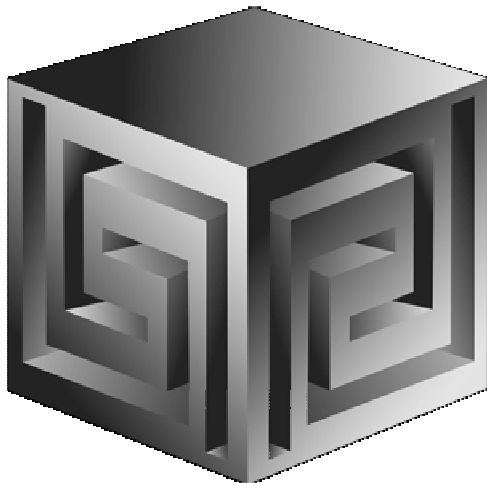


# **Developing Advanced Thin Client Applications with BI Beans**

## **OracleWorld 2004 Session #1230**



**Chris Claterbos**

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# Vlamis Software Solutions, Inc.

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- **Founded in 1992 in Kansas City, Missouri**
- **Oracle Certified professional services company**
- **Provides business solutions to international and domestic clients based on Oracle technologies.**
- **Authorized software reseller**
- **Creator of the first Oracle 9i Business Intelligence and Analytics tool.**
- **Core competency include:**
  - Certified designers,**
  - Developers,**
  - Implementers**
  - Nationally recognized technical authors, speakers and publishers.**

# Who are we?

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## • Chris Claterbos, Consulting & Development Manager

- ❑ DBA and applications developer for Oracle products, since 1981.
- ❑ Beta tester and early adopter of - including Oracle 8i and 9i, 9i OLAP, JDeveloper and BIBeans, Oracle 9IAS, Portal (formerly WebDB), and Reports.
- ❑ Speaker and author.
- ❑ IOUG Focus Area Manager for Data Warehousing and BI
- ❑ Utilized Oracle SQL, PL/sql, Oracle Forms, Reports, Discoverer, Express, Express Objects, Web Objects, OWB, Designer and Oracle Applications (since version 7).

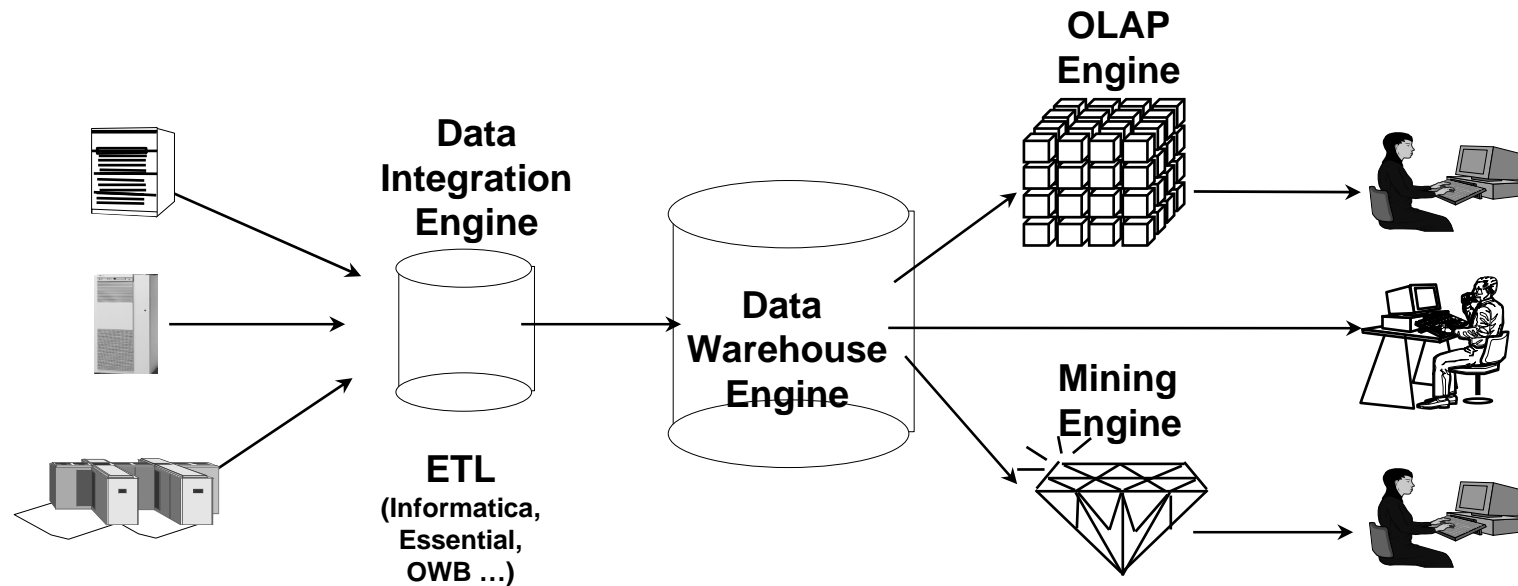


# **In the Past**

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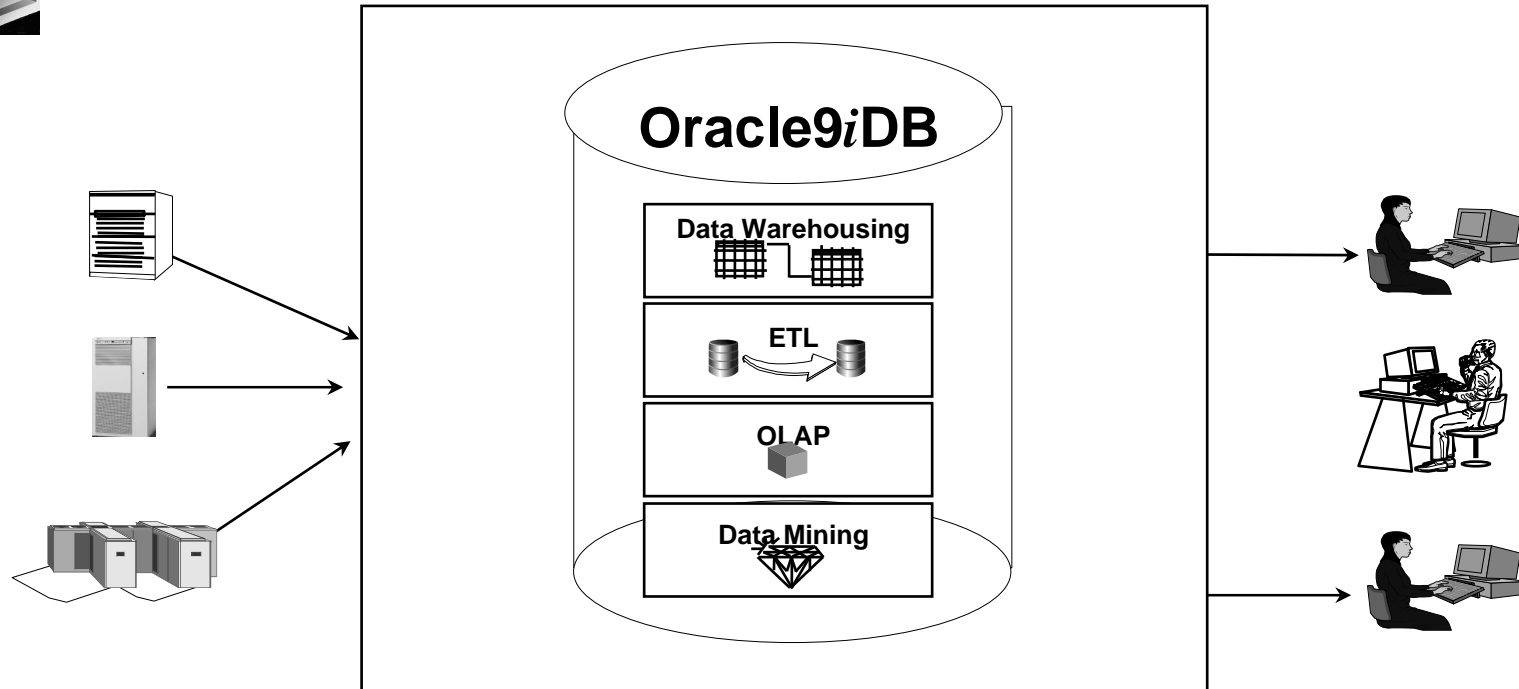
- **Previous development of BI and OLAP Applications required proprietary development environment**
- **Each deployment model required a different tool**
- **Development effort very labor intensive**
- **Concept to Deployment takes long time**
- **Requires specialized skills**

# Business Intelligence the Old Way



- Special purpose engines for differing tasks
- Metadata migration tools ease replication
- User interfaces generally different for different tools

# BI the New Way: Oracle 9iDB



- Single business intelligence platform
  - Reduce administration, implementation costs
  - Faster deployment & Improved scalability and reliability

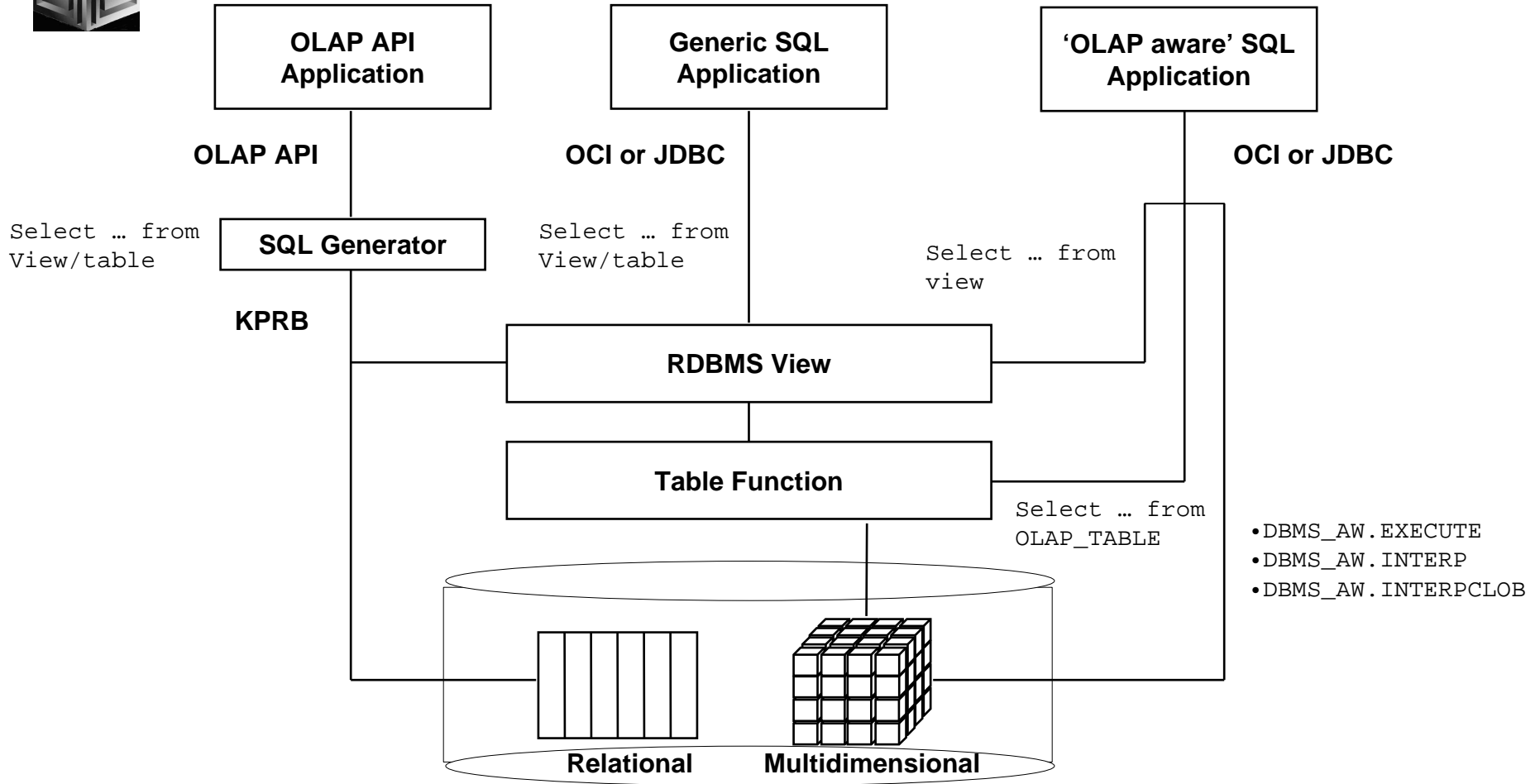
# Oracle OLAP – What Is It?

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- Advanced analytics
- Integrated in RDBMS
- Common Metadata
- Easy to develop
- Easy to use
- Facilitate collaboration
- Flexible deployment
- Scalable and performant

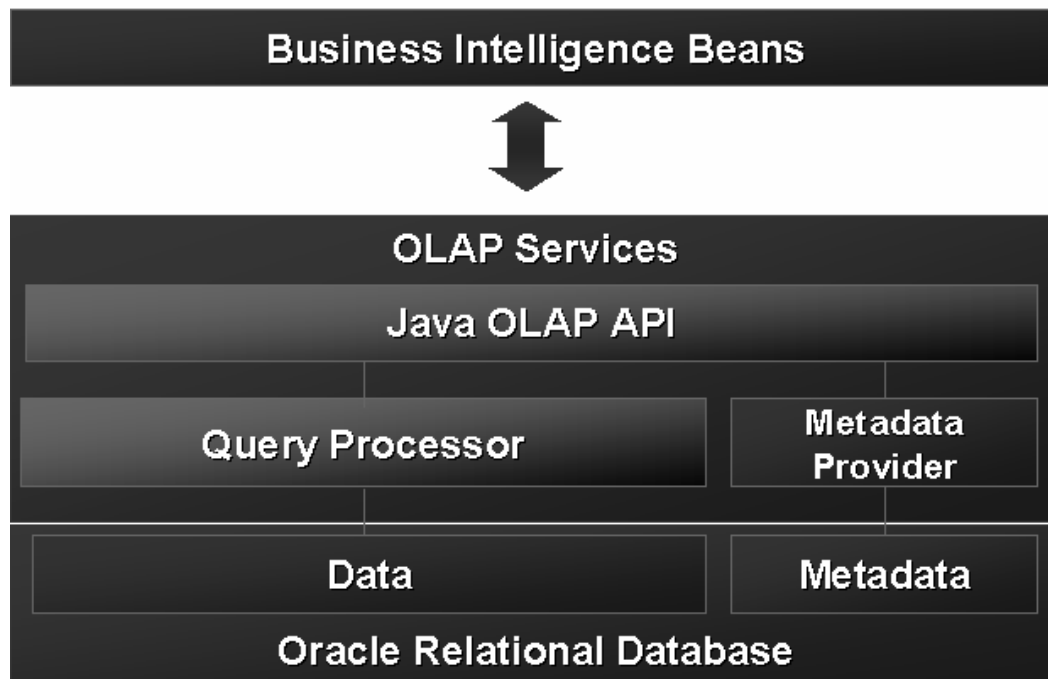
# Query Methods







# Oracle OLAP Architecture



**Rapid application development**  
**Analysis ready**

**Java OLAP API**  
**Predictive analysis functions**

**Scaleable data store**  
**Integrated meta data**  
**Summary management**  
**SQL analytic functions**

# Clarifications \*



- **BI Products with 10g in Names will run using 9.2.0.5 DB and above (i.e. do not require 10g Database!)**
- **Minimum DB to run TODAY is 9.2.0.5 - 9.2.0.6 is most current. 10.1.0.3 also...**
- **New Discoverer 10g now supports OLAP**
- **New Worksheet Add-in supports 9.2.0.5 +**



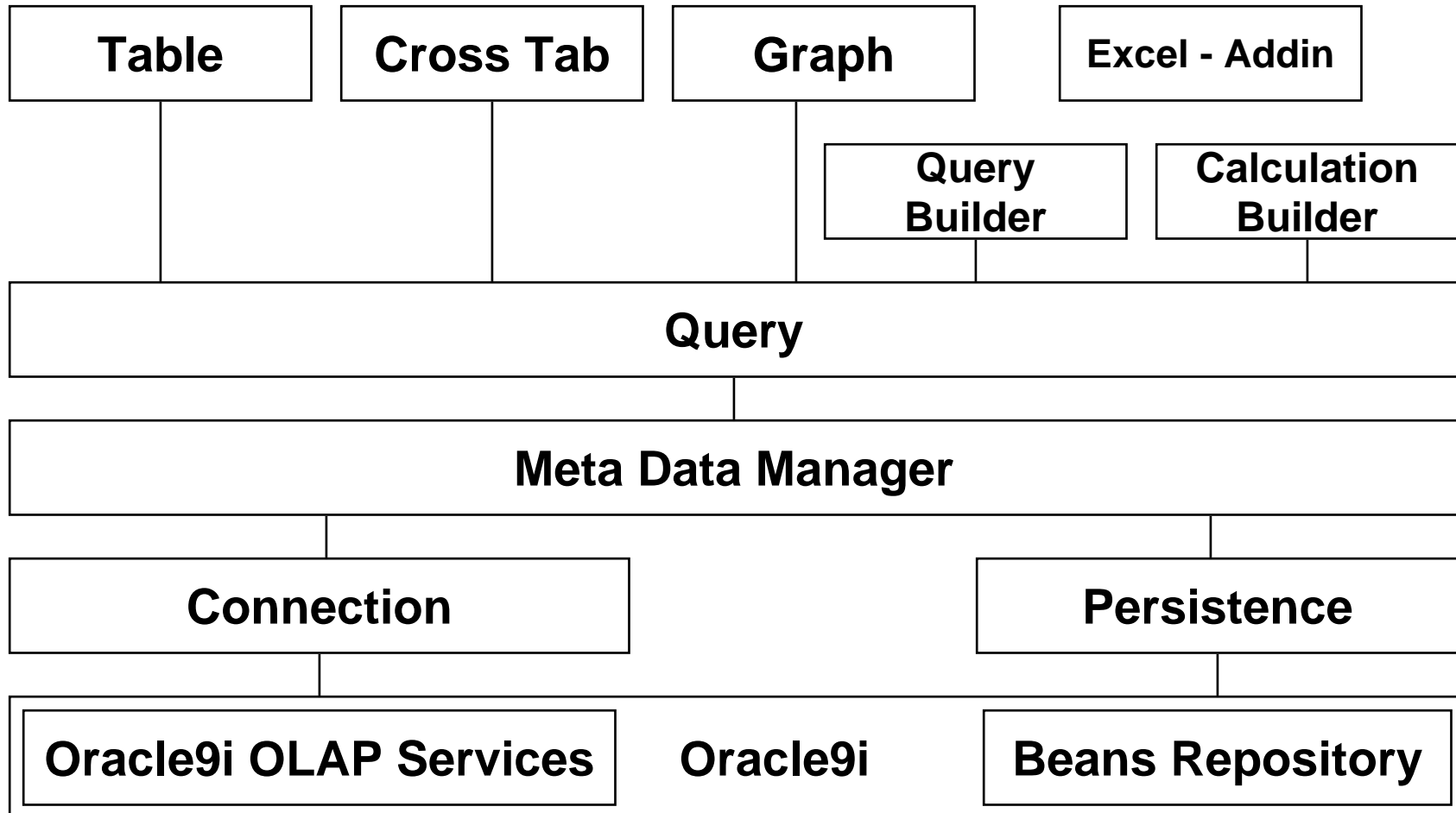
# Deployment Models

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- **Deploying BI Beans Apps**
  - Thick Java Client – feature Rich!**
  - Thin Client – More limited**
    - **JSPs**
    - **Servlets**
    - **UIXml**
    - **Oracle Portal Portlets**
  - Reports OLAP plug-in (built into 10g Reports)**
  - Excel Add-in**
  - Discoverer 10g R2**

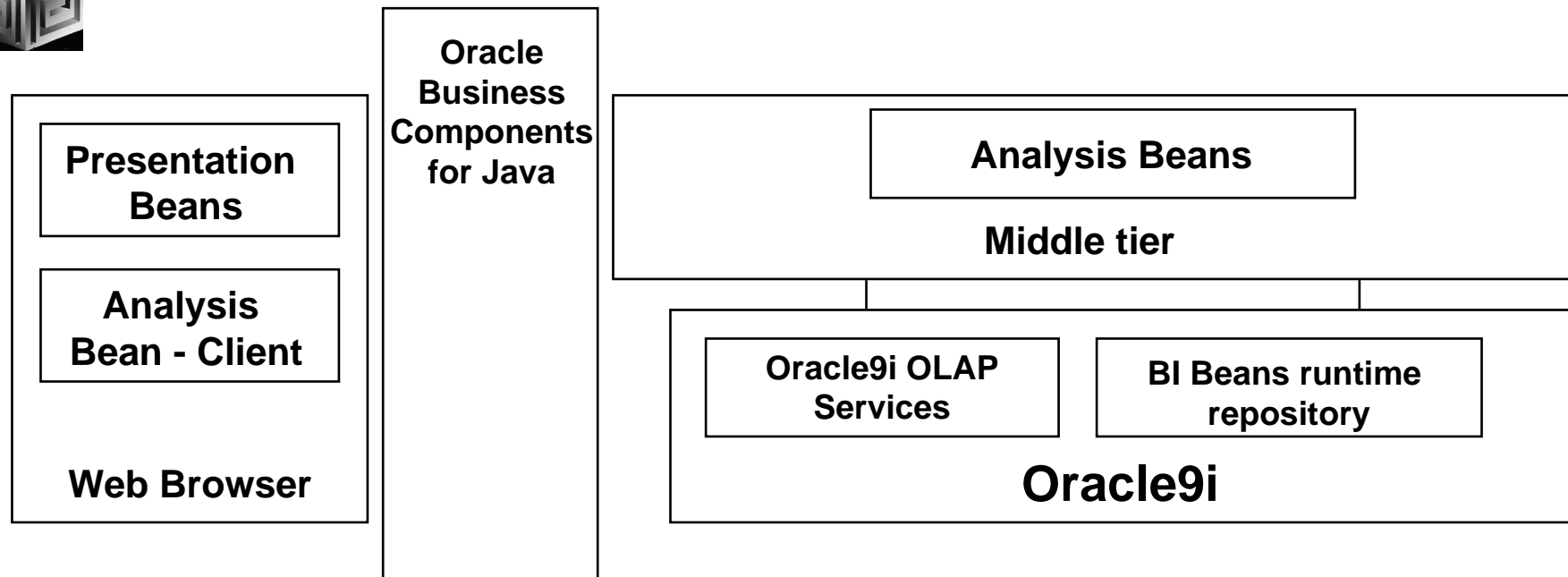


# Business Intelligence Beans





# Architecture: Java clients

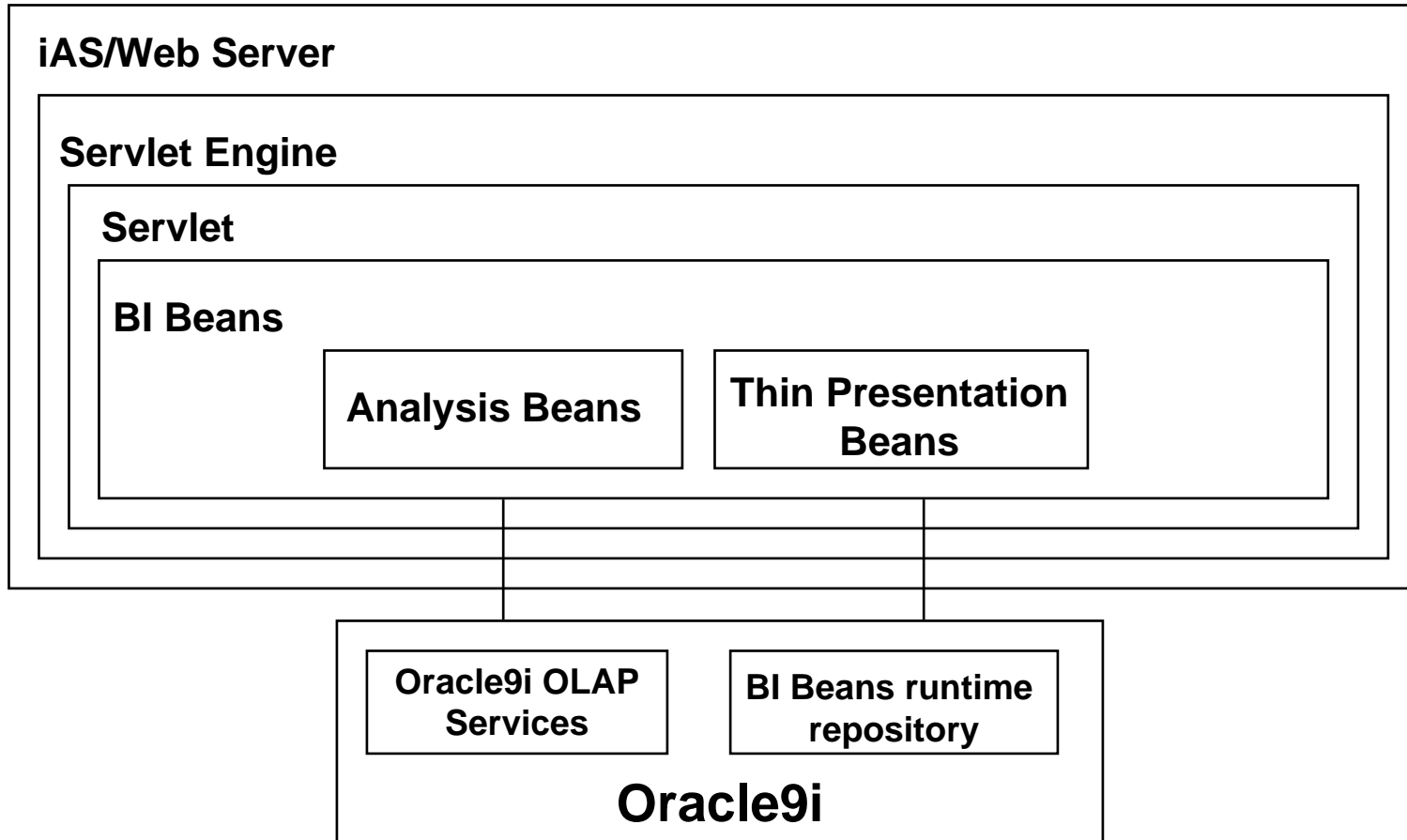


## BI Beans use of Oracle Business Components for Java:

- \* communications protocol across tiers
- \* deploying iBeans on the middle tier (EJB, 8i)
- \* insulates application developer from “application plumbing” related to deployment



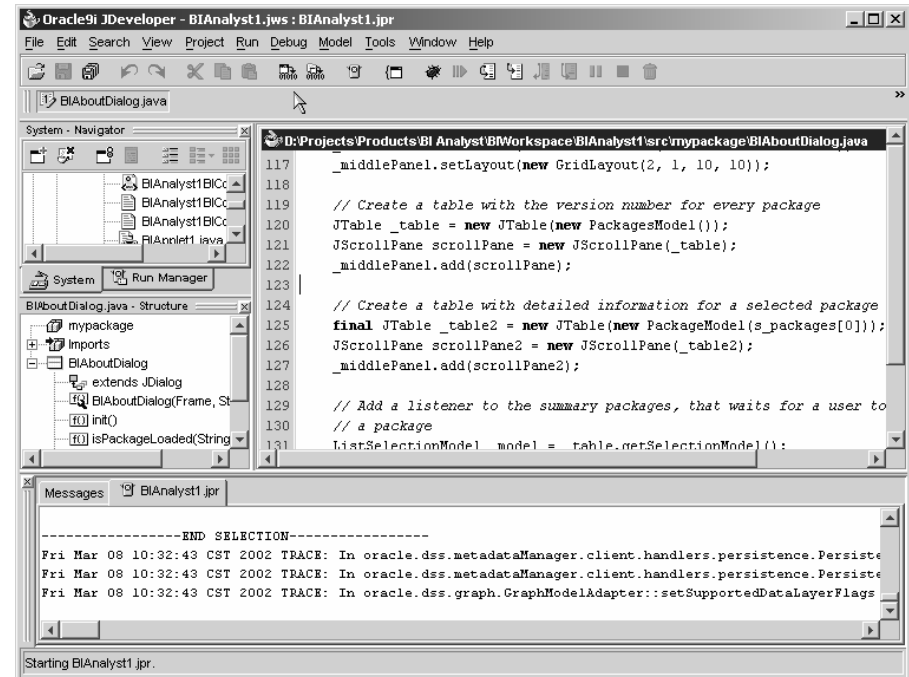
# Architecture: Thin client





# JDeveloper Integration

- **Single Development tool for Relational and OLAP development**
- **Key design-time integration objectives**
  - Use JDeveloper concepts; extend when necessary
  - Live data access
  - Run application objects
  - Extensive use of Wizards to support rapid development
  - Leverage BI Beans runtime repository to enable multiple deployment options





# JDeveloper Environment

**System Navigator**

**Structure Window**

**Log Window**

The screenshot displays the Oracle9i JDeveloper IDE interface. At the top is the menu bar (File, Edit, Search, View, Project, Run, Debug, Model, Tools, Window, Help) and a toolbar. Below the toolbar is the 'System - Navigator' window showing a project tree with files like 'vssbaBIDesigner', 'AboutVSSPanel', 'application-clien', 'BIApplication1.java', 'vssba1\_deploy', 'vssbaBIDebug1', 'vssbaBIDebug1', and 'vssbaBIDebug1'. Below this is the 'BIApplication1.java - Structure' window showing a class hierarchy with 'VIEW\_TYPE\_GRAPH', 'xYLayout1', 'GraphLayoutForWizard', 'PanelDialog', 'extends JDialog', 'implements ActionLi', 'PanelDialog(Frame, :', 'actionPerformed(Ac', '\_sBorder', and '\_sBorderButtons'. The main 'Code Window' displays Java code for 'BIApplication1.java' with line numbers 1140-1158. The code includes method calls like 'cancelButton.addActionListener(this)', 'cancelButton.registerKeyboardAction(this, KeyStroke.getKeyStroke(KeyEvent.VK\_ESCAPE, 0), JComponent.WHEN\_IN\_FOCUSED\_WINDOW);', 'getContentPane().add(buttonPanel, BorderLayout.SOUTH);', 'setResizable(false);', 'pack();', and a 'public void actionPerformed(ActionEvent e)' method with conditional logic. At the bottom is the 'Messages - Log' window showing compilation output: 'Compiling...', 'D:\oracle\jdev9i\jdev\bin\ojc.exe -noquiet -warn -nowarn:486 -nowarn:487 -encoding Cp1252 -g -d D:\Projects\vssba\vssvba compiling D:\Projects\vssba\vssvba.ws\vssba\src\vssba\BIApplication1.java Successful compilation: 0 errors, 0 warnings.', and 'Successful compilation: 0 errors, 0 warnings.'

**Component  
Toolbar**

**Code  
Window**





# **New Version Coming!**

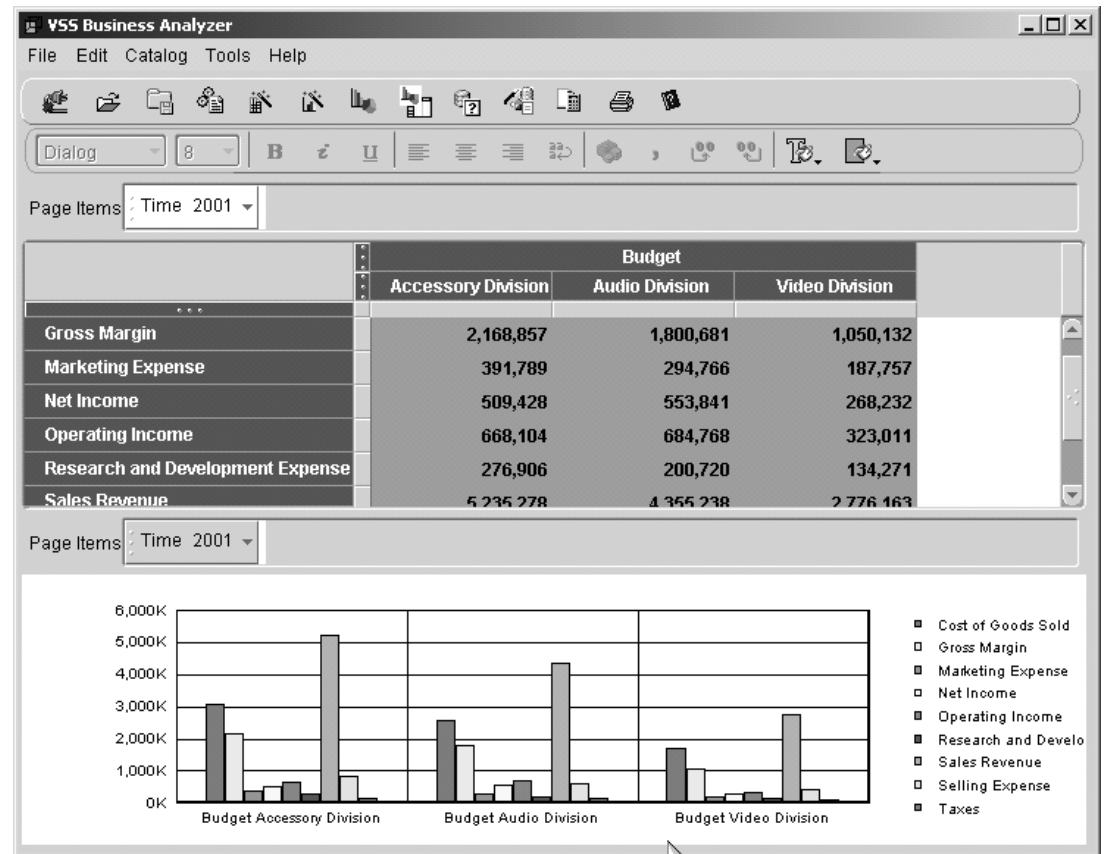
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- **BI Beans 10g just Released!**
- **Increased capabilities, most significantly in Thin Client**
- **Thin Client can now do what Thick Client can**
- **New Wizards – wizard driven creation of JSP!**
- **New Thin Client Toolbars**
- **Formatted export to Excel**

# What Can We Really Do?



- VSS Business Analyzer is an example of what can be done
- Developed in less than 4 months!
- Comprehensive Application that provides Ad-Hoc Query capabilities in both Thick and thin clients
- Utilizes a central report catalog available to all client types
- Provides an extensible framework for more complex applications

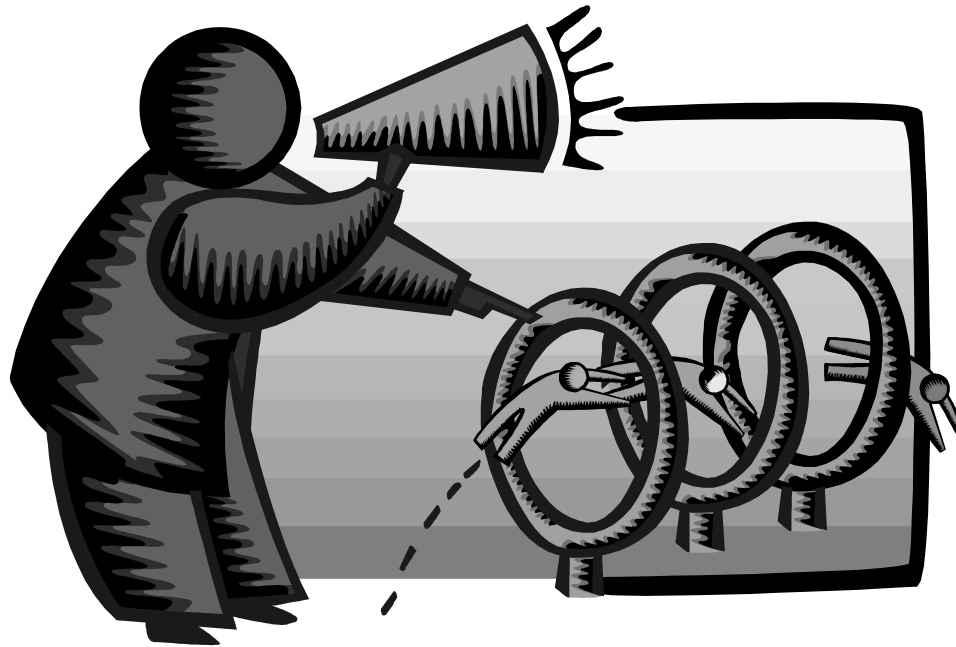


See [www.vlamis.com](http://www.vlamis.com) for more info...



# Demonstrations

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# BI Beans Designer Settings



BI Beans Settings

Design Settings - Project1BIDesigner1 | Run Settings - Project1BIConfig1

Specify your design settings. These settings are used when creating data-aware Business Intelligence objects in JDeveloper.

Data Source

Select the OLAP data source that you want to work with:

OLAP Connection: OLAPConnection1

New...  
Edit...  
Test

Catalog

Specify a directory for storing Business Intelligence objects when developing your application in JDeveloper. You can copy these objects to a Catalog in an Oracle database when deploying your application.

Directory: 3|Tutorial\Project1\src\bidefs\Project1BIDesigner1

Browse...

Help OK Cancel

- **Container for Business Intelligence Objects**
- **References information needed to connect:**
  - to Oracle 9i OLAP**
  - and the BI Beans Catalog.**
- **Design Settings - Lets you view and edit settings in your BI Designer object**
- **Run Settings - Lets you view and edit settings in your BI Configuration file**

# Connection Wizard



OLAP Connection Wizard - Step 1 of 4: Type

Type Authentication Connection OLAP Server Instance

Each connection is identified by a name. It must be a valid java identifier and unique.

Connection Name:  
OLAPConnection1

Connection Type:  
Oracle (JDBC)

Help

Walks you through creating an Catalog Connection

- Define Connection Name and Type
- Login and Password

OLAP Connection Wizard - Step 2 of 4: Authentication

Type Authentication Connection OLAP Server Instance

A username and password is usually used to authenticate your connection. Enter your username and password below if one is required. If you would like your password to be deployed with the connections.xml file with your projects, select Deploy Password.

Username:  
BIBDEMO

Password:  
\*\*\*\*\*

Role:

Deploy Password

Help OK Cancel

# Connection Wizard



OLAP Connection Wizard - Step 3 of 4: Connection

Type Authentication Connection OLAP Server Instance

The host name uniquely identifies the computer on which the database server is installed. The database is listening on a specific TCP/IP port and has a unique service identifier (SID). Enter the details for your database connection below.

Driver: thin

Host Name: sun1

JDBC Port: 1521

SID: sun9i

Enter Custom JDBC URL:

Help

- Specify data source.

- Select and Test OLAP Connection

OLAP Connection Wizard - Step 4 of 4: OLAP Server Instance

Type Authentication Connection OLAP Server Instance

OLAP Server Instance: OLAPServer

Select an OLAP server instance:

- OLAPServer

Test OLAP connection

Status:

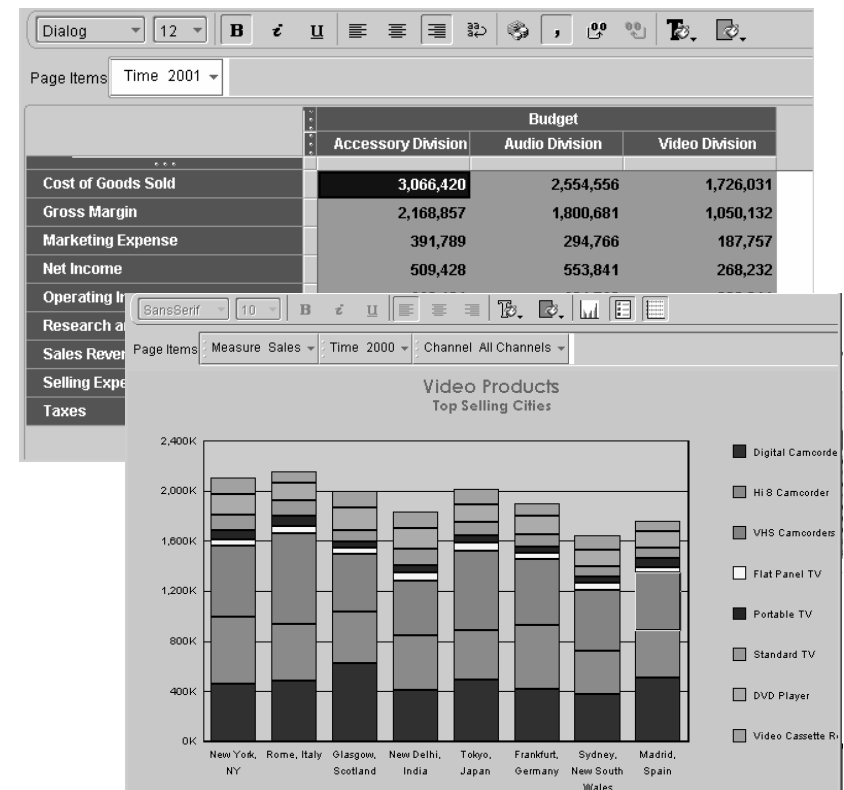
1 OLAP instances found!

Help OK Cancel



# Presentation Beans

- Provides common user interface across Oracle BI products
- Translate UI gestures into OLAP events
- Graph
  - Over 50 graph types supported
  - Customizers for modifying appearance
- Crosstab/Table
  - Cell level formatting
- View toolbar enables simple access to formatting capabilities
- Customers: Discoverer, Reports, Portal, CRM, Enterprise Planning and Budgeting, Balanced Scorecard
- ...





# Business Intelligence Wizards

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- **Specialized Wizards Built into JDeveloper 9i**
  - Connection Wizard**
  - Calculation Wizard**
  - Query Wizard**
  - Presentation Wizard**
  - Java Client Application Wizard**
  - Servlet (JSP) Application Wizard**



# JDeveloper BI Wizards



The screenshot displays the JDeveloper BI Wizards interface. The 'New' dialog shows the 'Business Intelligence' category selected. The 'BI Java Application Wizard - Step 3 of 3: Menu and Toolbar' dialog asks for menu and toolbar options. The 'BI Java Application Wizard - Summary' dialog shows the final configuration options.

**BI Java Application Wizard - Step 3 of 3: Menu and Toolbar**

Do you want to include a Menu in your application frame?  
 Yes

Select the top level menu items that you want to include in your application frame.

- File
- Tools
- Help

Do you want to include a Toolbar in your application frame?  
 Yes

**BI Java Application Wizard - Summary**

You have completed the BI Java Application Wizard.

You have selected the following options for your BI Java Application.

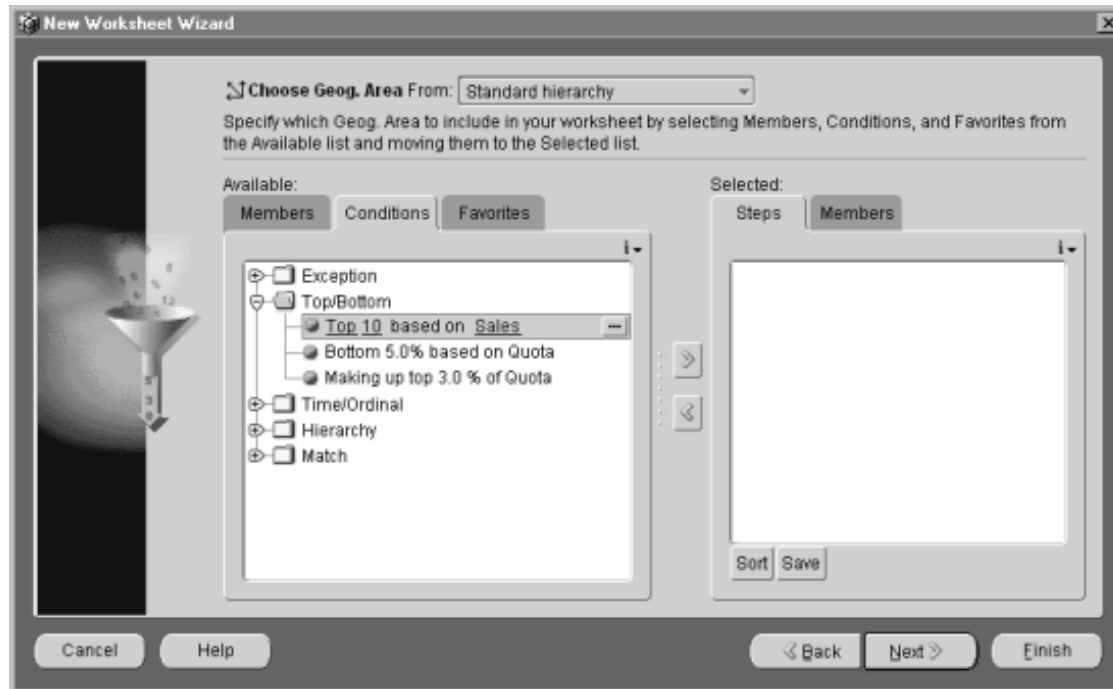
- BI Java Application
  - File
    - ./D:/Projects/vssba/vssvba.ws/vssba/src/vssba/BIApplication2.java
  - BI Designer
    - vssbaBIDesigner1
  - Display Presentation
    - No
  - Include Menu
    - File Menu
    - Tools Menu
  - Include Toolbar
    - Yes

Choose Finish to generate the BI Java Application.

	First Quarter			Second Quarter
	January	February	March	
Product	5,000	5,400	5,800	7,200
Direct	500	540	580	1,711



# Query Builder



- “Brains” behind the presentation beans
  - Data provider
  - Data navigation
  - Data selection
- QueryBuilder customizer
  - Enables end user to specify advanced queries using business terms - not SQL
  - Save favorite selections
- CalcBuilder
  - Wizard enables creation of new calculations, including: variances, ratios, time comparisons, and more

# Customizer



Crosstab Customizer - Step 1 of 3: Options

Options | Titles | Format | Style

Select options for your crosstab.

Show horizontal grid lines:

Show vertical grid lines:

3D gridlines

Show column headers

Show row headers

Row header style:

Inline

Outline

Sample:

	Q1	Q2	Q3	Q4
USA				
UK				
FR				
DE				
JP				

Help Apply

- Alter the look of your presentation.
- Add titles and footnotes.

Crosstab Customizer - Step 2 of 3: Titles

Options | Titles | Format | Style

Enter text for your crosstab titles.

Show Title Title Font...

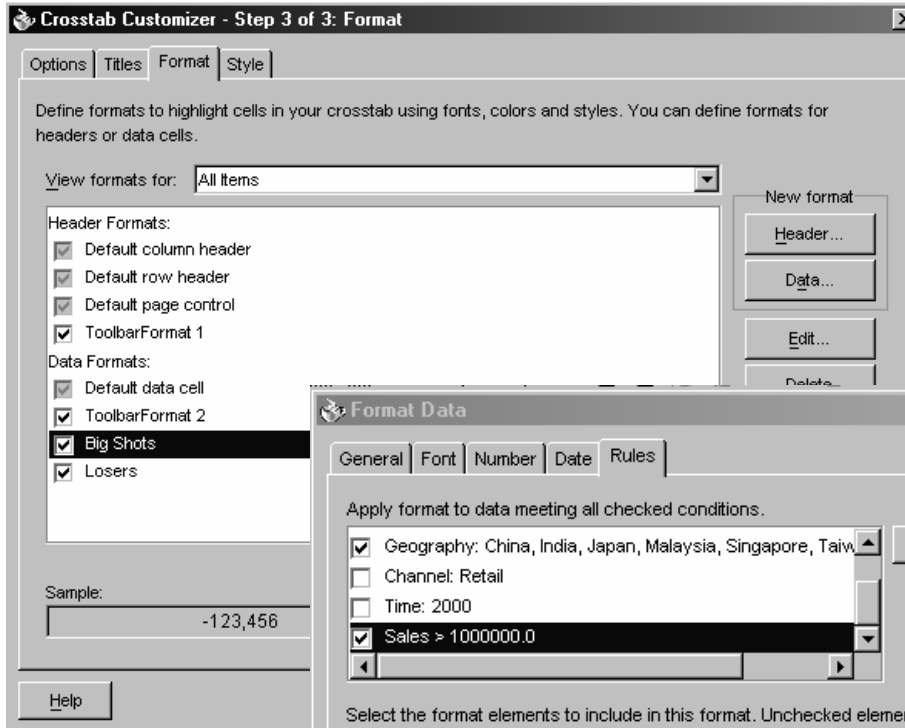
**Asian Sales Summary**

Show Subtitle Subtitle Font...

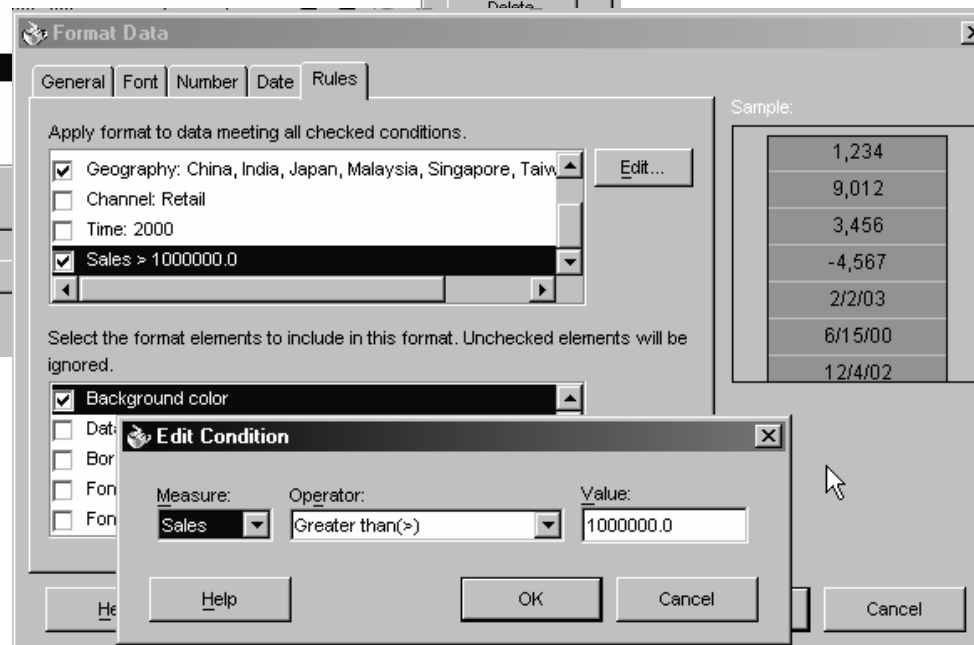
**Stoplight Report**

Show Footnote Footnote Font...

# Customizer



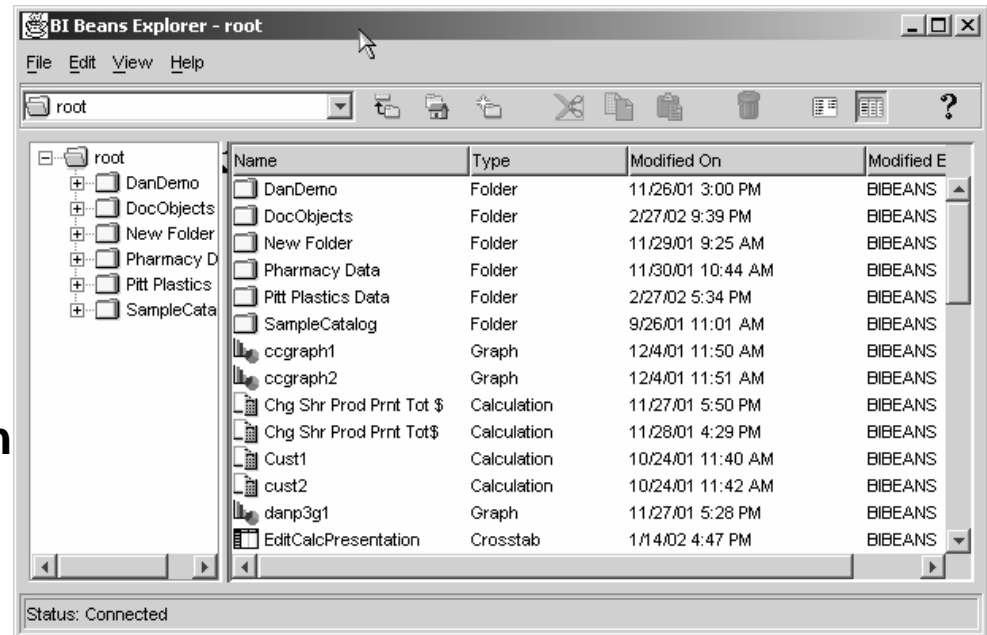
- Add data-driven formatting.





# Persistence Services – BI Catalog

- Enables end users to save personal analyses or share analyses with other users.
- Organizes information in folders
- Persisted objects include:
  - Crosstab, table and graph formatting
  - Entire queries or individual selections
  - Calculations
- Objects persisted in XML format
- Searchable





# Summary

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- **Analysis ready relational database**
  - Analytical functions
  - Scalable, manageable
- **Internet application deployment**
  - Java OLAP API
  - Business Intelligence Beans and JDeveloper
- **Open**
  - Java and CWM-compliant meta data
  - OLAP API and SQL access

# Thick or Thin Client?

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- **Difference Between Thick and Thin Client**
- **Thick Client full featured Gui application (windows-like)**
- **Thin Client HTML based (still full featured)**
- **No Drag & Drop in Thin Client**



# Wizards Get You Started

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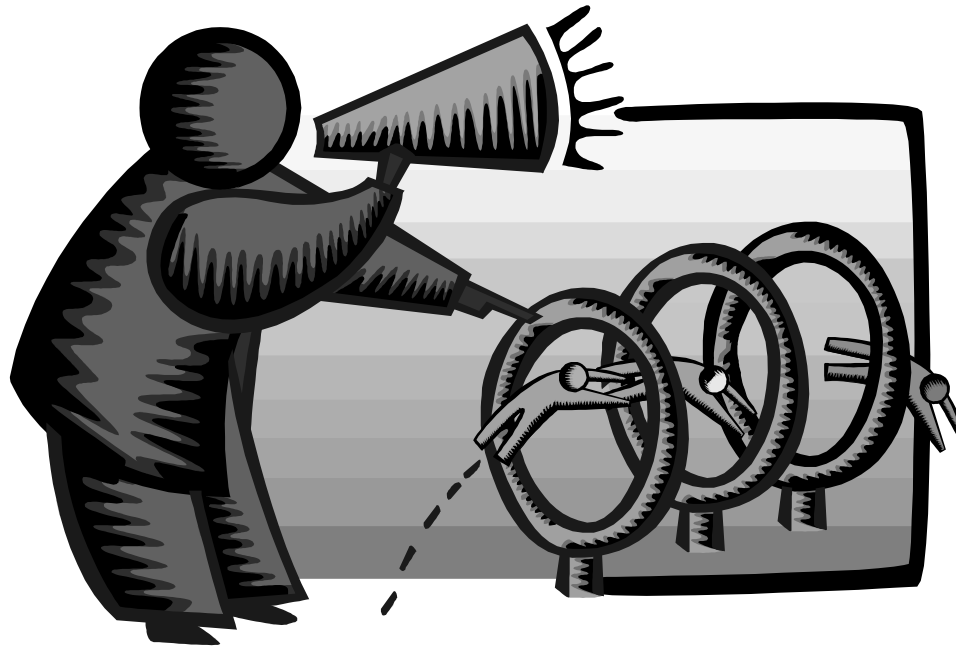
- **Wizards provided by JDev and BI Beans provide a good start**
- **Choice of JSP or UIX Applications**
- **Build a fully functioning application**
- **Samples provide additional Features that can be added**
- **Simple to change look and feel**
- **Can integrate with existing JSPs**





# Building A Thin Client Application

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## **What Did We Learn?**

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- **JDeveloper Wizards are a great start**
- **Samples also helped a lot**
- **Neither provided total solution -- Just a start**
- **Need to be able to understand Java Doc**
- **Not all JDev functions are available to developed app without custom coding.**
- **No Need to have a Java Guru on staff if you are doing heavy development!**
- **BI Beans is not a 100% solution – Getting Better with each release**
- **Don't be afraid to rollup your sleeves and learn something new!**



# How Get Started? / More Information

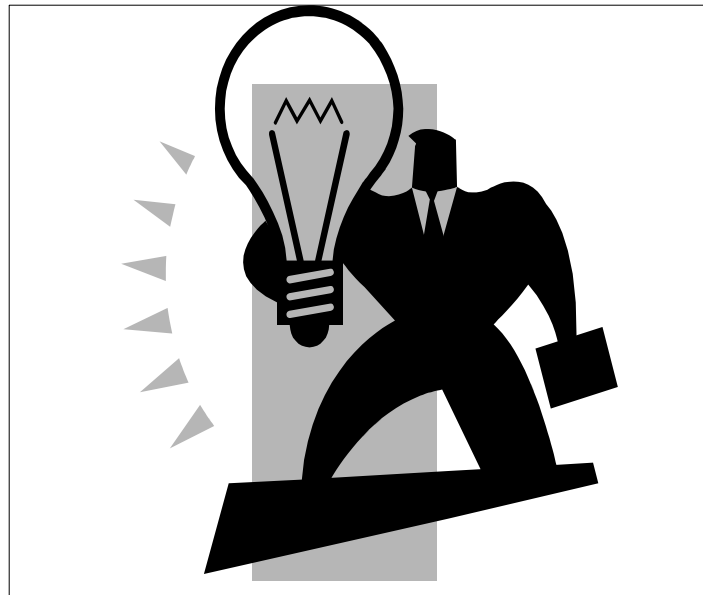
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- **Java programming**
  - Start with JDeveloper 9i (download from OTN)
- **BI Beans**
  - Tutorials (In JDeveloper)
  - Samples (on OTN)
  - Training (Web and Instructor Led)
- **Oracle Technology Network**
  - <http://otn.oracle.com/products/bib/content.html>
- **Discussion Forums**
  - <http://www.oracle.com/forums/forum.jsp?id=828024>
- **VSS Business Analyzer**
  - [www.vlamis.com](http://www.vlamis.com)



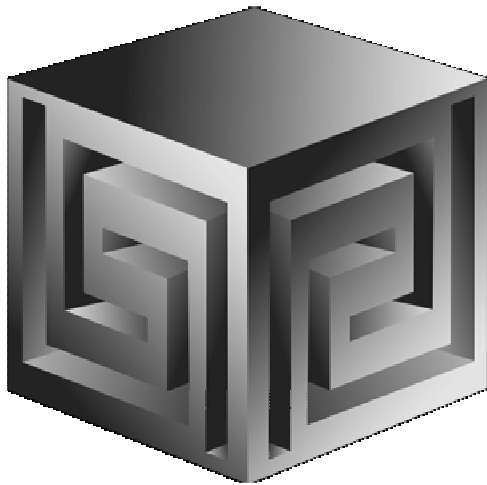
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Q & A



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