Integrating Oracle's "Hot Pluggable" Business Intelligence Technology with Teradata

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Executive Summary

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Oracle/Teradata Alliance – Background and value proposition

The Oracle-Teradata partnership has a proven history of delivering value to joint customers, and an ongoing commitment to continuing this record in the global marketplace. Teradata had well-established relationships with several companies that have since been acquired by Oracle and now form the core of several strategic offerings:

- Hyperion – Performance Management
- Siebel – Business Intelligence
- Sunopsis – Data Integration

The partnership has an established base over 200 joint customers, and both partners are ranked as leaders in the Business Intelligence and CPM suites (Oracle) and Data Warehouse/DBMS Gartner Magic Quadrants (Teradata).

The partnership's central value proposition is to provide customers an enterprise view of their business, a view that is built around the following components:

- Teradata Enterprise Data Warehouse – highly scalable data management platform
- Oracle Business Intelligence and Data Integration technology integration and optimization with Teradata
- Oracle Business Intelligence Applications and Enterprise Performance Management (EPM) Applications

Data Modeling – Options and approaches leveraging joint technologies

The partnership offers proven support for effective data modeling and management at every phase of the underlying processes – data cleansing and transformation, logical and physical modeling and semantic views attuned to users' needs.

Dimensional modeling is a form of semantic data modeling, which may or may not be materialized in a physical Star or Snowflake Schema, this capability is built around a central table or entity containing facts, metrics, quantities, and measures such as fact tables. Dimensions with a hierarchy of levels provide organization to the facts. This model simplifies support for reporting and analytical applications.

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Teradata provides proven physical data model (PDM) extensions for performance acceleration. Advanced indexing techniques in Teradata can provide significant performance acceleration for Oracle applications. Evaluate Primary Index, Consider Partitioned Primary Index, Add Secondary Indexes, Add Join Indexes, Add Aggregate Join Indexes. Benefits include better build times for OLAP cubes (from 42 to 3 minutes), faster response for ROLAP queries, better response times for analytic queries (from 95 to 3 seconds) - all maintained by Teradata.

Oracle-Teradata Integration Options

The partnership offers numerous platform integration options:

- Extract Load and Transform (ELT)
- Direct Relational Access
  - Query, analysis, and enterprise reporting directly from the EDW via Oracle Business Intelligence, Hyperion Interactive Reporting and Hyperion SQR Production Reporting
- Multi Dimensional Applications (Essbase) Integration
  - Drill down from summary data in an Essbase multidimensional analytic application to the relational source in the EDW
  - Drill-through Reports from an intersection of data in an Essbase application and automatically run a relational report in the EDW
- EPM Application Integration
  - 2-way data movement between the Teradata EDW and Oracle EPM applications - budgeting/planning, financial consolidation, and performance scorecards

Oracle Data Integrator and Teradata

Key differentiator of the data integration technology is the fact that with Oracle Data Integrator there is no need for a new, separate, proprietary ETL server and associated

performance issues or high costs. This results in the following associated features and benefits:

- Lower Cost: Leverage Compute Resources & Partition Workload efficiently
- Efficient: Exploits Database Optimizer
- Fast: Exploits Native Bulk Load & Other Database Interfaces
- Scalable: Scales as you add Processors to Source or Target
- Optimal Performance & Scalability
- Better Hardware Leverage
- Easier to Manage & Lower Cost

In addition, Oracle Data Integrator is optimized for performance with Teradata. It provides the highest performance data integration because loading & transformation performance is always a function of the Teradata system itself, not 3rd party hardware or inefficient row-by-row processing. In addition, ODI's E-LT is superior to push-down ETL because it eliminates needless network hops, centralized ETL processing, requires no new hardware, supports all transformation complexities and fully optimizes for differentiated Teradata features, including MultiLoad, FastLoad, TPump, FastExport, parallel processing, merge joins, hash joins, nested joins, and complex sort algorithms.

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ODI also provides an on-Ramp to SOA, MDM and ERP Applications:

- 100% Java & SOA Native – ODI is deeply integrated into Oracle's SOA fabric and can share runtime with any Java-based SOA infrastructure
- Integrated/Packaged with Leading MDM Applications – ODI is deeply integrated with market leading MDM and supplies key MDM features
- Integrated/Packaged with Leading ERP Applications – ODI supports all popular ERP Applications and is essential for Oracle Fusion Applications

Oracle Business Intelligence and Teradata

Oracle-Teradata improves on conventional enterprise information systems in the following ways:

- Oracle BI Server
  - Simplified Business Model View
  - Advanced Calculation and Integration Engine
  - Intelligent Request Generation and Optimized, Distributed Data Access
  - Mission Critical Scalability and Performance
  - Foundation for all OBIEE Presentation Services

- OBI EE Teradata Optimization
  - Native SQL query optimization
  - Extensive usage of derived tables and sub-queries
  - Exploits 3NF schemas (no schema requirements imposed)
  - High degrees of parallel processing leveraged across all tiers

- Smart Connectivity to Teradata
    - Better performance, scalability & security
    - Managed pooling of connections
    - Synchronous and asynchronous access
    - Query governing including SQL Cancellation
    - Support Various database isolation levels
    - Bulk data fetching via ODBC
    - Unicode character set for global user support
    - Bulk row insert via ODBC for efficient write back

In addition, the partnership provides a Teradata Specific SQL Code Generation Engine which ships functions to Teradata for optimal processing.

Oracle Business Intelligence Applications and Teradata

Oracle BI Applications have been optimized for performance on the Teradata database. They have been jointly designed for performance by Teradata and Oracle engineers. Features include specialized Teradata indexing strategies and exploitation of Teradata's high-performance load utilities – Fast Load and TPUMP.

Oracle BI Applications' ETL technology have also been optimized for Teradata, including modification of Business Analytics Warehouse (BAW) ETL to improve data movement and enhancement of the data warehouse application console including certified connectivity.

Oracle Hyperion Essbase and Teradata

Essbase relational integration with Teradata enables a wide range of analysis options for our joint customers. "Speed of thought" response time and complex calculations with higher-level aggregate data in combination with access to detailed data Teradata leverage the best capabilities of both Essbaase abd Teradata. This enables flexibility in the design and delivery of your application to meet a broad range of business requirements..

Oracle EPM Applications and Teradata

Oracle's EPM application integration is built around an OEM of Informatica called Data Integration Management (DIM). Informatica is also a long time Teradata partner and leverages key Teradata utilities including Teradata ODBC, FastLoad, TPump, MultiLoad, FastExport and Teradata Parallel Transport

How to Learn More

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