ORACLE9*i*AS DISCOVERER
(9iAS v1.0.2.2.2a unless otherwise noted)

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Overview

Oracle9iAS Discoverer is the end user ad hoc query, reporting, and analysis tool. Discoverer is deployed in either a client/server architecture or scalable web architecture. It has four components: Discoverer Desktop, Discoverer Plus, Discoverer Viewer, Discoverer Administrator and the Discoverer End User Layer (EUL) which resides in the database. Discoverer Plus/Discoverer Desktop enables business users to query, graph and create reports. Discoverer Desktop runs in a client/server architecture and Discoverer Plus as a java client. Users can perform drill and pivot analysis and publish results to the World Wide Web. Discoverer Viewer enables business users to run, view and graph reports created by users of Discoverer Plus or Discoverer Desktop. Discoverer Viewer is a true lightweight business intelligence tool, requiring no other software than a simple web browser. Discoverer Viewer reports are live, enabling users to interact with their data by changing layouts and specifying parameters. In addition, Discoverer Viewer lets you embed a report within a standard web page to integrate business intelligence with your web site. The Discoverer Administrator is used for the initial setup and ongoing maintenance of the End User Layer. The Discoverer manager performs a variety of tasks including maintenance of business areas, folders, summary table creation, and end user access. The Administrator is a required component of a complete Discoverer installation and is a component of Oracle9i Internet Developer Suite (Oracle9iDS). The Discoverer End User Layer (EUL) is a server based, low maintenance, powerful metadata repository and query management engine for data warehouses and OLTP systems. The EUL engine also automatically performs query redirection to summary tables. The EUL is centrally stored in the RDBMS for scalability and ease of maintenance. The EUL is shared by both the client/server and web releases of Discoverer which significantly lowers maintenance and administration overhead. The EUL is created and maintained by the Discoverer Administrator.

Features and Benefits

Overview

Any reports (workbooks) created in Discoverer Plus or Discoverer Desktop are immediately available in Discoverer Viewer. Any workbooks created using Discoverer Plus run in Discoverer Desktop without modification, and vice-versa. In addition a private report can be made public in one simple step. No administrator intervention is required. End users (given the proper access) create their graphs in Discoverer Plus with an easy to use wizard that supports more than 25 different graph types. They add graph titles, resize format styles, colors and more to improve the look and feel or to conform to corporate standards.

Graphs can be displayed below, right, left to data or on a separate window. These graphs created by Discoverer Plus users and saved to the database, can be immediately viewed by larger groups of Discoverer Viewer users.

With Oracle9iAS Release 2, Discoverer provides enhanced scheduling capabilities. Users schedule workbooks using a wizard based user interface, specify and maintain a 'repeat' interval, keep either all results sets or just the latest run. Discoverer automatically notifies users when scheduled workbooks are available or when expired result sets to be removed.

Formatting

Discoverer can apply parameters to either an individual worksheet, or to all sheets in a workbook. When applied to the workbook, users do not need to reenter the same parameter value for each sheet. Workbook level parameters are visually distinguishable from worksheet level ones, so the user can easily identify which parameter values will be applied to the whole workbook and which ones will be applied to individual worksheets. Discoverer can also export to MS Excel including heading and data formatting as well as total calculations. By preserving the formatting, Discoverer improves users' productivity. In addition to this, crosstab results are exported as a pivot table making it easier to manipulate the results or distribute to a larger community. Font, size, display names and format masks (i.e. monetary), can be applied directly in Discoverer Plus. Format modifications are independent of the platform. Changes applied in Discoverer Plus are visible in the Discoverer Desktop and vice versa. There is no need to keep separate client/server and web versions of a report. As an example, Discoverer Viewer supports direct pivoting of items in the result set to change the layout in your worksheet. To pivot multiple items at the same time use the tabular layout or crosstab layout. Discoverer Viewer also supports sorting of items in the result set. Viewer enables users to gain new insight into their data by modifying parameters, changing the layout, and sorting items.

Integration with Oracle 9i

Discoverer can utilize Oracle9i analytic functions capabilities to allow users to directly define analytic calculations, including ranking, windowing, cumulative reporting functions, moving averages, and statistical. While building a query, Discoverer users can either pick the analytic calculations already defined by the administrator or define their own by defining a new calculation. Discoverer users can sort, pivot and total the analytic calculations just like any other data point in Discoverer. Discoverer maintains summary data as materialized views in Oracle9i (actually release 8.1.6 and higher). Any application that is aware of materialized views benefits from the query rewrite. In case your database doers not support materialized views, Discoverer can also create and maintain summary data in standard tables.

Summary Management

Discoverer has 100% automated summary management. While creating summary tables, one of the objectives is to minimize the data explosion associated with excessive pre-aggregation in an effort to resolve the classic storage space versus query time tradeoff. The summary management feature provides fully Automated Summary Management (ASM) based on available space. Discoverer offers a wizard based feature which simplifies the summary creation process by recommending and creating summaries based on criteria set by the Discoverer administrator, the summary policy. The administrator need only define the summary policy once and the policy will be executed without any further intervention, with the actual set of summary tables dynamically adjusting with system usage. For example, if the DBA designates 10Mb database space, then Discoverer analyses, recommends, creates and maintains the summary tables, increasing all users queries. In addition, Discoverer stores all of its metadata in the database. There is only one copy of the metadata, one place to update it, and only one place to maintain it.

Non-Oracle Databases

You can use Oracle Discoverer Administrator against a non-Oracle data source through Discoverer's ODBC compatibility. Microsoft SQL Server, IBM DB2, Teradata, Informix, Sybase are some of the certified ODBC data sources. For Oracle 8.1.6 or above, Oracle8i Generic Connectivity features will allow Discoverer users to query data from different databases simultaneously. For more information on heterogeneous connectivity, refer to the database manual "Oracle8i Distributed Database Systems Release2 (8.1.6)" Part Number A76960-01.

Firewalls, Security and Connections

Discoverer Plus and Discoverer Viewer support multiple firewalls and SSL (Secure Socked Layer) to ensure that your internal systems are secured and accessible only authenticated users. With support for encryption protocols such as SSL, unauthorized people cannot access information carried over the network.

A Discoverer connection is a new concept introduced in Oracle9iAS Release 2 which stores login details that enable you to connect to Discoverer. Each connection stores the following information: database user name, database password, database name, (optional) Oracle Applications responsibility, language and EUL. Discoverer login details are saved automatically when you create a connection. From then on, you can start Discoverer simply by clicking on a connection name in the Discoverer connections list that is displayed when you run Discoverer. You can use an existing pre-defined connection (public connection) created by the Discoverer manager or use an existing personal connection (private connection) that you created yourself. .

To maintain data security, you typically change your password periodically   Your system manager specifies how long you can keep the same password before it expires and you have to change it. If your organization uses Single Sign-on, your Discoverer password is separate from your Single Sign-on password:

- your Single Sign-on password authenticates your Single Sign-on user name
- your database password authenticates your database user name
- with a single Sign-on connection, you can connect using many different Discoverer connections

End User Layer and Performance

Discoverer extends the ability of Discoverer administrators to support and roll out to multiple test and production environments. Discoverer supports exporting/importing of business areas at a granular level. This feature includes the ability to patch a production EUL by refreshing, allowing a single item to be added to an existing folder.

Discoverer is optimized for performance and designed to minimize network traffic. Performance options include HTML paging, client side timeouts and zero software download. Discoverer Viewer breaks large documents into pages in the background and displays the first. Additional pages are displayed on demand reducing network traffic between the client and the Discoverer Services. The Discoverer Services monitors client activity and ends inactive sessions after a specified timeout limit.

Integration with other Oracle products

Oracle e-Business Suite

In Discoverer, multiple schema awareness has been introduced to support multiple currencies (MRC) and multiple sets of books (MSOB) installations. In these installations, there may be more than one e-Business Suite schema with identical structures owned by different users. During the Discoverer login process, Discoverer is connected to the appropriate schema depending on the userid and responsibility combination ensuring that it can run in any of the Applications schemas that the user could be connected to.

Oracle Business Intelligence System (BIS) is an integrated set of intelligence modules for Financials, Purchasing, Operations, Human Resources and Process Manufacturing. Each intelligence module comes with Discoverer workbooks and Oracle Reports that provide ad hoc and detailed analysis of critical day to day performance measures. BIS includes the Oracle e-Business Suite EUL for Discoverer. The EUL simplifies the entire Oracle e-Business Suite database and enables users to quickly create and modify analysis reports in any business area

Oracle9iAS Portal Support

Oracle9iAS Discoverer is a portlet provider to the Oracle9iAS Portal. A portlet is information placed within a region on a portal page. In 9iAS v1.0.2.2.2a, there are no Discoverer portlets available; you must build a Discoverer portlet as an item in a folder portlet, or as an HTML portlet. In contrast, there are two new types of Discoverer portlets in 9iAS release 2: 1) List of Workbooks Portlet, and 2) a Worksheet Portlet.   A List of workbooks portlet includes the names of workbooks available from Discoverer and a Worksheet Portlet may contain data only (table or cross-tabular), a graph only, or both.

Discoverer is also integrated with Oracle Enterprise Manager (OEM). OEM provides a centralized configuration management enabling Discoverer managers to view and configure Discoverer services in the middle tier, manage public connections, switch on/off ability to create user defined connections, set default locale for connections, and switch to turn on/off Discoverer working with SSO, etc.

Discoverer provides integration with Oracle9i Reports Developer, the enterprise reporting tool. Discoverer users can export workbooks with information about layout, formatting, exceptions, parameters, and other features passed via XML. This also provides users access to the full suite of publishing capabilities of Oracle9iAS Reports Services, such as batch scheduling and PDF support.

Discoverer leverages the Oracle9iAS Web Cache. This speeds up the response to generate the most common requests, such as lists of workbooks, or frequently queried result sets. You can also use Oracle9iAS Web Cache as a router to balance the load across all available application servers.

Activity Based Management (ABM)

Customers wanting to perform enterprise wide strategic cost management and activity-based costing, can standardize on Oracle ABM (Activity Based Management) globally. This application supports multiple cost models, multiple currencies, and multiple languages in a single Oracle database instance.   You can source General Ledger from Oracle Applications to Oracle ABM automatically. You can use standardized reports or create custom Discoverer reports for multidimensional cost analysis including unit costs, variance analysis, business process costing, etc.

BIBeans in JDeveloper

BI Beans are application logic components which can be embedded within an application in order to perform a particular function. As an example, Discoverer uses the BI Graph Bean as the underlying technology for its graphing capabilities.

Oracle Warehouse Builder

Discoverer gets its metadata from a number of sources including the data dictionary or gateway, or populated via Oracle9i Warehouse Builder Common Warehouse Metadata (CWM) Bridge. This wizard driven user interface leverages OWB metadata including the star schema, list of values and hierarchies defined in OWB to Discoverer.

Customization

Discoverer Viewer can be used as a standalone business intelligence tool or can be used to integrate database output into your web site and portal. In addition, Discoverer Viewer is easily customized to fit in with your web site look and feel, to incorporate your company logo or other artwork, or to build custom Discoverer applications for the web. The appearance of Discoverer Viewer can be customized by specifying HTML formatting attributes in a customization file. Fonts, colors and graphics are all easily changed by anyone familiar with HTML formatting. In 9iAS Release 2, Users may simply specify a URL that defines the workbook and worksheet enabling Discoverer content to be called via any HTML application.

Discoverer Viewer can be used to build complete custom web applications or deliver data to other middle tier web systems. It uses industry standard XML to represent application state, and the XSL style sheet language to format the user interface. Standard XSL tools can be used to customize the user interface or to produce a complete embedded business intelligence application.

Installation and Configuration

Oracle9i Application Server Enterprise Edition (EE) includes Discoverer Plus and Discoverer Viewer. As a precaution, please read the Release Notes and Installation Guide/Instructions before you begin installation. Depending on which internet browser you are using and your company's network server configuration, you might need to follow a one-time-only set up process when you start Discoverer for the first time.

The prefs.txt file contains parameters to set system defaults for such things as the number of rows displayed per page, the value to display for 'null' values, and other options that are otherwise set by users from the Tools/Options menu. Note that while many of these can be modified by individual users, there are also system level preferences (e.g. timeout) that can only be set by the Administrator per Discoverer installation.

There are two different timeout settings that can be set by the Discoverer Administrator:

1) The timeout in the Prefs.txt file will only impact Discoverer Plus users.

```
[Session Manager]
Timeout             =  1800
# Timeout in seconds if there is no client activity. Minimum allowed time is 180 secs
```

2) The timeout for Discoverer Viewer users is controlled by the servlet engine and not by the Preferences file (Prefs.txt). With the Apache/JServ engine of iAS, you will find the timeout setting in Jserv\servlets\zone.properties.

```
# Set the number of millisecond to wait before invalidating an unused session.
# Syntax: session.timeout=(long)>0
# Default: 1800000 (30 mins)
session.timeout=1800000
```

As soon as a user logs in to Discoverer, their default settings from the registry are applied to the session. Once connected, if the server level settings (e.g. timeout) are changed by the Administrator, users will not be impacted by the update until their next login. Users may want to change some of the preferences via the Tools/Options menu. Locally changed preferences are made effective within the same session. These are saved within the registry so that the next time a user logs in to Discoverer, these will be applied to the session along with system level defaults.

The prefs.txt file populates a set of default preferences that will be picked for a user's session. Any changes made during a session are immediately applied and saved privately for each user. When a user logs in next time, the default (prefs.txt) as well as his/her private (modified) preferences will be applied. Hence, changing the default settings in prefs.txt will not affect those users who have customized their own preferences. If Discoverer Server is running on NT then you can see the preferences for users in the registry under the key:

```
HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE\WebDisco 5\User Preferences
```

Other Web Servers Support

Oracle9iAS Discoverer is only available and only ships as a component of Oracle9iAS. The only way to install Discoverer is to install Oracle9iAS. Therefore, Discoverer cannot directly support web servers outside of Oracle9iAS. However, Oracle9iAS, via Oracle HTTP Server provides a proxy capability to support other web servers such as Netscape iPlanet and Microsoft IIS. The proxy capability will enable client applications to directly route requests to their native web server and these then get routed to Oracle9iAS and the Oracle HTTP Server. For detailed information on support for these web servers please refer to Oracle9iAS documentation.

9iAS and Discoverer 4i Plus

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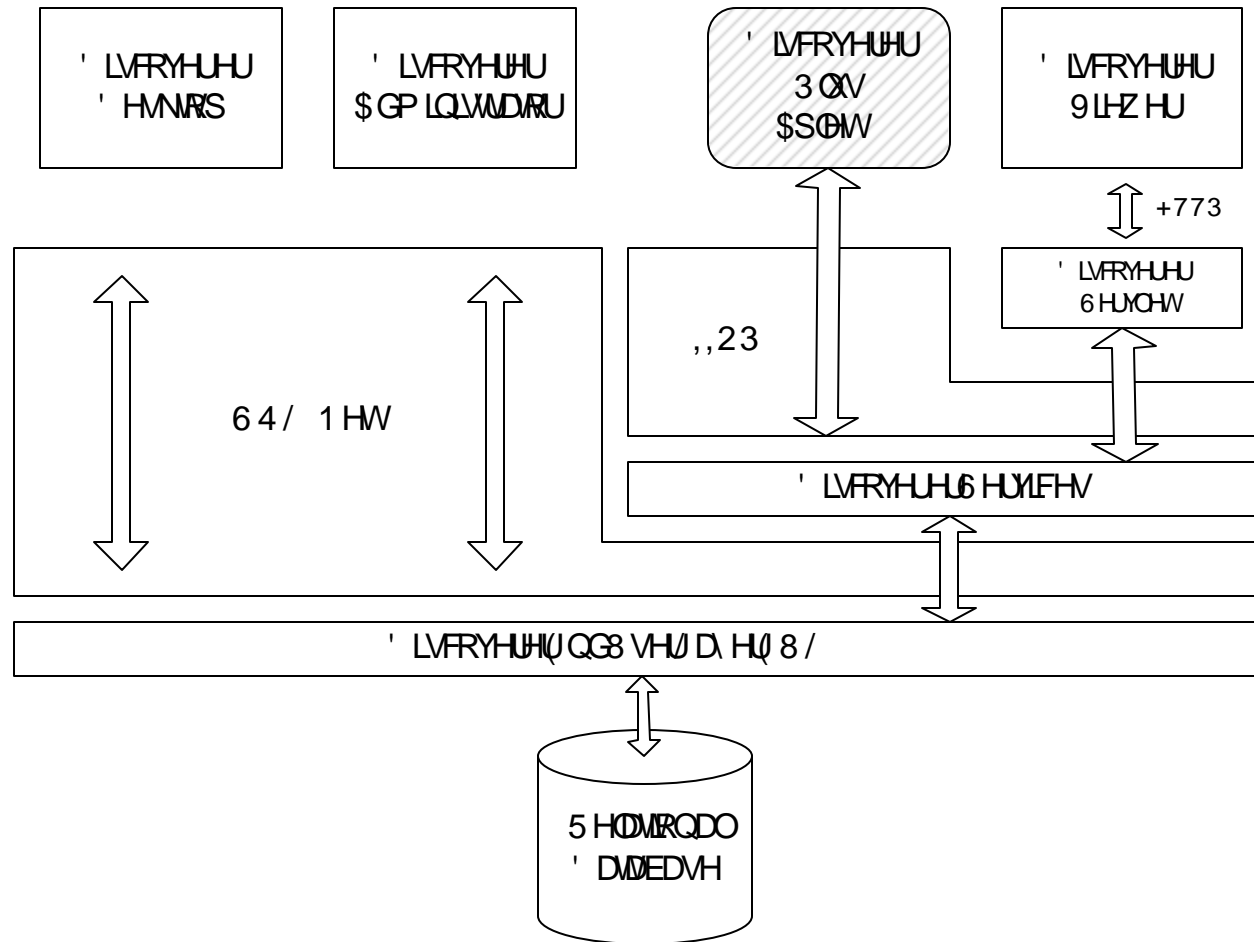**Website: www.vlamis.com**

Vlamis Software Solutions, Inc.

- **Oracle Beta Tester for numerous programs, such as Applications 11i, Reports 6i, OWB, 9iAS, Oracle 9i OLAP, JDeveloper and BIBeans**

- **Designs and implements databases/data marts/data warehouses using RDBMS and Multidimensional tools for Business Intelligence**

- **Specializes in Oracle Applications 11i implementations for middle market manufacturers and distributors, including custom development for competitive advantage**

- **Creator of the first Oracle 9i OLAP Business Intelligence and Analytics tool, VSS Business Analyzer.**

- **Our competencies include certified designers, developers, and implementers**

- **Nationally recognized technical authors, speakers, and publishers**

Agenda

- **9iAS and Discoverer 4i Plus Overview**
- **Setup and Connectivity for Discoverer 4i Plus**
- **Oracle Portal concepts**
- **Building and Executing a Query**
- **Demonstration**
- **Summary**

Oracle 9iAS Overview

Discoverer 9iAS Overview

- **Discoverer 4i Java client**

- **Discoverer 4i viewer**

- **Discoverer Admin edition**

Discoverer 9iAS Overview

- **Install as Standalone BI tool, integrated into website or portal, or with Applications 11i (metalink note 146468.1, MKS Toolkit 6.1a or higher, and Discoverer 4i patches 2175703 and 2177640)**

- **Region on portal page = portlet**

- **Data source registered with 9iAS Portal = portlet provider**

- **9iAS Discoverer = portlet provider to 9iAS Portal**

Discoverer 9iAS Overview

- **2 types of Discoverer Portlets**
  - list of workbooks portlet
  - Results portlet
- **Results portlets may be data only (table or crosstab), graph only, or both data and graph**
- **Portlets may distinguish between authenticated users and non-authenticated users**

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Discoverer 9iAS Install

- **First (Enterprise) Install**
  - **9iAS 1.0.2.2.2a**
  - **Oracle 8.1.7.0.0**
  - **HTTP Server 3.19.0.0a**
  - **Discoverer 4i Viewer 4.1.38.16.0c**
- **Second Install**
  - **Oracle 9i Developer Suite 1.0.2.4**
  - **Discoverer Admin Edition 4.1.37**
  - **Discoverer Plus**
  - **Post-install patches**

Discoverer 9iAS Install -- Step 0

- **8.1.7 Release 3 Post Install recommendations**

  - **De-install HTTP server service**

  - **Modify tablespaces**
    - **Users old 20 → new 250**
    - **Temp old 20 → new 100**
    - **System xx → new 500**

  - **Modify init.ora**
    - **Open_cursors = 75**
    - **Shared_pool_size = 80000000**
    - **Large_pool_size = 1228800**
    - **Java_pool_size = 3000000**

- **Stop and Restart OracleServiceORCL**

init.ora

```
# db_files = 1500                                                    # LARGE

control_files = ("C:\oracle\oradata\ORCL\control01.ctl", "C:\oracle\oradata\ORCL\control02.c

open_cursors = 75
max_enabled_roles = 30
db_file_multiblock_read_count = 8   # INITIAL
# db_file_multiblock_read_count = 8                                  # SMALL
# db_file_multiblock_read_count = 16                                 # MEDIUM
# db_file_multiblock_read_count = 32                                 # LARGE

db_block_buffers = 3764   # INITIAL
# db_block_buffers = 100                                             # SMALL
# db_block_buffers = 550                                             # MEDIUM
# db_block_buffers = 3200                                            # LARGE

shared_pool_size = 40000000   # INITIAL
# shared_pool_size = 3500000                                         # SMALL
# shared_pool_size = 5000000                                         # MEDIUM
# shared_pool_size = 9000000                                         # LARGE

large_pool_size = 45000000
java_pool_size = 32768000

log_checkpoint_interval = 10000
log_checkpoint_timeout = 1800

processes = 150   # INITIAL
```

For Help, press F1   Ln 59, Col. 1   DOS   Mod: 4/4/2002 1:47:03PM   File Size: 7387   INS

Discoverer 9iAS Install -- Step 1

- **9iAS Enterprise Edition installation recommendations**

  - **Use iSetup.exe on Disk 1, not the OUI from the 8.1.7 disk**

  - **Enterprise Edition requires 3115 MB**

    - **iSuites HTTP server***
    - **Forms Server***
    - **Reports Server***
    - **Discoverer 4i Plus**
    - **Discoverer 4i Viewer**
    - **Discoverer 4i Server**
      *created via new Oracle homes
  - **Manually modify the following:**
    - **httpd.conf**
    - **Bug #1775370**

Discoverer 9iAS Install -- Step 2

- **Discoverer Admin Install ***
  - **9i Developer suite 1.0.2.4**
  - **XSL stylesheet settings in disco4iv.xml**
    - **xsl_pool old false →new true**
    - **xsl_pool_capacity old 32000 → new 4**
    - **xsl_pool_minimum old 0 → new 2**
    - **xsl_pool_optimize_period old 5000 → new 10000**
    - ***in new 806 home created by step 1**

Agenda

- **9iAS and Discoverer 4i Plus Overview**
- **Setup and Connectivity for Discoverer 4i Plus**
- **Oracle Portal concepts**
- **Building and Executing a Query**
- **Demonstration**
- **Summary**

Oracle Portal Concepts

- Oracle Portal provides the framework for creating and maintaining Enterprise Information Portals. It can be used to define business portals consisting of a number of different portlets.

- Portlets provide at-a-glance views of information from various sources both inside and outside of the corporate network.

Oracle Portal Concepts (contd.)

- A **portlet provider** is an entity that provides one or more portlets that can be added to a Portal page.

- Portlet providers can be of 2 types :
  - Database Provider.
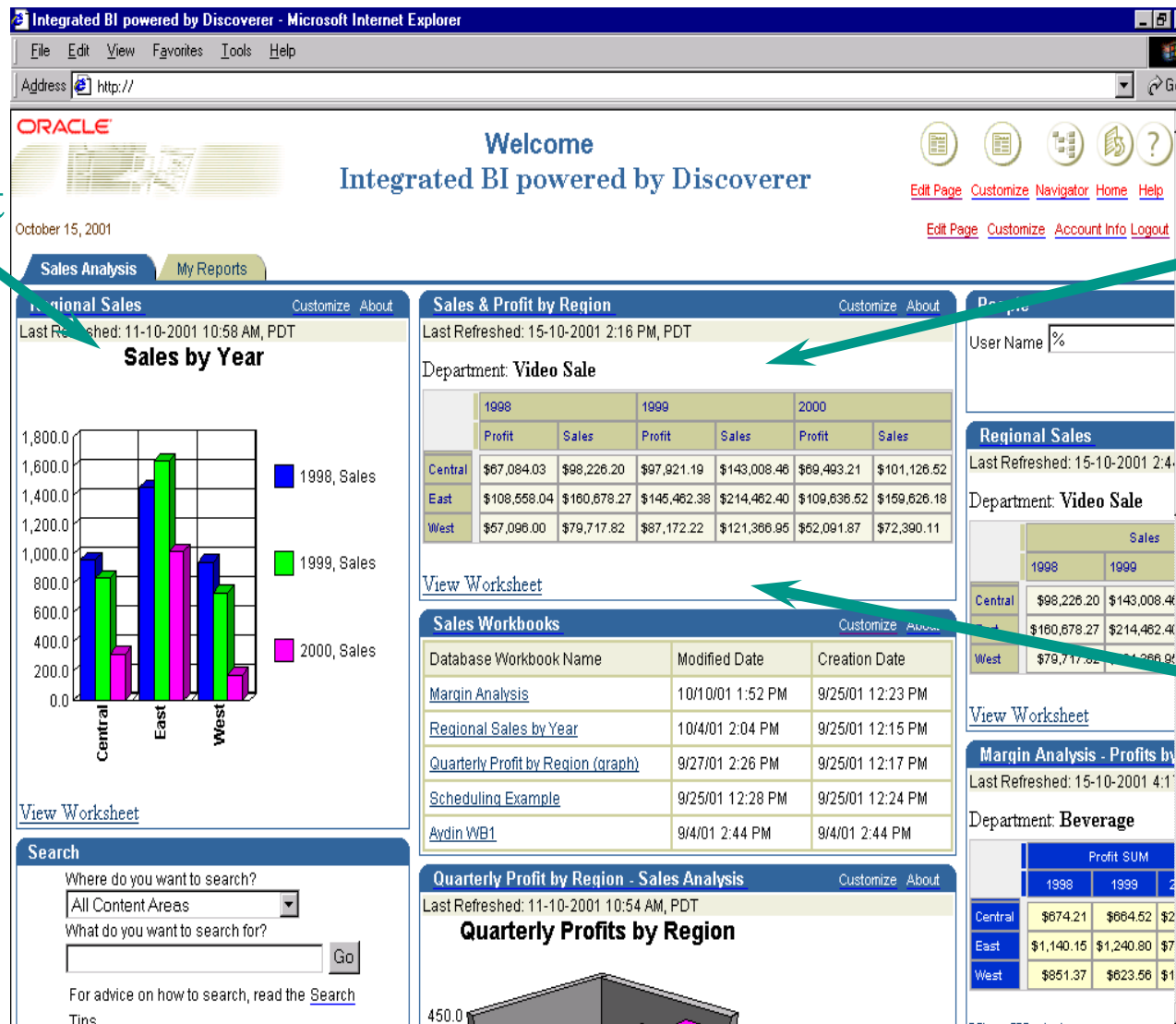 - Web Provider - Oracle9iAS Discoverer

Oracle Portal Integration

- **For Oracle 9iAS 1.0.2.2.2a**
    - **No Discoverer Portlet available**
    - **Build as either**
        - **an Item in a Folder Portlet (URL)**
        - **or as HTML Portlet**

Discoverer Portlets 9iAS release 2

Worksheet Portlet: Graph

Worksheet Portlet: Crosstab

List of Workbooks Portlet

Discoverer Portlets Personalization

- **Allows users to use their own connection to view a given portlet.**

- **Allows users to specify parameter values for a worksheet portlet.**

- **Allows users to change portlet properties : title, workbook filter, workbook sort column.**

- **Renders using user's selected page style.**

Discoverer Portlets Security

- **Allows portlet publisher to control the connections that authenticated and un-authenticated users should use to display data.**

- **Allows different Portal users to see data using different database connections, very useful for row-level security.**

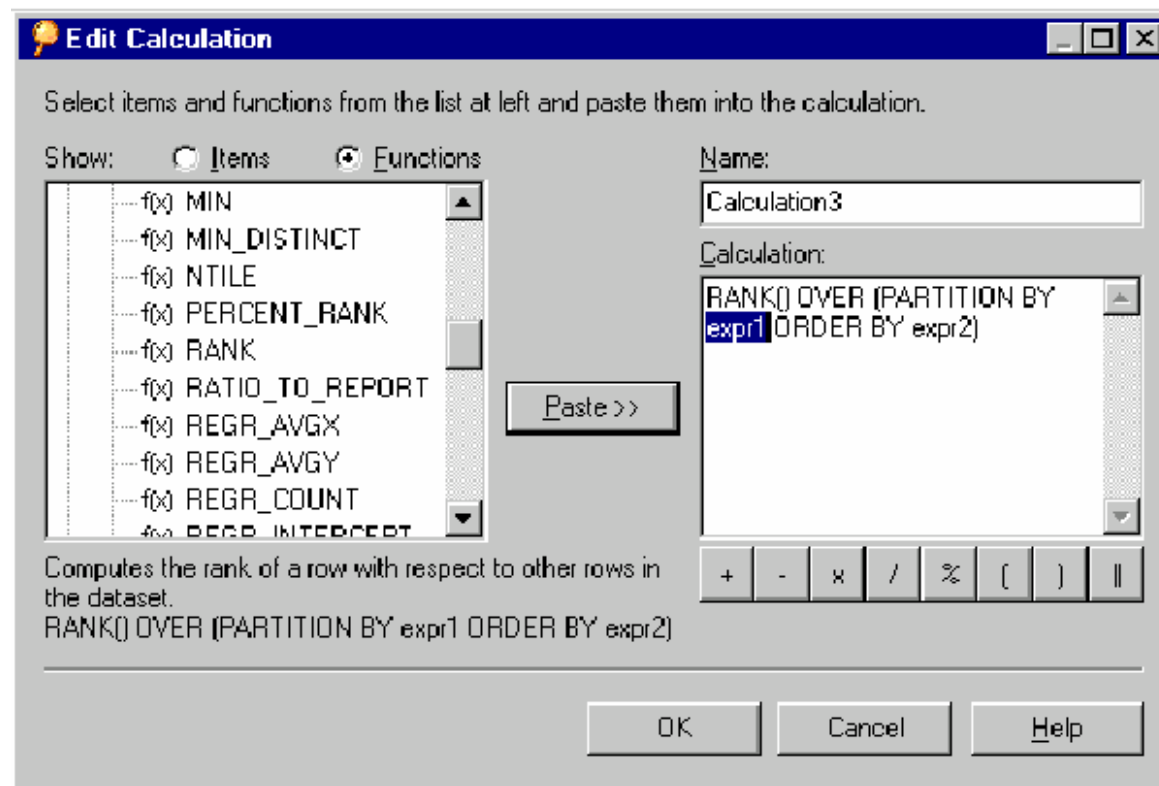# Discoverer Portlets Refreshing Data

- **Allows publisher to specify a rate at which portlet content should be refreshed.**

- **Users don't have to run a query when they access the portal.**

Discoverer 4i Enhancements

- **Support for 8i/9i Analytic Functions**

- **Support for 8i/9i materialized views**

- **Enhanced import/export including ability to export workbooks saved in database**

- **Multiple schema support**

- **EULs for Oracle Apps Support**

- **4i Plus Applet**

SQL Analytic Support

Discoverer 4i Viewer Customizations

- **Four levels of customization**
  - **User level modification**
  - **"Look and Feel" – edit viewer_config.xml**
  - **Viewer Appearance – edit style.xsl**
    - **Logo, text color, headings, fonts, styles, links, and images**
  - **Custom Application**
    - **Control of interface, knowledge of HTML and XML, modify XSL files, servlet structure**
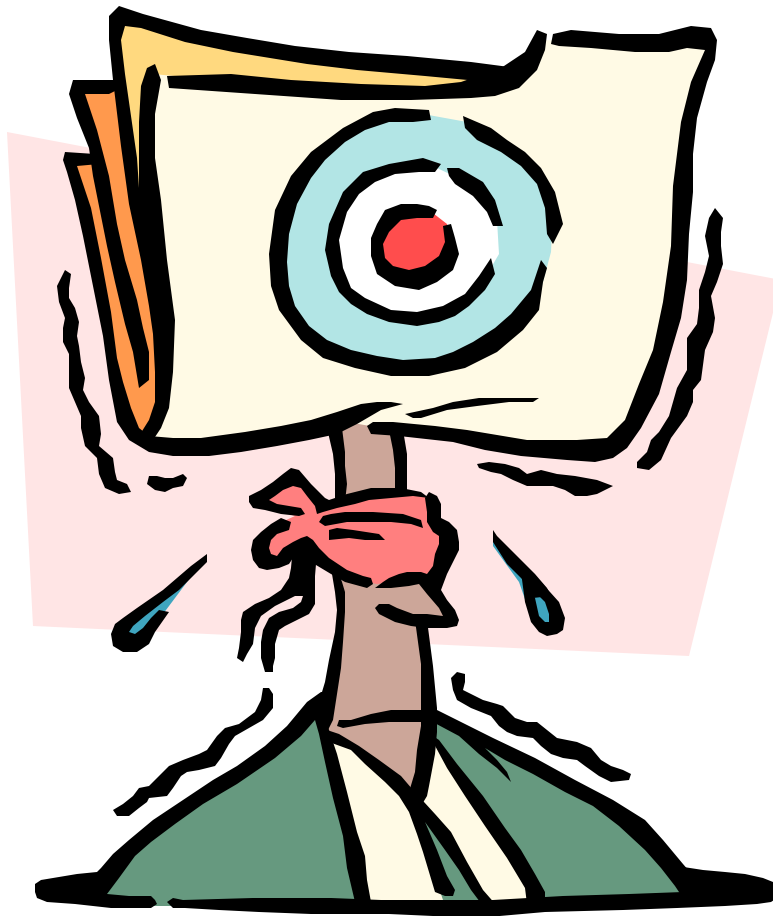
Discoverer 4i Limitations

- **Discoverer does not do forecasting, models, what-if analysis, write-back, or advanced custom formula ad-hoc queries.**

- **Discoverer works in read only mode**

- **You will need to use SQL analytics at command line, Oracle Financial Analyzer, VSS Business Analyzer, or wait until Discoverer takes full advantage of BIBeans.**

DEMONSTRATION
9IAS and Discoverer 4i Plus

QUESTIONS?

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