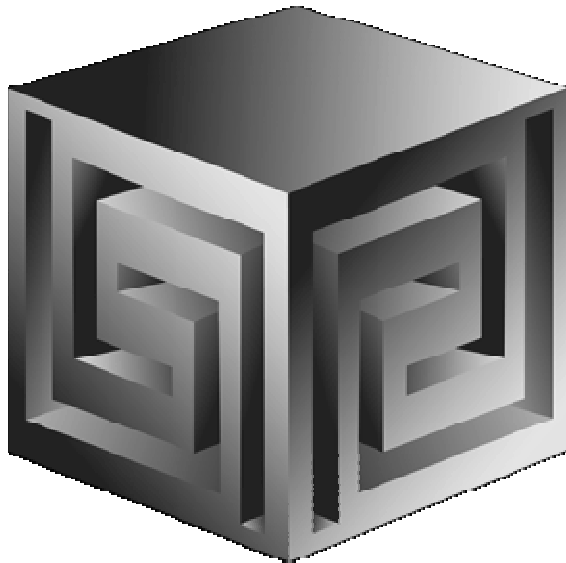# Oracle BI, Oracle OLAP, Essbase Compared

ODTUG Kaleidoscope 2008

Wednesday June 18, 2:45 PM – 3:45 PM

Dan Vlamis

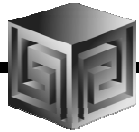dvlamis@vlamis.com

Vlamis Software Solutions, Inc.

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http://www.vlamis.com
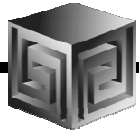
Agenda

- **Introduction**
- **Perspective on Oracle DB-centric and middle tier stacks**
- **Focus on Multi-dim DBs: Oracle OLAP and Essbase**
  - ❑ **Logical structure, data storage, dimensional model**
  - ❑ **Loading data**
  - ❑ **Aggregation, Allocation**
  - ❑ **Calculation**
  - ❑ **Scalability**
  - ❑ **Write-back, Security, Administration**
  - ❑ **Front ends**
  - ❑ **Pricing**
- **Similarities**
- **Helping the client choose which OLAP solution**
- **Specific scenarios**
- **Suggested questionnaire**
- **Conclusions**

Vlamis Software Solutions, Inc.

- **Founded in 1992 in Kansas City, Missouri**
- **Oracle Partner and reseller since 1995**
- **Specializes in ORACLE-based:**
  - ❑ **Data Warehousing**
  - ❑ **Business Intelligence**
  - ❑ **Data Transformation (ETL)**
  - ❑ **Web development and portals**
- **Delivers**
  - ❑ **Design and integrate BI and DW solutions**
  - ❑ **Training and mentoring**
- **Expert presenter at major Oracle conferences**
- **www.vlamis.com (blog, papers, newsletters, services)**

Vlamis Kaleidoscope Presentations

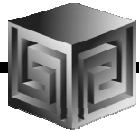| Presenter	Time	Title
Cathye Pendley	Tue 9:15-10:15	Building Cubes and Analyzing Data using Oracle OLAP 11g
Tim Vlamis	Wed 9:15-10:15	Lies, Damn Lies, and Visualizing Data with Oracle BI
Dan Vlamis	Wed 2:45-3:45	Oracle BI, Oracle OLAP, Essbase – The Benefits and Cost of Openness

Dan Vlamis, President, Vlamis Software Solutions

- Developer for IRI (former owners of Oracle OLAP)
- Founded Vlamis Software in 1992
- Wrote portions of Oracle Sales Analyzer
- Beta tester and early adopter of Oracle OLAP
- Expert speaker and author
- Recognized expert in Express and OLAP industry
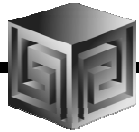- Bringing multi-dim experience to Essbase
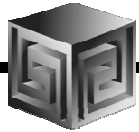
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Background

- **2006 - Oracle purchased Siebel**
  - ❑ **For CRM market share, keep away from SAP**
  - ❑ **Hidden gem: Siebel Analytics**
- **2007 - Oracle purchased Hyperion**
  - ❑ **To get into SAP customers**
  - ❑ **Hidden gem: Essbase**
- **Future for all products – wins customers over**
- **Power struggle between**
  - ❑ **"Traditional Oracle products" (Andy Mendelsohn)**
  - ❑ **"New middleware products" (Thomas Kurian)**

Server and Middle Tier Stacks

Category	Oracle DB Centric	Middle Tier
Database	Oracle DB	(varied)
ETL	Oracle Warehouse Builder	Oracle Data Integrator
Reporting	Reports -> BI Publisher	Answers / BI Publisher
Ad Hoc	Discoverer -> Answers	Oracle Answers
Business Intelligence	Oracle BI SE->EE, SE One	Oracle BI EE / SE One
Portal / Dashboards	Oracle Portal / APEX	Oracle Dashboards
Predictive	Oracle Data Mining	Real Time Decisions
Multi-dimensional data	Oracle OLAP	Essbase

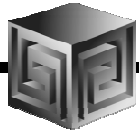# Best Fit for Client Needs

- Choose best technology to fit the client needs
- Each client has unique needs
- Oracle BI now has a wide array of technologies
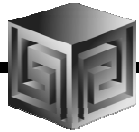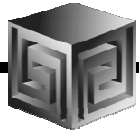- Analyze client needs before recommending solutions

Oracle OLAP

- **Started as Express—separate multi-dimensional db in 1970's**

- **Embedded into Oracle Enterprise Database**

- **Has proprietary OLAP DML language**

- **Typically access via Java OLAP API or SQL**

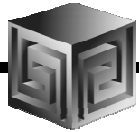- **Optimized for SQL access**

Oracle OLAP 11g New Features

- Materialized View rewrite (transparent to app)
- Materialized View loading (automatic load)
- Views for SQL access automatically generated
- Cost-based aggregation optimizes aggregation
- Metadata integrated into Oracle dictionary
- Tolerant of non-dimensional SQL
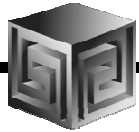- New GUI to define cell-level security

Oracle's Hyperion Essbase

- Started as Arbor Essbase -> Hyperion -> Oracle

- Standalone server database

- Two storage models: Block (BSO) and Aggregate (ASO)

- Calc scripts to calculate data in BSO, MDX for ASO

- Typically access via Excel addin, Smartview, and Hyperion Visual Explorer

- Has multiple access and manipulation languages

Essbase Upcoming Features

- **Real-time Analytics – Streaming updates**
- **Lifecycle Management**
- **Transaction logging, backup and recovery**
- **Support for varying attributes, text measures, enhanced time intelligence**
- **Oracle Linux 4.0 64-bit**
- **BPEL integration**
- **OBI EE as a data source and drill through target**
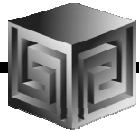- **XOLAP for fetch from relational db**
- **Essbase Studio**

Logical Structure

Oracle OLAP

- **Storage hierarchy:**
  - ❑ **Schema**
  - ❑ **Analytic Workspace**
  - ❑ **Cube(s)**
  - ❑ **Measures**
  - ❑ **Cells**

Essbase

- **Storage Hierarchy:**
  - ❑ **Application**
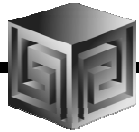 - ❑ **Database**
  - ❑ **Hypercube**
  - ❑ **Cells**

Data Storage

Oracle OLAP

- Stored as cubes (arrays) in analytic workspace

- Stored as BLOB in Oracle tablespaces

- Data can be integer, floating point, text, date, boolean, etc.

Essbase

- BSO: stored as series of blocks (arrays) in OS files (manual design)

- ASO: stored as array in OS files (automatic, but limited)

- Data stored as 8-bytes/cell floating point

- Text lookup (new)

Dimensional Model
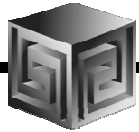
Oracle OLAP

- **Measures in cubes of varying dimensionality**

- **Handles multiple hierarchies**

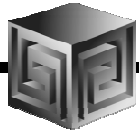- **"Shared members" would require custom coding**

Essbase

- **All dimensions similar in structure**

- **Single hypercube**

- **Multiple hierarchies via "Shared members"**

- **Data easily totaled by attributes (but only on-the-fly)**

Loading Data

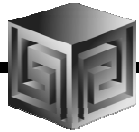| Loading From	Oracle OLAP	Essbase
Oracle Relational tables	Map via AWM or OWB	Map via EIS, EAS, or Essbase Studio (new) Load via ODBC
Flat files (delimited or columnar)	Proprietary FILEREAD command or use External tables and treat as relational table	Map via Essbase Admin, create Rules files
Foreign RDBMS	Use gateways and treat as relational view	Load via ODBC
SAP BW	Can handle via OWB	Load via SAP BAPI
XML	Handle via XML DB	Map via EAS or Essbase Studio

Aggregation

Oracle OLAP

- Multiple agg methods
- Can be set per measure
- New in 11g: optimizes aggregations for maximum performance
- Avoids double-storing single-parent nodes

Essbase

- Multiple agg methods
- BSO: +, -, /, %, ~, shared member, formula
- ASO: +, (all), -, /, %, ~ (dynamic only)
- ASO: optimizes aggregations for maximum performance
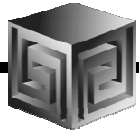- Avoids double-storing single-parent nodes

Allocation

Oracle OLAP

- **Allocation built-in similar to aggregation**

- **Generic set up**

- **Not widely used**

Essbase

- **BSO: allocation functions**

- **ASO: code using MDX formulas**

- **Wizard-based rules**

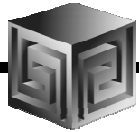- **Often performed with Hyperion Planning writing allocation scripts**

Calculations

Oracle OLAP

- **Full aggregation engine**
- **Formulas (10g)**
- **Expression language (11g+)**
- **Calculate models with equations (no GUI)**
- **Measure dimension can have formula**

Essbase

- **BSO: unary operators, member formulae, calc scripts (two-pass)**
- **ASO: unary operators, MDX expressions**
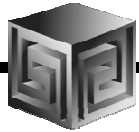- **Any dimension member can have formula**

Scalability

Oracle OLAP

- **Multi-threaded**
- **Multi-processor**
- **Can be partitioned**
- **Multi-server via RAC/Grid**
- **Many OS platforms**
- **Takes advantage of Oracle Database scalability**

Essbase

- **Multi-threaded**
- **Multi-processor**
- **Can be partitioned**
- **Multiple cubes can be referenced via a "capstone" cube**
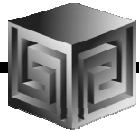- **Windows and Unix**

Writeback Handling

Oracle OLAP

- **Supported in Excel add-in and BI Beans**

- **Multi-user**

- **Has session-specific data**

- **Allows non-destructive "What If"**

Essbase

- **Built into Excel addin**

- **Built into SmartView**

- **Built into Web Analytics**

- **Multi-user**

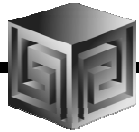- **Changes must be committed to be visible to user**

Security

Oracle OLAP

- **Cell-level security via PERMIT command in 9i, 10g (read and write)**

- **GUI administered in 11g**

- **Authentication handled by Oracle database (can be external)**

Essbase

- **Cell-level security (read and write)**

- **Catalog in Essbase controls access**

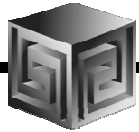- **Essbase Authentication or allows external or custom authentication**

Administration

Oracle OLAP

- **Administered via Oracle database tools and AWM front end**
- **Submit batch jobs same as Oracle DB**

Essbase

- **Designed for LoB managers (not IT)**
- **Administered via Essbase Administration Services**
- **Essbase Studio (new)**
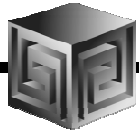- **Jobs via MaxL scripts**

Access to data

Oracle OLAP

- Excel Add-in
- Discoverer OLAP
- OBI EE
- BI Publisher
- Next version of Answers will have better interface

- Any SQL reporting tool
- Java OLAP API
- BI Beans

Essbase

- Excel, Word, Powerpoint
- SmartView
- Hyperion Visual Explorer
- OBI EE
- BI Publisher via OBI EE
- Next version of Answers will have better interface
- Hyperion Ent. Perf. Mgmnt.
- Web Analysis
- Essbase APIs (Java, C, VB, VBA)

Pricing*

Oracle OLAP
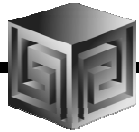
- **$400 per user (min 25)**
- **$20,000 per processor**

Essbase

- **$2500 per user (min 25)**
- **$160,000 per processor (min 4)**

Oracle Database EE

- **$800 per user (min 25)**
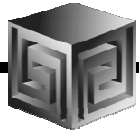- **$40,000 per processor**

Oracle Positioning

Hyperion Essbase Performance Management		Oracle Database OLAP Option Enhanced Data Warehousing

Oracle OLAP

- **Customer owns Oracle DB**
- **DW accelerator**
- **SQL access**
- **Bought by IT**
- **Managed by IT**

Essbase

- **Customer desires openess**
- **Financial analysis**
- **Excel and Hyperion access**
- **Bought by LoB**
- **Managed by LoB**

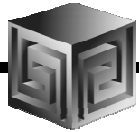Vlamis View: Show both and let customer decide

Why Each System

Oracle OLAP

- **Integrated with Oracle DB**
- **Integrated security**
- **Integrated administration**
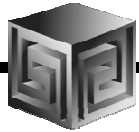- **Generally preferred by IT**
- **Lower price point**

Essbase

- **Separate system**
- **Independent security**
- **Independent administration**
- **Generally preferred by LoB**
- **Finance comfortable with Excel frontend**
- **Integrated with Hyperion Ent. Perf. Mgmnt. and Hyperion Planning**

Client Scenarios

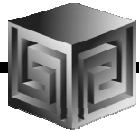- Client has existing Oracle warehouse or data mart

- Client has heterogeneous data from multiple databases and systems

- Client has existing Essbase hybrid that is performing poorly

Scenario #1

- **Already has Oracle data warehouse or data mart**

- **Needs better performance**

- **Needs analytics like time series analysis, rankings, forecasting etc.**

- **May need to use existing SQL reporting tools**
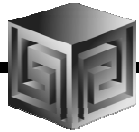
- **Well-defined needs**

Scenario #1 - Our Answer
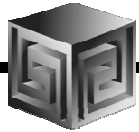
Oracle OLAP is a good fit here!

- **11g can accelerate existing star schema data warehouses with minimal effort**
- **Can leverage existing DBA and developer skills**
- **SQL access, even for 10g, is easy to implement and use**
- **Integrates with Oracle security**
- **Can use existing Oracle BI front-ends (OBIEE, Discoverer, Excel, BI Beans, Apex etc.)**

Scenario #2

- **No data warehouse on Oracle platform**
- **Several different data sources (heterogeneous)**
  - ❑ **Flat files**
  - ❑ **Relational, Oracle and non-Oracle**
  - ❑ **ODBC data sources**
  - ❑ **SAP BW**
- **Need a simple front-end, like MS Office**
- **May not have access to highly technical staff**
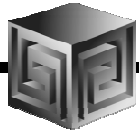- **May need financial savvy based solution**

Scenario #2 - Our Answer

Oracle Essbase

- **Essbase has better support for heterogeneous data sources**
- **Easier to use by non-technical business users**
- **Better solution for finance oriented LoBs**
- **Can be separate from company IT**
- **Integrates tightly with Microsoft Office**
- **Easier integration with MS security and other non-Oracle security models**
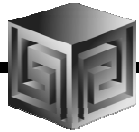- **Integrates with Hyperion Performance Management**

Scenario #3

- Already have Oracle DB and Essbase
- Have or want to implement hybrid
- Large amount of data
- Want wider range of front-end tools
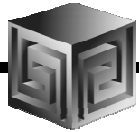- Need high performance, SQL access for some users

Scenario # 3 - Our Answer

Use Both Together!

- Exposure to wider breadth of front-ends
- Top half in Essbase cubes
- Bottom half in relational (sped up with Oracle OLAP)
- Best of both worlds, future proofed!
- Optimize storage within each environment
- Accelerate Essbase hybrid implementations
- Metadata should be integrated to avoid dual maintenance
- Vlamis has found major performance improvements

Oracle OLAP and Essbase Similarities

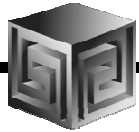- Both are very capable multi-dimensional engines

- Both calculate data efficiently

- Both allow for OLAP applications

- Both efficiently handle calculations

- Both are true multi-dimensional solutions (not ROLAP)
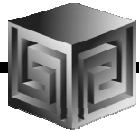
- Both are easily incrementally updated

Questions to Ask

- **Do you have an existing data warehouse or data mart?**
  - ❑ **Are you having performance problems?**
  - ❑ **Is it Oracle based?**
- **What are your data sources?**
  - ❑ **Oracle**
  - ❑ **Microsoft**
  - ❑ **IBM**
  - ❑ **Flat files**
  - ❑ **Spreadsheets**
- **Do you already have a reporting solution?**
  - ❑ **Oracle products? _____**
  - ❑ **Others _____**
- **Do you have financial reporting requirements?**
- **Do you have planning and/or budgeting requirements?**
- **Do you have IT support?**

Conclusions on Multi-dim engine

- **Both Oracle OLAP and Essbase are go-forward strategies for Vlamis Software and Oracle**
- **Some will prefer one over the other**
- **Let user preference determine which is "sold"**
- **Essbase has strong history as independent choice by Line of Business customers**
- **Essbase is "middleware solution"**
- **Oracle OLAP is integrated with Oracle DB for Oracle DB-centric customers**
- **Oracle OLAP as a "data warehouse accelerator"**
- **Look at both and decide: OLAP, Essbase, or BOTH**
- **Let Vlamis Software help you choose**

Conclusions on OracleDB vs Open

- **If IT-led centralized approach, go with Oracle**

- **If Open architecture important, go with Open**

- **Pay a price for flexibility of Open approach**
  - ❑ Similar to cell phone carrier paying you for contract

- **Oracle will continue both lines**

- **Will see additional openness in Oracle DB approach over time**

- **Will see more emphasis on applications on middleware solution from Oracle (e.g. Hyperion, BI Apps)**

Q & A

QUESTIONS
ANSWERS

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See **www.vlamis.com/blog** and

http://www.oracle.com/solutions/business_intelligence/docs/understanding-an-olap-solution.pdf

www.oraclebiwa.org for user group

Oracle BI, Oracle OLAP, Essbase Compared

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