensive, which is not recommended during the planning task flow when users are also accessing the RPAS database querying large sets of data and potentially also updating the same. Reporting from the same database that is used by users during daytime activities will slow its performance which in turn affects system response time to user queries. Unless absolutely real-time data is needed to be reported, the live RPAS

production database should never be used for reporting during normal daytime operations. Reports should either be generated at night, or a separate database, with a copy of the PRD data should be used for reporting.

#### The solution:

In order to be able to reliably use the full set of SQL commands and the full power of the Oracle RDBMS, we recommend to reload the data required for reporting into an Oracle RDBMS database schema periodically in the maintenance window using ODBC for RPAS to get data out of the RPAS database and run reports on this RDBMS schema in OBIEE. This way the RPAS production database is not overloaded with query executions during normal business hours, and the OBIEE reporting can be executed utilizing the full spectrum of SQL language capabilities that the ORDBMS supports. Note that data in the reports will not be real time but will only be current to the last nightly refresh. If this is a problem, there are multiple ways to provide real-time data reporting that work in combination with the approach described in this document.

To copy data from an RPAS domain to an Oracle database for reporting purposes, we used a heterogeneous database link to do the transfer of data. We created a database link to the ODBC data source on the RPAS server and pulled data into Oracle RDBMS. This was needed because querying the RPAS domain directly through the RPAS ODBC driver was slow and unstable.

The data transfer was by 'create table as select' statements.

Regarding the data transfer we noticed the following:

- ✧ Only those fact tables were visible over the database links that were defined in the odbc.ini of the RPAS ODBC driver.
- ✧ When transferring dimension tables only one table per session could be pulled in, when taking multiple tables in the same session the connection to the RPAS ODBC data source was dropped.
- ✧ The column names were transferred case sensitive

- ▲ In case of some of the FACT tables the columns had to be named in the 'create table as select' one-by-one, otherwise the statement resulted in 'Column name ambiguously defined' messages. This happened in most cases on the low-level fact tables (the table containing the measure data on the base intersection).

### Conclusion:

With this solution you can use the advantages of the Oracle RDBMS such as performance, mass data handling in a relational way and high stability. The optimal hardware architecture, in which the reporting database is installed on a separate machine, leaves the usually daytime planning activities unaffected from the reporting processes while reports can execute safely, quickly and with high amount of data and with high degree of complexity in the data structures and the subsequent aggregation and formatting of the report outputted, whether that format is PDF, Excel or RTF.

### Learn more

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#### About Quickborn Consulting:

Quickborn Consulting is a provider of business consulting, IT systems integration, solutions development and support services for the global retail industry. The company supports retailers on their business and IT transformation programs to improve their performance and increase their competitiveness. Quickborn Consulting has local presence in USA, France, Germany, Hungary, India and Ireland, and is present globally through its international network. Read more about Quickborn Consulting at: [www.quickbornconsulting.com](http://www.quickbornconsulting.com)

#### About Oracle Retail

Oracle provides retailers with a complete, open and integrated suite of business applications, server and storage solutions that are engineered to work together to optimize every aspect of their business. 20 of the top 20 retailers worldwide - including fashion, hardlines, grocery and specialty retailers - use Oracle solutions to drive performance, deliver critical insights and fuel growth across traditional, mobile and commerce channels. For more information, visit our Web site at <http://www.oracle.com/goto/retail>

**About Oracle Business Intelligence Enterprise Edition**

Oracle BIEE is an industry leading BI tool suite and foundational technology stack for BI application development. As a part of this stack, there is a reporting solution called BI Publisher. This solution uses a relational database approach as backend.

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