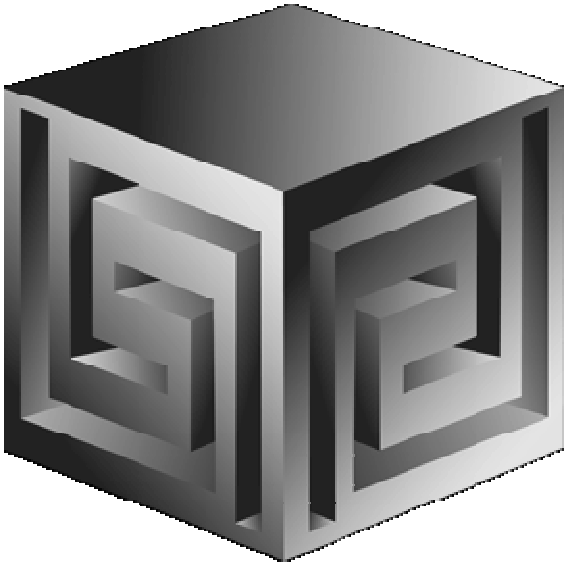
Hands-On with OLAP 11g for Smarter and Faster Data Warehouses

BIWA 2008



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Vlamis Software Solutions, Inc.

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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
  - Multi-dimensional applications
- Delivers
  - Design and integrate BI and DW solutions
  - Training and mentoring
- Expert presenter at major Oracle conferences

Mark Thompson, Sr. Consultant
Vlamis Software Solutions

- 24 years as BI developer (DSS, EIS)
- Oracle OLAP / Express since 1984
- Joined Oracle Consulting 1997 (OLAP)
- Joined Vlamis Software Solutions 2006
- Consultant and Trainer
- Presenter at Open World, IOUGA

Vlamis BIWA Presentations

Presenter	Time	Title
Dan Vlamis, Shyam Nath	Tue 8:30	BIWA Opening Remarks
Chris Claterbos	Tue 4:10-5:00	Having your Business Intelligence the Way You Want It!
Dan Vlamis	Tue 5:10	Lightning round 5-min introduction to Vlamis Software
Tim Vlamis, Dan Vlamis, Mike Nader	Wed 9:00-11:00	Hands on with Essbase, Smartview, and Hyperion Visual Explorer
Peeyush Shukla, Chris Claterbos	Wed 10:10-11:00	Investment Research and Portfolio Mgmt Analytics using Oracle OLAP
Mark Thompson	Wed 11:10-13:50	Hands on With Oracle OLAP 11g for Smarter and Faster Data Warehouses

OLAP Presentations - Tuesday

Presenter	Title
Ray Roccaforte	Keynote: Oracle 11g for Data Warehousing
Marty Gubar	Building dashboards with APEX and OLAP
Peter Scott	Cube-organized Materialized Views for Summary Management
Bud Endress	Cube-organized Materialized Views for Enhanced Performance
Chris Claterbos	Having your Business Intelligence the way you want it.

OLAP Presentations - Wednesday

Presenter	Title
Marty Gubar	Combining Data Mining and OLAP
Peeyush Shukla Chris Claterbos	Investment Research and Portfolio Management Analytics using Oracle OLAP
Francisco Silva	Combining OLTP and OLAP in one BI system
Mark Thompson	Hands-on with Oracle OLAP 11g
Francisco Silva	Building reports with OBIEE on Oracle OLAP (3:00 Room 105)
Daniel Liu	OLTP and OLAP in the same physical database (4:00 Room 103)
Marty Gubar	Best Practices - OLAP Performance Tuning (4:00 Room 102)

Usama Fayyad - Keynote

- Harrah's
- Competitive Advantage from Analytics

- What about FASTER Analytics?
- 10 queries per day vs. 100, 200, 300
- "Speed of Thought"

- That's the power of Oracle OLAP!

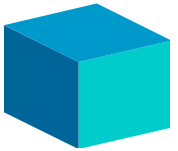
Relational and OLAP in One Place Oracle 11g

- Relational and OLAP are complementary technologies

RDBMS

- Tables/Rows
- Very Large Volumes (TB/PB)
- Transactional
- Simple / Moderate Queries

OLAP



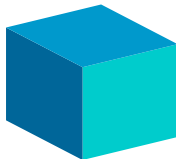
- Arrays
- Moderate Volumes (GBs)
- Aggregated
- Complex Queries

Oracle OLAP 11g
Relational and OLAP!

- Oracle OLAP is the only OLAP engine on the market that is...
  - ✓ fully embedded in a database
  - ✓ fully accessible via SQL

- Therefore, it can provide advanced calculation capabilities to ANY business application

OLAP



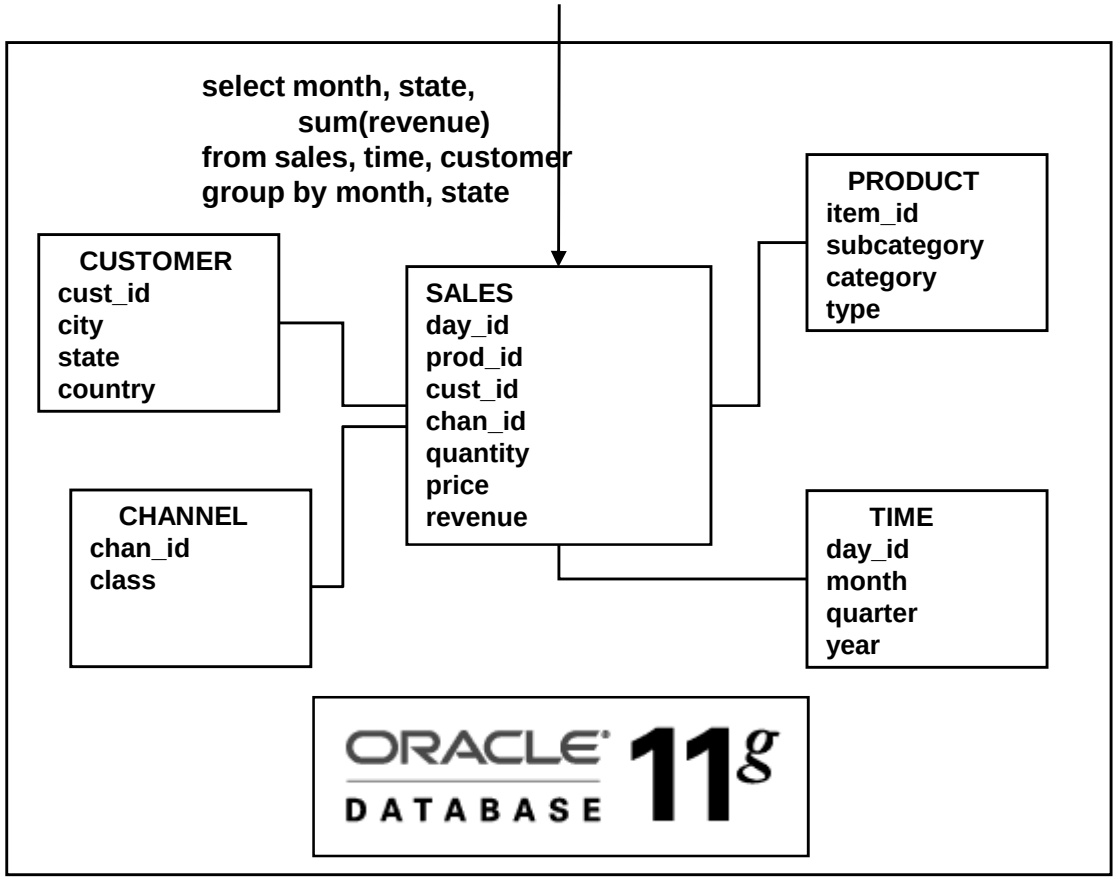
Enough talk...

Let’s build a cube!

Welcome back...

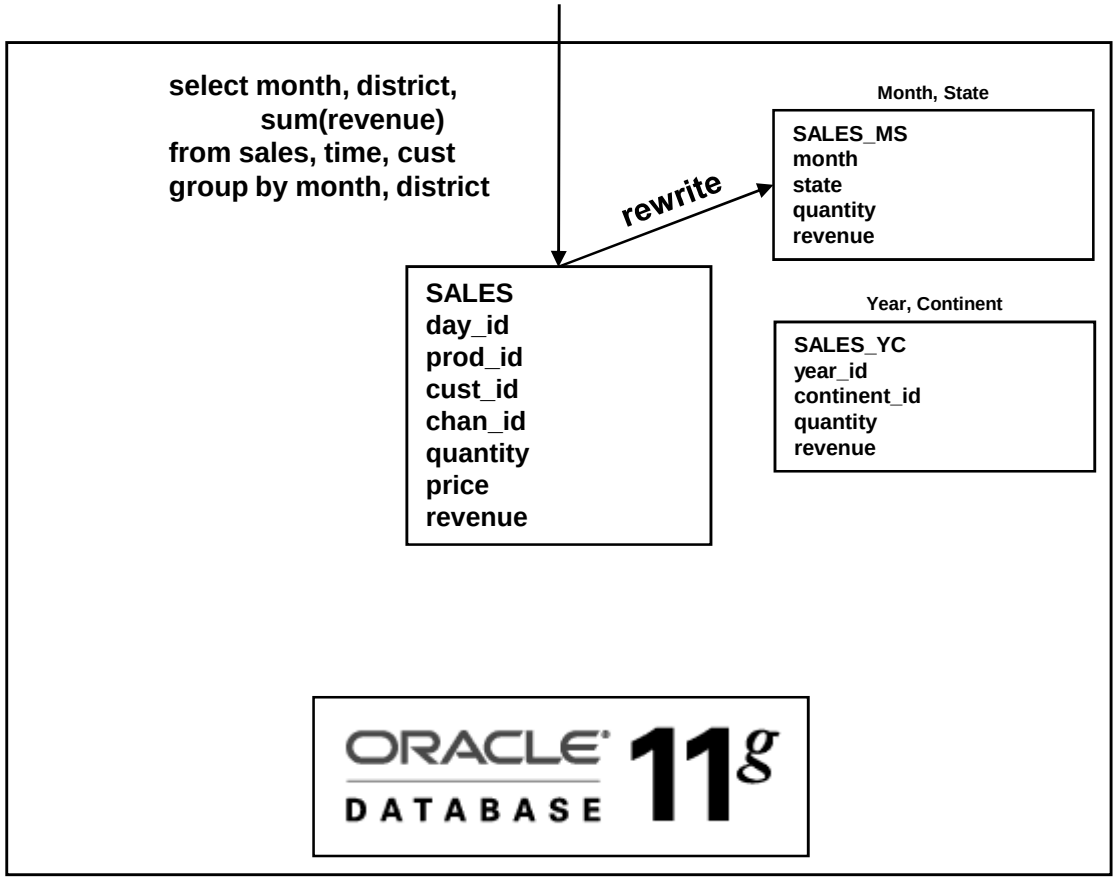
Continue, starting with Exercise 3 (Geography Dimension)

Traditional Materialized Views
Typical MV Architecture Today



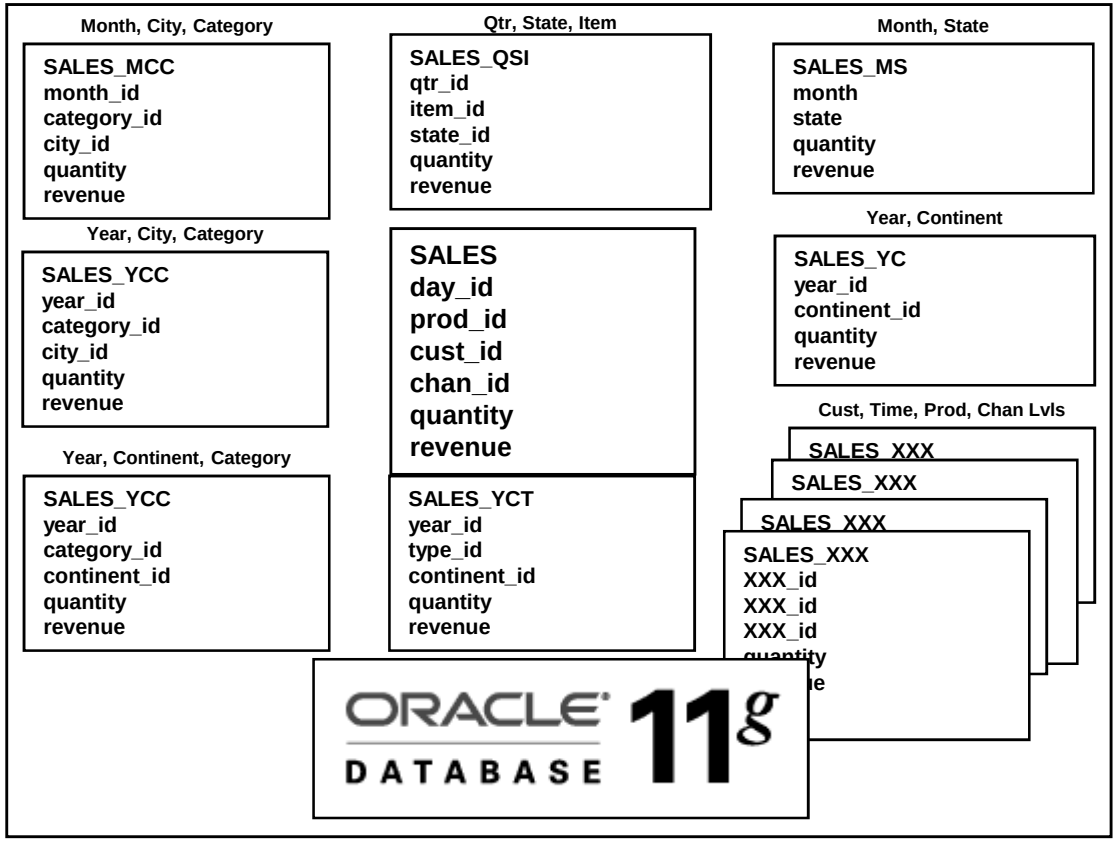
- Query tools access star schema stored in Oracle data warehouse
- Most queries at a summary level
- Summary queries against star schemas can be expensive to process

Traditional Materialized Views
Automatic Query Rewrite



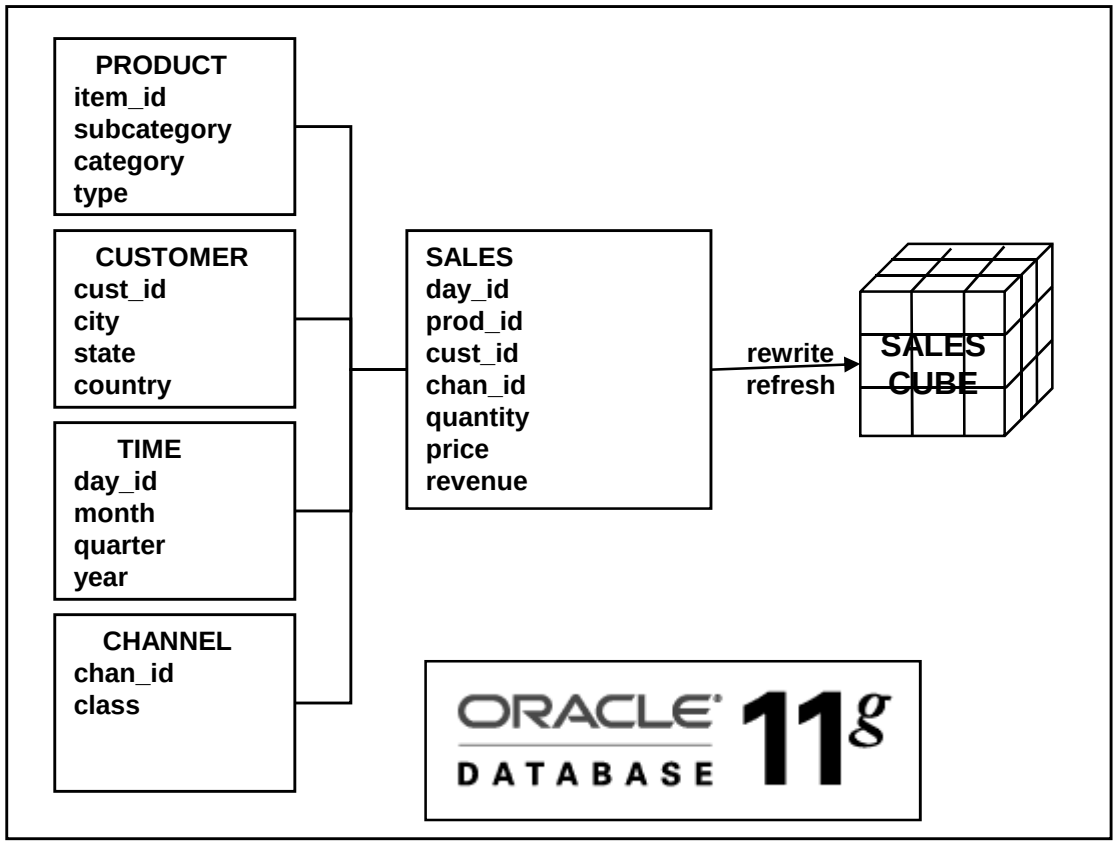
- Most DW/BI customers use Materialized Views (MV) today to improve summary query performance
- Define appropriate summaries based on query patterns
- Each summary is typically defined at a particular grain
  - Month, State
  - Qtr, State, Item
  - Month, Continent, Class
  - etc.
- The SQL Optimizer automatically rewrites queries to access MV's whenever possible

Traditional Materialized Views
Challenges in Ad Hoc Query Environments



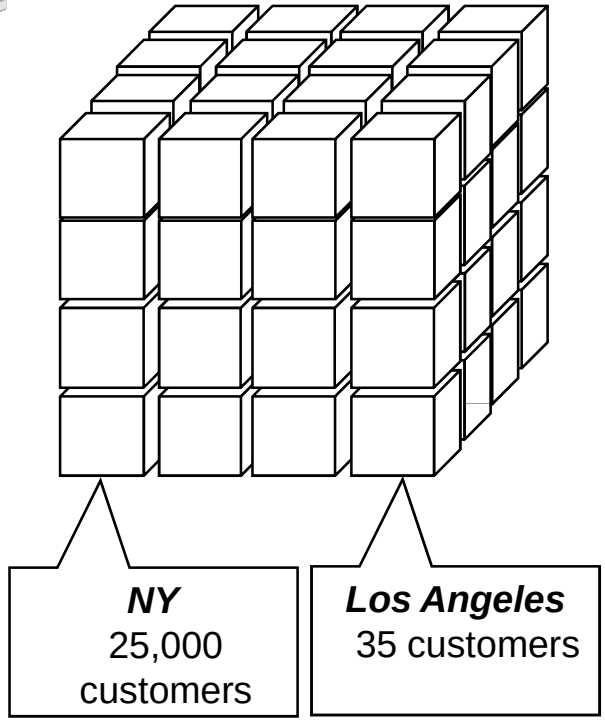
- Creating MVs to support ad hoc query patterns is challenging
- Users expect excellent query response time across any summary
- Potentially many MVs to manage
- Practical limitations on size and manageability constrain the number of materialized views

Cube-based Materialized Views
Breakthrough Manageability & Performance



- A single cube provides the equivalent ***of thousands of summary combinations***
- The 11g SQL Query Optimizer treats OLAP cubes as MV's and rewrites queries to access cubes ***transparently***
- Cube refreshed using standard MV procedures

Cost Based Aggregation
Pinpoint Summary Management



Precomputed

Computed when queried

- **Improves aggregation speed and storage consumption by pre-computing *cells* that are most expensive to calculate**
- **Easy to administer**
- **Simplifies SQL queries by presenting data as fully calculated**

One Cube, Many Uses

- One cube can be used as
  - A summary management solution to SQL-based business intelligence applications as cube-organized materialized views
  - A analytically rich data source to SQL-based business intelligence applications as SQL cube-views
  - A full-featured multidimensional cube, servicing dimensionally oriented business intelligence applications

Faster and Smarter

- Faster to aggregate – agg just what's needed
- Faster to maintain – incr. refresh, skip-level
- Faster to retrieve data – cube structure
- Simpler to manage – 1 materialized view
- Smarter in calcs – interrow calculations
- Smarter agg rules – centrally managed
- Smarter maintenance – in central repository
- Smarter forecasting – built into database

Further Information

- Oracle BI Sales
  - http://www.oracle.com/bi
- Oracle BI Technical
  - http://www.oracle.com/technology/tech/bi/index.html
- Oracle BI EE on top of Oracle OLAP
  - Collaborate 208: Using Oracle BI EE with Oracle OLAP Cubes on www.vlamis.com/presentations
- VMWare image with Demo environment
  - Send dvlamis@vlamis.com an email
- Oracle OLAP and AWM Sales
  - http://www.oracle.com/solutions/business_intelligence/olap.html
- Oracle OLAP Technical
  - http://www.oracle.com/technology/products/bi/olap/index.html

QUESTIONS?