



[Previous](#) [Next](#)

## Getting started

---

This part explains the basic concepts of Oracle BI Discoverer Plus. If you are a first time Discoverer user, want to refresh your Discoverer knowledge, familiarizing yourself with these concepts will help you work more effectively with Discoverer.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

# Introducing Oracle Business Intelligence Discoverer

---

This chapter introduces Oracle Business Intelligence Discoverer (Oracle BI Discoverer), and includes the following topics:

- ["What is Oracle BI Discoverer?"](#)
- ["Why should I use Oracle BI Discoverer?"](#)
- ["How do I access information using Oracle BI Discoverer?"](#)
- ["What is a typical workflow with Oracle BI Discoverer?"](#)
- ["What are the different components of Oracle BI Discoverer?"](#)
- ["Who is the Discoverer manager and what do they do?"](#)



[Previous](#)



[Next](#)

## What is Oracle BI Discoverer?

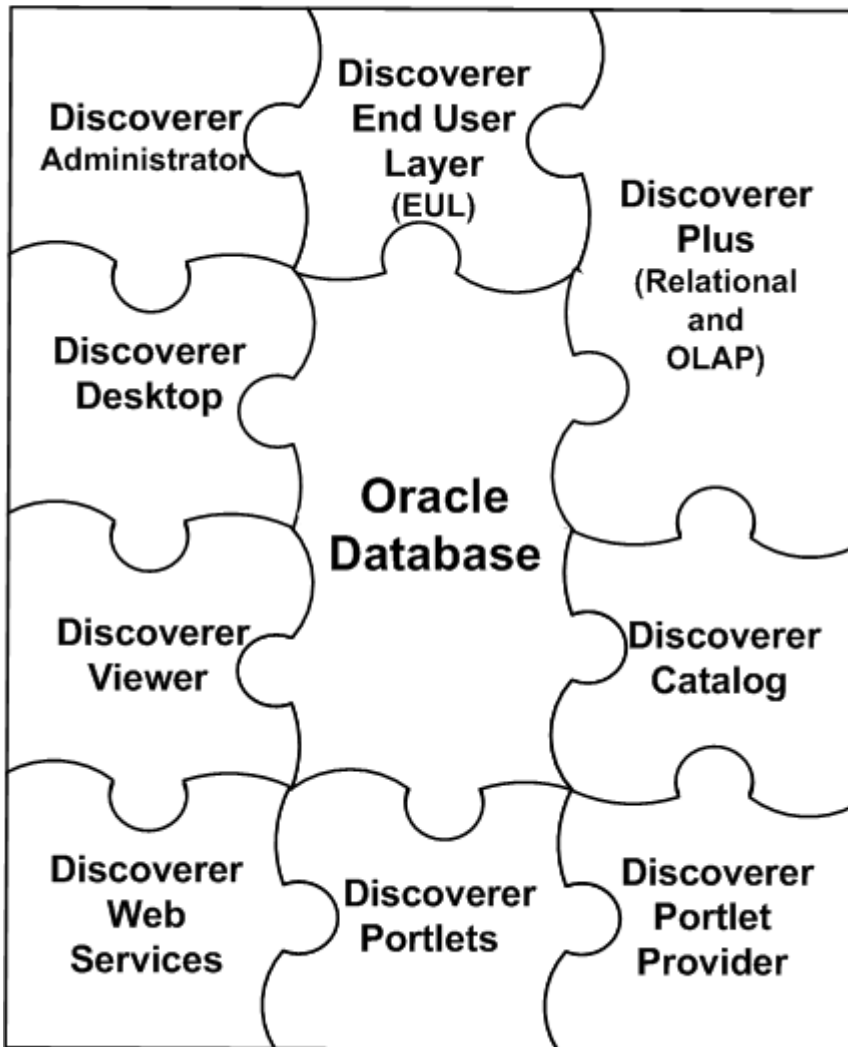
---

Oracle BI Discoverer is an intuitive ad-hoc query, reporting, analysis, and Web publishing toolset that gives business users immediate access to information in databases.

Oracle BI Discoverer enables business users at all levels of the organization to make faster and more informed business decisions. Using any standard Web browser, you have secure and immediate access to data from both relational and multidimensional data sources. Oracle BI Discoverer provides a business view to hide the complexity of the underlying data structures, enabling you to focus on solving business problems.

Oracle BI Discoverer consists of several integrated components that work with the Oracle database to give you a complete and integrated Business Intelligence solution.

### *Oracle BI Discoverer components*



Description of "Oracle BI Discoverer components"

The Oracle BI Discoverer component that you use depends on the task you want to perform.

- To create new worksheets and analyze data from both relational and multi-dimensional data sources across the Web, you use Discoverer Plus
- To create new worksheets and analyze data from relational data sources using a Windows application on a PC, you use Discoverer Desktop
- To analyze data in existing worksheets, you use Discoverer Viewer or Discoverer portlets (that have been added to an Oracle Portal page or Oracle WebCenter Spaces using Discoverer Portlet Provider
- To obtain Discoverer connections, workbooks, worksheets, and execute queries in Oracle BI Publisher, or from a Java client application using the SOAP protocol, you use Discoverer Web Services
- To display Discoverer worksheets as gauges in dashboard-style portals, you use Discoverer Portlet Provider and Discoverer portlets
- To manage the end user view of relational data, you use Discoverer Administrator

The Oracle BI Discoverer components use definitions of Discoverer objects stored in the Discoverer End User Layer or the Discoverer Catalog.

For more information about the Oracle BI Discoverer components, see "[What are the different components of Oracle BI Discoverer?](#)".

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## Why should I use Oracle BI Discoverer?

---

Comparing Oracle BI Discoverer with other ways of accessing data that you might have used helps you understand why Discoverer is so powerful. Imagine that you want to analyze information in a database. In the past you typically had to:

- understand databases and a programming language called SQL to find the data (or ask a programmer to find the data for you)
- wait a long time for the data to be retrieved
- reformat the data to analyze it (often by exporting the data to a spreadsheet package, graphics package, or statistical analysis package)

With Oracle BI Discoverer, you simply open a workbook containing the data you want to see and start analyzing. You do not have to know anything about databases. You do not have to wait a long time to get information. You do not have to use another application to analyze your data.

Oracle BI Discoverer's powerful and intuitive user interface enables you to:

- find data that you know is in the database
- access data quickly without waiting for the computer to search through the entire database
- view data in a familiar spreadsheet-style format that is easy to read and understand
- analyze data using a variety of powerful techniques including:
  - drilling up and down through data
  - finding data that meets certain conditions or that falls within ranges that you specify
  - sorting data
- prepare reports showing the results of your analysis
- share data with other people, and in other applications (for example, Microsoft Excel)

## How do I access information using Oracle BI Discoverer?

---

You use Oracle BI Discoverer to analyze information by creating and using Discoverer workbooks and worksheets.

A workbook is simply a named collection of worksheets. Each worksheet contains the data and graphs that you require to extract business information from the database. Each worksheet contains the result of a query.

Worksheets can show information:

- as data points in cells (formatted as tables or as crosstabs)
- as graphs (Oracle BI Discoverer supports many different graph types)

You can create and analyze worksheets using Discoverer Plus and Discoverer Desktop.

You can view, analyze, and customize worksheets using Discoverer Viewer and Discoverer portlets.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## What is a typical workflow with Oracle BI Discoverer?

As you become more familiar with Oracle BI Discoverer, you will find a workflow that suits you best.

Typically, using Oracle BI Discoverer is a three-stage process:

- "Stage 1: Getting the data you want"
- "Stage 2: Analyzing data"
- "Stage 3: Sharing data with other people"

## Stage 1: Getting the data you want

---

When working with Oracle BI Discoverer, you get the data you want by:

- using existing workbooks created by the Discoverer manager or by other Discoverer users
- creating new workbooks to analyze data in a new way using Discoverer Plus or Discoverer Desktop

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## Stage 2: Analyzing data

---

Your ultimate goal in using Oracle BI Discoverer is to analyze data to arrive at a profitable business decision. To do this, you might ask yourself questions about your business. For example:

- What is the average time for a hospital stay for heart transplant patients?
- How many engineers have we hired in the last twelve months?
- Which telephone lines need greater bandwidth?

With Discoverer's data analysis tools, you can find the answers to these and other business questions by:

- pivoting data to create comparisons
- drilling up and down in data to see consolidated or more detailed information
- drilling out to analyze data in other applications
- creating totals, calculating percentages, and creating custom calculations
- displaying data visually in graphs and charts

The result is a collection of worksheets and graphs that persuasively support your business decisions.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## Stage 3: Sharing data with other people

---

When you have retrieved and analyzed data, you probably want to share your results with other people at your organization, with customers, or with business partners.

If the people you want to share data with also use Oracle BI Discoverer:

- you can share your Discoverer workbooks and worksheets with them (for more information about sharing workbooks, see "[About sharing workbooks](#)")  
  
Discoverer Plus users can open worksheets and save their own personal copy to the database. Discoverer Viewer users can view worksheets, and save their own personalizations (personalization do not affect the source worksheets in the database).
- you can use Discoverer Portlet Provider to publish worksheets as portlets on Oracle Portal pages (for more information, see *Oracle Fusion Middleware Guide to Publishing Oracle Business Intelligence Discoverer Portlets*)

If the people you want to share data with do not use Oracle BI Discoverer, you can export Discoverer worksheets in popular application formats (for example, Microsoft Excel, HTML). For more information about exporting worksheets, see "[About exporting Discoverer data to other applications](#)".

# What are the different components of Oracle BI Discoverer?

---

Oracle BI Discoverer comprises the following components:

- Oracle Business Intelligence Discoverer Plus

This component runs over the internet or intranet and enables you to:

- create new worksheets and graphs to get the data you want
- analyze the data
- share worksheets and graphs with other people

For more information:

- about using Discoverer Plus Relational, see "[Using Discoverer Plus with a relational data source](#)"
- about using Discoverer Plus OLAP, see "[Using Discoverer Plus with a multidimensional data source](#)"

- Oracle Business Intelligence Discoverer Viewer

This Oracle BI Discoverer component runs over the internet or intranet inside a web browser. Use Discoverer Viewer to analyze the data in worksheets created in Discoverer Plus, and Discoverer Desktop. You can personalize worksheets (for example, by repositioning items) and save your changes.

For more information about Discoverer Viewer, see the *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Discoverer Viewer*

- Oracle Business Intelligence Discoverer Portlet Provider and Discoverer portlets

These Oracle BI Discoverer components run over the internet or intranet inside a web browser. Use Discoverer Portlet Provider to include Discoverer worksheets as areas (or portlets) within existing Oracle Portal pages. Discoverer Portlet Provider enables you to publish the following types of Discoverer portlet:

- a List of Worksheets portlet
- a Worksheet portlet
- a Gauges portlet

You can personalize worksheets (for example, by adding stoplight formatting) and save your changes.

- Oracle BI Discoverer Desktop

This Oracle BI Discoverer component is a Windows-only application that enables you to build new worksheets to analyze data from relational data sources. The worksheets you create in Discoverer Desktop can be used in Discoverer Plus, Discoverer Viewer, and Discoverer portals.

For more information about Discoverer Desktop, see the *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Discoverer Desktop*

- Oracle BI Discoverer Administrator

This Oracle BI Discoverer component is a Windows-only application used by the Discoverer manager to create and maintain a business oriented view of relational data. Discoverer Administrator provides wizards and dialogs to:

- control access to data
- manage summary data
- administer batch scheduling

For more information about Discoverer Administrator, see the *Oracle Fusion Middleware Administrator's Guide for Oracle Business Intelligence Discoverer*

- Oracle BI Discoverer End User Layer (EUL)

The Discoverer End User Layer component is a repository for storing and retrieving definitions of objects used when querying relational data sources.

For more information about the End User Layer, see the *Oracle Fusion Middleware Administrator's Guide for Oracle Business Intelligence Discoverer*

- Oracle BI Discoverer Catalog

The Discoverer Catalog component is a repository for storing and retrieving definitions of user objects when querying multidimensional data sources.

For more information about the Discoverer Catalog, see "[What is the Discoverer Catalog?](#)".

## **Who is the Discoverer manager and what do they do?**

---

The Discoverer manager is the person in your organization that is responsible for setting up and maintaining Discoverer. In some organizations, the Discoverer manager also creates predefined workbooks for Discoverer users.

The Discoverer manager uses the Discoverer Administrator component to:

- organize the data in your organization's database into business areas
- give Discoverer users access to data that they are authorized to see
- optimize Discoverer performance

The Discoverer manager also maintains the Discoverer Catalog.

For more information about the role of the Discoverer manager, see the *Oracle Fusion Middleware Administrator's Guide for Oracle Business Intelligence Discoverer*

## Using Discoverer Plus with a relational data source

---

This chapter introduces Discoverer Plus Relational and contains the following topics:

- ["What is Discoverer Plus Relational?"](#)
- ["What is a relational data source?"](#)
- ["What are business areas?"](#)
- ["What are folders?"](#)
- ["What are items?"](#)
- ["What is the Discoverer Plus Relational sample database?"](#)
- ["What are the new features in Discoverer Plus 11.1.1?"](#)
- ["Where can I find out more about Discoverer Plus Relational?"](#)

## What is Discoverer Plus Relational?

---

Discoverer Plus Relational is the Discoverer component that enables you to create and analyze worksheets. Using Discoverer Plus Relational, you can access and analyze data from your company's database, without having to understand complex database concepts. Using wizards and menus, Discoverer Plus Relational guides you through the steps to retrieve and analyze data that supports your business decisions.

### ***Oracle BI Discoverer components***



[Description of "Oracle BI Discoverer components"](#)

Other Discoverer users can open the worksheets you share with them, using Discoverer Plus Relational, Discoverer Viewer, Discoverer portals, Discoverer Desktop, and Discoverer Web Services.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## What is a relational data source?

---

A relational data source is a database in which information is stored in several database tables. Each database table comprises several columns, and one or more rows. The different tables in a database can be related. Having data in separate but related tables is an efficient way to store and retrieve information.

### *Three related database tables*



#### Description of "Three related database tables"

The example above shows three database tables:

- the STORE table contains three columns:
  - Store\_key
  - City
  - Region
- the PRODUCT table contains three columns:
  - Product key
  - Description
  - Brand
- the SALES\_FACT table contains five columns:
  - Store\_key
  - Product\_key
  - Sales
  - Cost
  - Profit

Relational databases are a widely used data source. However, relational databases can become complicated when they contain hundreds of related tables, with thousands of columns, and millions of rows. Finding information in such a database can be a real challenge.

The Discoverer manager uses the Discoverer End User Layer to hide the complexity of the database from you. By defining business areas, folders, and items, the Discoverer manager enables you to use Discoverer Plus Relational to find just the data you want to analyze.

## What are business areas?

---

A business area is a collection of related information in the database.

The Discoverer manager works with the different departments in your organization to identify the information that each department requires from the database. The Discoverer manager locates the information in the database and groups it into business areas. Within each business area, the Discoverer manager organizes information into folders.

For example, the key areas of a company's business might be sales, production, and human resources. So the Discoverer manager might create three corresponding business areas.

### *Three Discoverer business areas*



[Description of "Three Discoverer business areas"](#)

The Discoverer manager also decides which users can access which business areas.

The figure below shows how business areas are displayed in Discoverer Plus Relational. The business areas in this example are called Video Store Tutorial, and NewBusinessArea1.

### *Business areas in Discoverer*



[Description of "Business areas in Discoverer"](#)

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## What are folders?

---


A folder is a collection of closely related information. For example, information about products that your company produces might be in a folder called Products.

If you are familiar with relational databases, a folder is similar to a database table or view. Indeed, a folder can be based directly on a database table or view.

The different folders in a business area might contain related information. For example, a business area might contain two folders:

- a Products folder containing information about each product (for example, product ID, product description, product brand)
- a Sales folder containing information about the sales of each product (for example, the store where a particular product was sold, the price for which the product was sold, the cost of the product, the profit made on each sale, and the product reference number)


### ***A business area containing two folders***

 [Description of "A business area containing two folders"](#)

By querying the Sales folder, you can see information about a particular sales transaction. But to see the description of the product that was sold (rather than simply the product reference number) you must also query the Products folder.

The Discoverer manager might combine information from several folders into one folder to make it easy to find all the information you need. For example, the Discoverer manager might create a third folder called Product Sales Info, containing the description of each product sold (from the Products folder) and the price that was paid for it (from the Sales folder).

### ***A Discoverer folder containing information from a Products folder and a Sales folder***

 [Description of "A Discoverer folder containing information from a Products folder and a Sales folder"](#)

**Figure:** *Folders in Discoverer* shows how folders (for example, Video Analysis Information, Stores and Sales Details, Monthly Sales Analysis) are displayed in Discoverer Plus Relational's item navigator tab.

### ***Folders in Discoverer***

 [Description of "Folders in Discoverer"](#)

## What are items?

---

Items are different types of information within a folder.

If you are familiar with relational databases, an item is similar to a column in a database table. Indeed, an item might be based on a column in a database table.

For example, each product your company produces might have a reference number, a description, and a brand. The Products folder containing information about these products would have three items (a Product Reference Number item, a Description item, and a Brand item).

### ***A Discoverer folder containing three items***

#### Description of "A Discoverer folder containing three items"

Each item contains individual pieces of information. For example, the reference number item might contain a list of reference numbers.

The Discoverer manager decides which items are included in folders based on the information you want to analyze.

**Figure: Items in Discoverer** shows how items (for example, Department, Region, City) are displayed in Discoverer Plus Relational's item navigator tab.

### ***Items in Discoverer***

#### Description of "Items in Discoverer"

## What is the Discoverer Plus Relational sample database?

---

Discoverer is supplied with a sample database containing data about a fictitious company called Video Stores. Information in the Video Stores sample database includes:

- sales region
- year
- department
- sum of profit
- size of store (in square metres)
- type of store design (for example, compact, modern, or traditional)
- store name

Discoverer is also supplied with a sample workbook called Video Tutorial Workbook that you can use to analyze the example data. The Video Tutorial Workbook contains several worksheets, including:

- a table worksheet called Tabular Layout
- a crosstab worksheet called Crosstab Layout

**Note:** The Discoverer manager might have given the sample workbook a different name from Video Tutorial Workbook.

Both worksheets enable you to analyze the sales and profitability of Video Stores (see [Figure: Sample Discoverer worksheets in the Video Tutorial Workbook](#)).

***Sample Discoverer worksheets in the Video Tutorial Workbook***

a

Page Items: Year: 2000

|    | Region  | Department   | Profit SUM                            |
|----|---------|--------------|---------------------------------------|
| 1  | Central | Video Rental | £25,157                               |
| 2  |         | Video Sale   | £63,493                               |
| 3  |         |              | <b>Total for Central: £94,651</b>     |
| 4  | East    | Video Rental | £40,402                               |
| 5  |         | Video Sale   | £103,537                              |
| 6  |         |              | <b>Total for East: £160,038</b>       |
| 7  | West    | Video Rental | £23,521                               |
| 8  |         | Video Sale   | £52,092                               |
| 9  |         |              | <b>Total for West: £75,613</b>        |
| 10 |         |              | <b>Total for All Values: £320,301</b> |

Page Items: Department: Video Sale

|         | Year | 1998     | Pro |
|---------|------|----------|-----|
| Region  |      |          |     |
| Central |      | £67,084  | £   |
| East    |      | £108,558 | £1  |
| West    |      | £57,096  | £   |

Description of "Sample Discoverer worksheets in the Video Tutorial Workbook"

Key to figure:

a. The Tabular Layout worksheet, showing profit figures for departments across regions for 2000.

b. The Crosstab Layout worksheet, showing a comparison of profit figures for each department in quarter one (Q1) and quarter two (Q2) across regions for 2000.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)



[Previous](#) [Next](#)

## **What are the new features in Discoverer Plus 11.1.1?**

---

Discoverer Plus has been enhanced with Oracle BI Discoverer Web Services, which is an Application Programming Interface (API) that enables a client to obtain Discoverer connections, workbooks, and worksheets; to execute worksheet queries; and to return worksheet content using the SOAP protocol (version 1.1 with RPC/Encoded messaging format). This API enables you to use Discoverer Plus features programmatically and through the user interface.

For information see the *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Discoverer Web Services API*.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## Where can I find out more about Discoverer Plus Relational?

---

To find out more about Discoverer Plus Relational, use:

- the Discoverer Plus Relational help system

The Discoverer Plus Relational help system gives you context sensitive access to reference information from the *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Discoverer Plus*

Click the Help button or press F1 in any Discoverer Plus Relational dialog to display context sensitive help, or choose Help | Help Topics to see a list of the topics in the help system.

To find a topic in the help system:

- use the Contents tab to see a structured list of the topics in the help system
- use the Index tab to search the help system using pre-defined keywords and phrases
- use the Search tab to search the help system for keywords and phrases that you define
- the *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Discoverer Plus*

The *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Discoverer Plus* available in html and PDF format on:

- the Oracle Application Server Documentation CD
- the Oracle Technology Network at [www.oracle.com/technology](http://www.oracle.com/technology)
- Oracle Technology Network

Other information about Discoverer Plus (for example, white papers, best practices) is available from Oracle Technology Network at [www.oracle.com/technology](http://www.oracle.com/technology).

## Using Discoverer Plus with a multidimensional data source

---

This chapter introduces Discoverer Plus OLAP and contains the following topics:

- ["How can I tell when I am using Discoverer Plus with a multidimensional data source?"](#)
- ["What is Discoverer Plus OLAP?"](#)
- ["What is online analytic processing \(OLAP\)?"](#)
- ["What are multidimensional data sources?"](#)
- ["What are multidimensional cubes?"](#)
- ["What are measures?"](#)
- ["What are dimensions and dimension members?"](#)
- ["What are dimension hierarchies?"](#)
- ["What are dimension attributes?"](#)
- ["About aggregating and filtering multidimensional data"](#)
- ["About applying filters after aggregating multidimensional data"](#)
- ["About filters and dimensions"](#)
- ["What is the Discoverer Catalog?"](#)
- ["About the Discoverer Plus OLAP Tutorial"](#)
- ["Where can I find out more about Discoverer Plus OLAP?"](#)

## How can I tell when I am using Discoverer Plus with a multidimensional data source?

---

When you are using Discoverer Plus with a multidimensional data source, the **Connect to** property of the connection that you choose to start Discoverer Plus is set to Oracle BI Discoverer for OLAP.

If you start Discoverer Plus with a multidimensional data source by entering login details directly in Discoverer Connections page, you must select Oracle BI Discoverer for OLAP from the **Connect To** drop down list.

Note that Discoverer Plus OLAP is not certified for use against an Oracle11g Database.

## What is Discoverer Plus OLAP?

---

Discoverer Plus OLAP enables you to access and analyze multidimensional data from your company's database, without having to understand complex database concepts. Using wizards and menus, Discoverer Plus OLAP guides you through the steps to retrieve and analyze data that supports your business decisions.

### *Oracle BI Discoverer components*



[Description of "Oracle BI Discoverer components"](#)

**Note:** Discoverer Plus OLAP is supplied with sample workbooks stored in the Discoverer Catalog that you can use to familiarize yourself with Discoverer. For more information about accessing the sample workbooks, contact the Discoverer manager.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)



[Previous](#) [Next](#)

## What is online analytic processing (OLAP) ?

---

Online analytic processing (OLAP) describes queries that are run against a multidimensional data source. While a simple query might ask, "When did order 84305 ship?", a typical series of OLAP queries might ask, "How do sales in the Southwestern region for this quarter compare with sales a year ago? What can we predict for sales next quarter? What factors can we alter to improve the sales forecast?".

Most standard queries involve simple data selection and retrieval. However, OLAP queries are more structured and involve calculations, time series analysis, and quick access to aggregated historical and current data. In OLAP queries, you know the dimensions and hierarchies that measures use. You query the data in business terms, such as "How are my products selling in my regions?" Each dimension has its own selection that mirrors the way that you ask questions.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## What are multidimensional data sources ?

---

A multidimensional data source is optimized for analyzing large amounts of data. Such data sources are sometimes called data warehouses, or online analytical processing (OLAP) data sources.

In a relational data source, data is organized in tables. A table is a data structure with columns and rows. Multidimensional data is data that is organized by one or more dimensions. These multidimensional data structures are often referred to as cubes. [Figure: Tables and cubes in the Oracle database](#) depicts the tables in a relational data source and the cubes in a multidimensional data source. Oracle (and later) databases can include both relational data structures (tables and columns) and multidimensional data structures (cubes). This combination provides fast multidimensional data access while providing summaries of the relational data.

### *Tables and cubes in the Oracle database*



[Description of "Tables and cubes in the Oracle database"](#)

For information on relational data sources, see ["What is a relational data source?"](#).

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## What are multidimensional cubes ?

---

A cube in a multidimensional data source has the following components:

- A measure, which is the name given to the data itself; that is, to the data that you track such as sales figures or cost numbers.
- One or more dimensions. Dimension is the name given to the parts of the cube that categorize the data, such as Product, Geography, and Time. Dimensions have dimension members, dimension hierarchies, and attributes.

For example, [Figure: Cube of Sales data](#) shows a cube that contains sales figures for different products in different years and in different cities:

- The sales figures are the data in the cells of the cube. Sales is the measure for this cube.
- The parts of the cube that categorize the data are Product, Time, and City. Product, Time, and City are the dimensions of this cube.

### ***Cube of Sales data***

#### Description of "Cube of Sales data"

The cube contains a measure value for each possible combination of the different dimensions. It is therefore very quick for applications such as Discoverer Plus OLAP to find the value for sales of a particular product in a particular city in a particular year. For example, to find sales of Product C in 2003 in Dallas, Discoverer Plus OLAP simply uses the Product, Time, and City dimensions to identify the cell that contains the required value, as shown in [Figure: One measure value in a cube](#)

### ***One measure value in a cube***

#### Description of "One measure value in a cube"

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## What are measures ?

---

In OLAP metadata, measures represent data that can be examined and analyzed in crosstabs and graphs. Examples include Sales, Cost, and Profit.

Figure: Crosstab that is displaying the Sales measure shows a crosstab in Discoverer Plus OLAP that is displaying data from the Sales measure. Above the crosstab are the page items that allow you to select which page of data to display.

### ***Crosstab that is displaying the Sales measure***

Description of "Crosstab that is displaying the Sales measure"

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.  
[Legal Notices](#)



[Previous](#) [Next](#)

## **What are dimensions and dimension members ?**

---

Measures have dimensions that categorize the data in the measure. For example, a Sales measure might have Product, Time, and Geography as its dimensions. When a measure has a particular dimension, the measure is said to be dimensioned by that dimension. For example, Sales is dimensioned by Product. The group of dimensions for a measure constitute the dimensionality of that measure. For example, the dimensionality of Sales is Product, Time, and Geography.

Each element in a dimension is a dimension member. For example, January 2001, February 2001, March 2001, Quarter 1 2001, and the year 2001 are likely members of the Time dimension.

Measures can be dimensioned by more than three dimensions. In this document, we use a three-dimensional cube to present a virtual and easy-to-understand representation of multidimensional data.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## What are dimension hierarchies ?

---

A dimension hierarchy describes a hierarchical relationship among two or more dimension members.

Individual dimension members might be related to each other in a hierarchical way. For example, a specific day belongs to a particular month, which in turn is within a particular year. To reflect such relationships, dimension members are organized into dimension hierarchies. Hierarchies allow you to drill deeper into the data, to view more detailed information.

A dimension hierarchy can use ordered levels to organize and aggregate data. For example, the Time dimension might have a hierarchy to aggregate data from the Month level to the Quarter level to the Year level. [Figure: Sample dimension hierarchy](#) presents an example of a dimension hierarchy for the Time dimension, which shows how data is ordered by Month, Quarter, and Year. The cell that is highlighted in the cube represents sales of Product D in Cincinnati in 2003. Along the Time dimension, that cell can be broken out into quarters, and each quarter can be broken out further into months.

### ***Sample dimension hierarchy***



[Description of "Sample dimension hierarchy"](#)

[Figure: Alternative view of a time hierarchy](#) presents another view of the hierarchy for the Time dimension. Data for the year 2003 can be broken into four quarters, and each quarter can be broken into three months.

### ***Alternative view of a time hierarchy***



[Description of "Alternative view of a time hierarchy"](#)

A dimension can have multiple hierarchies. For example, a Time dimension might have different hierarchies if a company has a Fiscal year that does not correspond to a Calendar year. One hierarchy might be Calendar Year->Calendar Quarter->Month while another is Fiscal Year->Fiscal Quarter->Month. Where several dimension hierarchies exist for the same dimension, one dimension hierarchy must be specified as the default hierarchy.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)



[Previous](#)



[Next](#)

## What are dimension attributes ?

---

A dimension attribute describes a characteristic that is shared by dimension members. Dimension attributes enable you to select data based on similar characteristics. For example, a Product dimension might have a Color attribute that enables you to search for all red products.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## **About aggregating and filtering multidimensional data**

---

This section describes aggregation and filtering in Discoverer Plus OLAP.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## About applying filters after aggregating multidimensional data

---

When you ask common business questions, you often filter values; that is, you try to find dimension values that meet certain conditions. For example, you may want to look at regions where Sales are greater than \$2 billion. You likely want to examine values that contribute to the success of these regions.

With multidimensional data, the different levels in a hierarchy contain aggregations of the data at lower levels. The aggregation of data values happens first, then you filter those values. Thus, values for aggregate data are not dependent on the filter. For example, suppose you create a query in which you are displaying Total Company and region values where Sales are greater than \$2 billion and Quota Variance is greater than 7%, as shown in "[Example of applying filters after aggregating](#)".

### *Example of applying filters after aggregating*

| Regions     | Sales Dollars            | Quota Variance |
|-------------|--------------------------|----------------|
| - Company A | \$10 billion (immutable) | 10%            |
| + Northeast | \$3.5 billion            | 8%             |
| + Southwest | \$2.2 billion            | 12%            |

The value for Company A's Sales would not change when underlying dimension values have been filtered. So in our example, Company A's Sales remain \$10 billion even though only the regions who Sales are greater than \$2 billion are displayed in the query.

An aggregate value would meet the filter condition even if not all of its children do, which enables you to drill into underlying issues. For example, consider our example above in which Quota Variance is greater than 7% for Company A and for the Northeast and Southwest regions. When you drill into the Southwest region, you discover that the Quota Variance for the state of Arizona is -50%; a pressing problem that needs attention.

Aggregate values and their children are often at different scales. For example, a region might be 100 times bigger than any one of its children.

## About filters and dimensions

---

Filters apply to dimensions. Each dimension has an associated query. The data selected by a dimension's query might or might not be dependent on the data selected by another dimension's query. Consider the following example:

- Time dimension: Select latest 6 months
- Geography: Select territories where Sales is greater than Quota.
- Product: For each territory, select categories where Sales growth is negative.

For clarity, a filter must be fully qualified. For example, suppose you create a query in which you want to display the top three selling products for each Geography, and Time is set to January. If you change the value of Time to February, then you change the result of the query; that is, the top three selling products might be different for February.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## What is the Discoverer Catalog?

---

The Discoverer Catalog is a repository for storing and retrieving definitions of objects for Discoverer Plus OLAP and can be used by applications that are built with Oracle Business Intelligence Beans (BI Beans). With Discoverer Plus OLAP, you use the Catalog to store objects such as workbooks, calculations, and saved selections and to share objects with others who have access to the Catalog. For example, you can use a BI Beans application to create a graph and store it in the Catalog. If another user has appropriate access, that user can retrieve the graph that you stored in the Catalog and insert the graph into a new worksheet in Discoverer Plus OLAP.

The Catalog provides security at the object level, by allowing users and system administrators to specify access to certain objects.

## About the Discoverer Plus OLAP Tutorial

---

For a hands-on introduction to using Discoverer Plus OLAP, see the Discoverer Plus OLAP Tutorial. The tutorial guides you through the creation of a sample workbook, which displays data about a fictitious company.

You can access the Discoverer Plus OLAP Tutorial and other information about Discoverer (such as white papers and best practices) from Oracle Technology Network at [www.oracle.com/technology](http://www.oracle.com/technology).

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## **Where can I find out more about Discoverer Plus OLAP?**

To find out more about Discoverer Plus OLAP, use:

- the Discoverer Plus OLAP help system

Click the Help button or press F1 in any Discoverer Plus OLAP dialog to display context sensitive help, or choose Help | Help Topics to see a list of the topics in the help system.

To find a topic in the help system:

- use the Contents tab to see a structured list of the topics in the help system
  - use the Index tab to search the help system using pre-defined keywords and phrases
  - use the Search tab to search the help system for keywords and phrases that you define
- the Discoverer Plus OLAP Tutorial

Use the Discoverer Plus OLAP tutorial to begin learning about Discoverer Plus OLAP. For more information, see "[About the Discoverer Plus OLAP Tutorial](#)".

- Oracle Technology Network

Other information about Discoverer Plus OLAP (for example, white papers, best practices) is available from Oracle Technology Network at [www.oracle.com/technology](http://www.oracle.com/technology).

## Starting Discoverer

---

This chapter explains how to start Discoverer, and contains the following topics:

- ["What is a Discoverer connection?"](#)
- ["About starting Discoverer"](#)
- ["How to display the Discoverer Plus connections page"](#)
- ["How to start Discoverer using an existing connection"](#)
- ["How to start Discoverer by connecting directly"](#)
- ["How to exit Discoverer Plus"](#)
- ["Frequently asked questions"](#)

## What is a Discoverer connection?

---

A Discoverer connection stores login details that enable you to connect to Discoverer. Each connection stores the following information:

- database user name
- database password (not required for Oracle Applications SSO users)
- database name
- (optional) Oracle Applications responsibility
- language
- 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.

### Notes

- You can also start Discoverer without creating a connection, by connecting directly (for more information, see "[How to start Discoverer by connecting directly](#)").
- For more information about saving login information in a private connection, see "[How do I create and save login information in a Discoverer connection?](#)".
- If you require login details to enable you to create your own Discoverer connections, contact the Discoverer manager.

## About starting Discoverer

The table below show the different ways in which you can start Discoverer.

| To start Discoverer:   | Use this method when:  |
|--|--|
| <p>use an existing pre-defined connection (known as a public connection) created by the Discoverer manager</p> <p><b>Note:</b> Public connections are not available when you start Discoverer Plus OLAP. To start Discoverer Plus OLAP, use a private connection (for more information, see <a href="#">"How do I create and save login information in a Discoverer connection?"</a>), or connect directly (for more information, see <a href="#">"How to start Discoverer by connecting directly"</a>).</p> | <p>the Discoverer manager has created login details for you so that you do not have to supply login details yourself (for more information, see <a href="#">"How to start Discoverer using an existing connection"</a>)</p>  |
| <p>use an existing user-defined connection (known as a private connection) that you created yourself</p>   | <p>you want to connect to Discoverer using login details that you saved previously (for more information, see <a href="#">"How to start Discoverer using an existing connection"</a>)</p> <p>For information about creating a private connection, see <a href="#">"How to start Discoverer using an existing connection"</a></p> |
| <p>create a user-defined connection (known as a private connection)</p>  | <p>you want to connect to Discoverer using a new login (for more information, see <a href="#">"How do I create and save login information in a Discoverer connection?"</a>)</p>  |
| <p>connect directly by entering login details (which are not saved in a connection)</p>  | <p>you want to connect to Discoverer but you do not want to save the login details for later use (for more information, see <a href="#">"How to start Discoverer by connecting directly"</a>)</p>  |

Depending on the internet browser you are using and how your company's network server is configured:

- You might need to follow a one-time-only set up process when you start Discoverer for the first time. This process initializes the Discoverer program on your system. Follow the on-screen instructions to complete the process.
- You might see a dialog about security. This security dialog appears when Discoverer requests extra permissions to access the Discoverer server or local devices (for example, printers). If you do not want to see the dialog every time you connect, select the option "Always trust content from Oracle Corporation." Click Yes (or OK or Grant depending on browser) to continue starting Discoverer.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## How to display the Discoverer Plus connections page

---

You display the Discoverer Plus connections page to select a connection (that is, a stored set of database login details) to start Discoverer Plus or to connect to Discoverer Plus directly. You can also use the Discoverer Plus connections page to edit and delete Discoverer connections.

To start Discoverer using an existing connection:

1. Launch a Web browser.
2. Go to the Discoverer web address given to you by the Discoverer manager.

**Hint:** The Discoverer web address might be:

- the default web page that you access when you start a browser
- an internet address (URL) that you enter in the address field in a browser (for example, a typical URL might be `http://machinename.myorganization.com:7777/discoverer/plus`)
- a link from a portal or other internet or intranet site that you are using

The Connect to Oracle BI Discoverer page is displayed.



A list of the existing Discoverer connections is displayed in the Connection column.

## Notes

- For information on how to create and save a private Discoverer connection, see "[How do I create and save login information in a Discoverer connection?](#)".

## How to start Discoverer using an existing connection

---

When you start Discoverer using an existing connection, you can use any of the following:

- An existing public connection created by the Discoverer manager (available for Discoverer Plus Relational only)
- An existing private connection that you created earlier

To start Discoverer using an existing connection:

1. Display the Discoverer Plus connections page (for more information, see ["How to display the Discoverer Plus connections page"](#)).
2. Select the name of a connection name in the **Connection** column to start Discoverer.

**Hint:** To confirm that you are using the correct login, click Show in the **Details** column to display more information about a login. To hide additional information, click Hide.

You can now begin to analyze data using Discoverer's powerful analysis tools.

### Notes

- For information about how to create and save a private Discoverer connection, see ["How do I create and save login information in a Discoverer connection?"](#)
- You can use only private connections with Discoverer Plus OLAP. Public connections are not supported. However, you can use public connections with Discoverer Viewer and Discoverer portals to access worksheets that you have created with Discoverer Plus OLAP.
- If you have used Oracle's Single Sign-On functionality to establish a database connection, you are not prompted for password information when you start Discoverer Plus.

## How to start Discoverer by connecting directly

---

You start Discoverer by connecting directly when you want to connect to Discoverer but you do not want to save the login details for use later.

To start Discoverer by connecting directly:

1. Display the Discoverer Plus connections page (for more information, see [How to display the Discoverer Plus connections page](#)).
2. Select the Connect Directly link to display the Connect Directly area.
3. Enter login details using the fields provided (for example, User Name, Password, Database).  
Passwords are case-sensitive in Oracle databases (Enterprise Edition release 11.1 or later).
4. Click Go to start Discoverer.

You can now begin to analyze data using Discoverer's powerful analysis tools.

## How to exit Discoverer Plus

---

When you have finished using Discoverer Plus to analyze data, exit the application.

To exit Discoverer Plus:

1. Choose File | Exit.

If there are unsaved changes in one or more currently opened workbooks, a dialog prompts you to save or discard the changes.

- Click Yes to save changes before closing Discoverer. Discoverer saves all changes that you have made since you last saved the workbook.
- Click No to close Discoverer without saving changes. Discoverer saves none of the changes that you have made since you last saved the workbook.

## Notes

- If you started Discoverer from an internet start page, the browser application is not closed.
- If you shut down the web browser that you used to start Discoverer during a Discoverer session, Discoverer also exits.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## Frequently asked questions

---

This section answers frequently asked questions about starting Discoverer, and contains the following topics:

- ["What is the End User Layer \(EUL\)?"](#)
- ["What are database accounts?"](#)
- ["How do I create and save login information in a Discoverer connection?"](#)
- ["How do I edit a Discoverer connection?"](#)
- ["How do I delete a Discoverer connection?"](#)
- ["What are public connections?"](#)
- ["What are user-defined connections?"](#)
- ["When and why should I change my password?"](#)
- ["How do I change the password for a connection?"](#)
- ["How do I change the End User Layer for a Discoverer connection?"](#)
- ["What is Single Sign-on?"](#)
- ["What is the difference between Single Sign-on and Discoverer passwords?"](#)

## What is the End User Layer (EUL)?

---

The EUL is an intuitive, business-focused view of the database that uses terms that you are familiar with and can easily understand. The EUL insulates you from the complexity usually associated with databases. The EUL enables you to focus on business issues instead of data access issues.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## What are database accounts?

---

To use Discoverer, you need a database account that enables you to connect to Discoverer. You store database account details in a Discoverer connection along with EUL and language settings.

**Note:** If your organization uses Single Sign-on (a system for enabling users to log in once to access many different applications), you also need a Single Sign-on account. If you are not sure whether your organization uses Single Sign-on, contact the Discoverer manager. For more information, see "[What is Single Sign-on?](#)".

A database account comprises two pieces of information:

- A user name - a short name by which you are identified in the database. For example, jchan, or marketing.
- A password - a secret key that you use to authenticate your user name. An initial temporary password is created for you by the Discoverer manager. To keep your organization's data secure, do not tell another person what your password is, or write down your password so that other people can read it (for more information, see "[When and why should I change my password?](#)").

## How do I create and save login information in a Discoverer connection?

---

You create and save login information in a new private Discoverer connection when you want to start Discoverer using login details that you have not saved previously.

To create and save login information in a Discoverer connection:

1. Display the Discoverer connections page (for more information, see ["How to display the Discoverer Plus connections page"](#)).
2. Click Create Connection to display the Create Connection: Connection Details page.



[Description of the illustration cm\\_1.gif](#)

3. Choose the type of data you want to analyze:
  - to analyze relational data using Discoverer Plus Relational, select Oracle BI Discoverer from the **Connect to** drop down list
  - to analyze multidimensional data using Discoverer Plus OLAP, select Oracle BI Discoverer for OLAP from the **Connect to** drop down list
  - to analyze Oracle Applications data, select Oracle Applications from the **Connect to** drop down list

4. Enter a connection name by which you want to identify the new connection in the **Connection Name** field.

The connection name is displayed in the Connections column on the Connect to Oracle BI Discoverer page.

5. (optional) Enter a description of the connection in the **Connection Description** field.

For example, you might want to add the names of the workbooks that the connection is used to access.

6. Select the language you want to use from the **Locale** drop down list.

7. Specify the user name, password, and database details for the connection you want to create.

**Hint:** If you are not sure what user name, password, and database details to enter, contact the Discoverer manager.

8. Save the details by doing one of the following:

- Click Apply to save the details you have specified and return to the Connections list.
- Click Apply and Connect to save the details you have specified and start Discoverer using the login details specified.

9. If you selected Oracle Applications in the **Connect To** drop down list and the user has multiple Oracle Applications Responsibilities, the Select Oracle Applications Responsibility page is displayed. Do the following:
  - a. Select a responsibility from the **Oracle Applications** drop down list.
  - b. Click **Apply** to save the details that you specified.
10. (relational data only) If the user name has access to multiple End User Layers, the Create Connection: End User Layer page is displayed. Do the following:
  - a. Select an End User Layer from the **End User Layer** drop down list.
  - b. Click **Apply** to save the details that you specified.

If you clicked **Apply**, the Connect to Oracle BI Discoverer page is displayed. The new connection that you have created is included in the list of connections. To start Discoverer using the connection that you have created, click the new connection name in the Connection list.

If you clicked **Apply** and **Connect**, Discoverer starts and prompts you to select a workbook and worksheet to open.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## How do I edit a Discoverer connection?

---

You edit a Discoverer connection when you want to change the login details stored in that connection. For example, you might want to change the user name that you use to start Discoverer.

To edit a Discoverer connection:

1. Display the Discoverer Plus connections page (for more information, see ["How to display the Discoverer Plus connections page"](#)).
2. Click the pencil icon in the **Update** column next to the name of the connection you want to edit.  
**Hint:** To confirm that you are using the correct connection, click Show in the Details column to display more information about a connection. To hide additional information, click Hide.  
The Edit Connection page is displayed.
3. Change the connection details as required.
4. Save the details by doing one of the following:
  - Click Apply to save the details you have entered and return to the Connections list.
  - Click Apply and Connect to save the details you have entered and start Discoverer using the login details specified.
5. If the user name has access to multiple End User Layers, the Create Connection: End User Layer page is displayed. Do the following:
  - a. Select an End User Layer from the **End User Layer** drop down list.
  - b. Click Apply to save the details that you specified.

If you clicked Apply, the Connect to Oracle BI Discoverer page is displayed. The new connection that you have created is included in the list of connections. To start Discoverer using the connection that you have created, click the new connection name in the Connection list.

If you clicked Apply and Connect, Discoverer starts and prompts you to select a workbook and worksheet to open.

## Notes

- You can only edit private connections that you have created yourself. You cannot edit public connections created by the Discoverer manager.

## How do I delete a Discoverer connection?

---

You delete a Discoverer connection when you want to remove login details permanently. For example, you might want to delete a temporary connection that you no longer need.

To delete a Discoverer connection:

1. Display the Discoverer Plus connections page (for more information, see ["How to display the Discoverer Plus connections page"](#)).
2. Click the trash can icon in the **Delete** column next to the name of the connection you want to delete to display the Confirmation dialog.

**Hint:** To confirm that you are deleting the correct connection, click Show in the Details column to display more information about a connection. To hide additional information, click Hide.

3. Click Yes at the confirmation page to delete the connection and return to the Connect to Oracle BI Discoverer page.

### Notes

- You can only delete private connections that you have created yourself. You cannot delete public connections created by the Discoverer manager.

## What are public connections?

---

Public connections are Discoverer logins created by the Discoverer manager. Public connections enable you to start Discoverer and access workbooks without having to create your own connections.

You cannot edit or delete public connections. Only the Discoverer manager can create, edit, and delete public connections.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)



[Previous](#) [Next](#)

## What are user-defined connections?

---

User-defined connections (also known as private connections) are Discoverer logins that you create yourself. You can edit and delete private connections. Only you can access, edit, and delete the private connections that you create.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)



[Previous](#) [Next](#)

## **When and why should I change my password?**

---

You must change your password periodically to maintain data security.

Your system manager specifies how long you can keep the same password before it expires. In other words, how long you can keep the password before you have to change it.

You know your password has expired if you start Discoverer and are prompted to enter a new password. When you connect to Discoverer, you might be warned that your password will expire in a specified number of days. If you do not change the password in this period, you are prompted to enter a new password when the password expires.

It is also important to change your password if you think that someone else has found out what the password is.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## How do I change the password for a connection?

---

You change the password for a connection when the password:

- has expired
- is about to expire
- has become known by another user

To change the password for a connection:

1. Display the Discoverer Plus connections page (for more information, see "[How to display the Discoverer Plus connections page](#)").
2. Click the **Update** icon next to the connection for which you want to change the password.
3. Click Change Database Password.
4. In the **Password** field, enter the current database password for the current user name.
5. In the **New Password** field, enter a new database password for the current user name.  
Passwords are case-sensitive in Oracle databases (Enterprise Edition release 11.1 or later).
6. In the **Verify Password** field, re-enter the new database password for the current user name.
7. Click Finish.

The Connect to Oracle BI Discoverer page is displayed. You can now use the connection to start Discoverer.

## Notes

- If any of the password details that you entered were invalid, an error message is displayed with advice on which value to change.

## How do I change the End User Layer for a Discoverer connection?

---

You change the End User Layer (EUL) for a Discoverer connection when you want the connection to start Discoverer using a different EUL (for more information, see ["What is the End User Layer \(EUL\)?"](#)).

To change the EUL for a Discoverer connection:

1. Display the Discoverer Plus connections page (for more information, see ["How to display the Discoverer Plus connections page"](#)).
2. Click the Update icon next to the connection for which you want to change the End User Layer.
3. In the **Password** field, enter a valid password for the Discoverer connection.  
Passwords are case-sensitive in Oracle databases (Enterprise Edition release 11.1 or later).
4. Click Continue.
5. If the user name for the current Discoverer connection has access to multiple End User Layers, the Select End User Layer for Discoverer Connection page is displayed. Do the following:
  - a. Select an End User Layer from the **End User Layer** drop down list.
  - b. Click Finish.

The Connect to Oracle BI Discoverer page is displayed. You can now use the connection to start Discoverer.

### Notes

- If the user name does not have access to multiple End User Layers, you cannot change the default End User Layer.
- If the password that you entered was invalid, an error message is displayed with advice on which value to change.



[Previous](#) [Next](#)

## What is Single Sign-on?

---

Oracle Single Sign-On enables users to access multiple Oracle applications (for example, Oracle BI Discoverer) with a single password. Using Single Sign-On, users can log in to Oracle WebLogic Server and gain access to all applications for which they are authorized, without requiring them to re-enter a user name and password for each application.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## What is the difference between Single Sign-on and Discoverer passwords?

---

If your organization uses Single Sign-on, your Discoverer password is separate to 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

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## How do I know what Single Sign-on ID is being used in Discoverer Plus?

---

To find out the Single Sign-on ID being used in Discoverer Plus, choose Help | About Discoverer to display the About Oracle BI Discoverer dialog, and look in the Connected As area.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## About the Discoverer Plus Relational work area

---

This chapter introduces the main dialogs that you work with when you use Discoverer Plus Relational, and includes the following topics:

- ["About the work area"](#)
- ["About Discoverer's drag and drop features"](#)
- ["About Discoverer menus"](#)
- ["About Discoverer toolbars"](#)
- ["About icons used in the Discoverer item navigator"](#)
- ["What are axis items?"](#)
- ["About data points"](#)
- ["What is the Discoverer Worksheet Wizard?"](#)

**Note:** The examples in this chapter use the sample Video Tutorial Workbook that comes with Discoverer. The specific tables, charts, data, and other items you see on your screen depend on the actual data in your database, and the workbook(s) designed by your organization's Discoverer manager.

## About the work area

---

The work area is where you do most of your analysis work with Discoverer. The work area displays the current worksheet and tabs for other worksheets in the current workbook. Discoverer's navigation facilities make it easy to find your way around workbooks and worksheets to find the information you want.

### *The Discoverer work area*

**a** File Edit View Format Tools Help

**b** [Toolbar icons]

**j** [Toolbar icons]

**c** Available Items:

- Items
- Conditions
- Calculations

List: Video Store Tutorial

**c** Video Analysis Information

- Department
- Region
- City
- Store Name
- Calendar Year
- Calendar Quarter
- Calendar Month
- Sales Band
- Profit
- Sales
- Unit Sales
- Cost
- Margin Percentage
- Rank Sales by Year, Dept, Reg
- Sales Last Year
- Department is Video Rental or
- Year is 1998 or 1999

**d** Selected Items:

- Region
- Profit SUM
- Calendar Year
- Calendar Year = :Calendar Year Parame

**f** Analysis of Video Rentals and Video Sales

Page Items: Year: 2000

| Region    | Profit SUM |
|-----------|------------|
| 1 Central | \$112,538  |
| 2 East    | \$180,283  |
| 3 West    | \$91,964   |

**g** Profits Summary for Region

**e** [Bottom navigation tabs]

Tabular Layout | Crosstab Layout | **Regions** | Tabular Layout 2 | Breakdown

Key to figure:

- a.** Menu bar. Click a menu item (for example, File) to display the menu options.
- b.** Standard toolbar. To display toolbars, choose View | Toolbars and choose the toolbar to display.
- c.** Available Items Pane (also referred to as the Discoverer item navigator), showing the folders and items in the selected business area. To display the Available Items Pane, choose View | Available Items Pane.
- d.** Selected Items Pane, showing the items included in the worksheet and graph area. To display the Selected Items Pane, choose View | Selected Items Pane.
- e.** Tabs for worksheets in the workbook. Click on another worksheet tab to display that worksheet.
- f.** Worksheet title area (also referred to as the worksheet header). To display the worksheet title area, choose View | Title.
- g.** Page items area. To display the page items area, choose View | Page Items.
- h.** Worksheet and graph area. To display the worksheet area, choose View | Table (on a table worksheet or View | Crosstab (on a crosstab worksheet). To view the worksheet graph area, choose View | Graph. The graph can be positioned as required (for example, above, below, to the right of the worksheet area).
- i.** Worksheet text area (also referred to as the worksheet footer). To display the worksheet text area, choose View | Text Area.
- j.** Business area list, showing the business areas you can access.

You can analyze data in the Discoverer work area in different ways:

- using drag and drop (for more information, see "[About Discoverer's drag and drop features](#)")
- using menus (for more information, see "[About Discoverer menus](#)")
- using toolbars (for more information, see "[About Discoverer toolbars](#)")
- using the worksheet wizard (for more information, see "[What is the Discoverer Worksheet Wizard?](#)")

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## About Discoverer's drag and drop features

---

When you are working in Discoverer, use the following drag and drop features:

- add items to a worksheet by dragging and dropping the item from the Available Items pane onto the worksheet (for more information, see "[About dragging and dropping items in the Discoverer work area](#)")
- reposition items on a worksheet by dragging and dropping items into position (for more information, see "[About repositioning items in the Discoverer work area](#)")

## About dragging and dropping items in the Discoverer work area

---

As well as using the menus to add and remove items, you can drag and drop items on a worksheet. The example below shows how to add an item to a worksheet by dragging an item from the Available Items pane onto the worksheet.

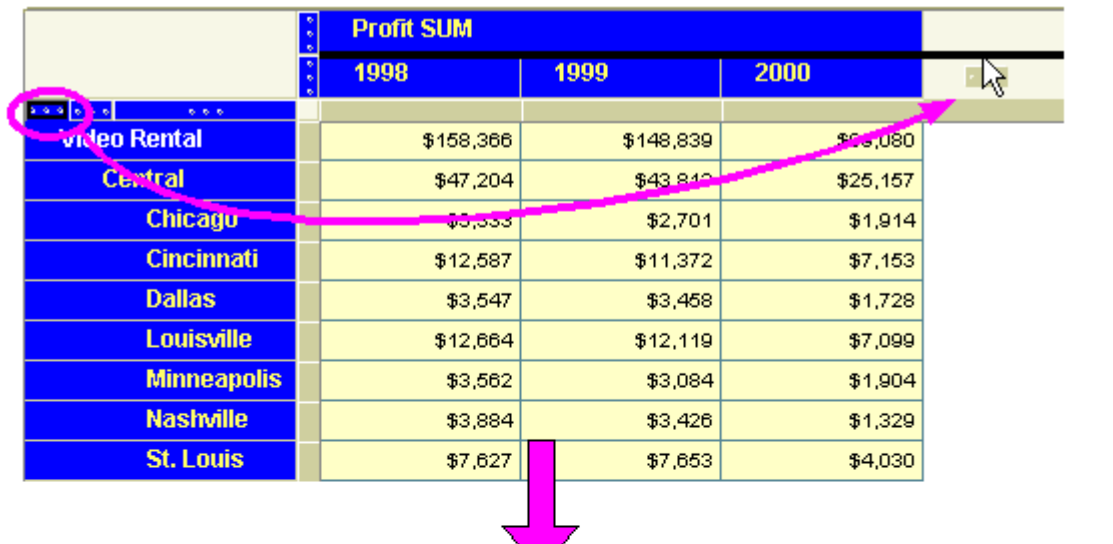
### *Adding an item to a worksheet*

To remove a worksheet item, you can also drag and drop the item off the worksheet drag to anywhere outside of the worksheet area (except the Selected Items pane, if displayed).

## About repositioning items in the Discoverer work area

As well as using the menus to add and remove items, you can reposition a worksheet item by dragging it from one area of the worksheet to another area of the worksheet. In the example below, the Department item is dragged from the left axis to the top axis.

### Rearranging a worksheet item



|                     | Profit SUM |           |          |
|---------------------|------------|-----------|----------|
|                     | 1998       | 1999      | 2000     |
| <b>Video Rental</b> | \$158,366  | \$148,839 | \$89,080 |
| <b>Central</b>      | \$47,204   | \$43,813  | \$25,157 |
| <b>Chicago</b>      | \$3,333    | \$2,701   | \$1,914  |
| <b>Cincinnati</b>   | \$12,587   | \$11,372  | \$7,153  |
| <b>Dallas</b>       | \$3,547    | \$3,458   | \$1,728  |
| <b>Louisville</b>   | \$12,664   | \$12,119  | \$7,099  |
| <b>Minneapolis</b>  | \$3,562    | \$3,084   | \$1,904  |
| <b>Nashville</b>    | \$3,884    | \$3,426   | \$1,329  |
| <b>St. Louis</b>    | \$7,627    | \$7,653   | \$4,030  |

|                    | Video Rental |           |          | Video Sale |           |           |
|--------------------|--------------|-----------|----------|------------|-----------|-----------|
|                    | 1998         | 1999      | 2000     | 1998       | 1999      | 2000      |
| <b>Profit SUM</b>  | \$158,366    | \$148,839 | \$89,080 | \$232,738  | \$330,556 | \$231,222 |
| <b>Central</b>     | \$47,204     | \$43,813  | \$25,157 | \$67,084   | \$97,921  | \$69,493  |
| <b>Chicago</b>     | \$3,333      | \$2,701   | \$1,914  | \$5,354    | \$10,250  | \$5,096   |
| <b>Cincinnati</b>  | \$12,587     | \$11,372  | \$7,153  | \$18,742   | \$28,406  | \$22,325  |
| <b>Dallas</b>      | \$3,547      | \$3,458   | \$1,728  | \$4,774    | \$4,319   | \$4,049   |
| <b>Louisville</b>  | \$12,664     | \$12,119  | \$7,099  | \$17,103   | \$25,453  | \$15,997  |
| <b>Minneapolis</b> | \$3,562      | \$3,084   | \$1,904  | \$6,030    | \$6,842   | \$5,141   |
| <b>Nashville</b>   | \$3,884      | \$3,426   | \$1,329  | \$3,571    | \$5,379   | \$4,616   |
| <b>St. Louis</b>   | \$7,627      | \$7,653   | \$4,030  | \$11,511   | \$17,273  | \$12,270  |

**Note:** The black bar below the Profit SUM heading indicates where the item will be dragged to. You can also drop an item on top of another item to swap the positions of the two items (the target item is marked with a gray bar).

Dragging items to a different axis on a crosstab worksheet is known as pivoting (for more information, see "[Pivoting data](#)").

## About Discoverer menus

---

In Discoverer you can use a standard menu and a range of right-click menus to perform tasks.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## About the Standard Discoverer menu

---

The standard menu is displayed at the top of the Discoverer work area. The standard menu includes options in these categories: File, Edit, View, Format, Tools, and Help.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## About Discoverer's right-click menus

Right-click on any worksheet item heading to display a right-click menu of options that enable you to perform the most common analysis tasks. In the example below, right-clicking on the Profit SUM item displays a list of options that can be used to analyze this item.

Page Items: **Region: Central** **Department: VIDEO RENTAL**

|    | Year | Month | Profit SUM |
|----|------|-------|------------|
| 1  | 1998 | Dec   |            |
| 2  |      | Nov   |            |
| 3  |      | Oct   |            |
| 4  |      | Sep   |            |
| 5  |      | Aug   |            |
| 6  |      | Jul   |            |
| 7  |      | Jun   |            |
| 8  |      | May   |            |
| 9  |      | Apr   |            |
| 10 |      | Mar   |            |

- Copy
- Remove from Worksheet**
- Move Profit SUM To ▶
- Format Data...
- Format Heading...
- Edit Heading...
- Conditional Formats...
- Column Width...
- Column Auto Size
- Group Sort
- Sort Low To High
- Sort High To Low

## About Discoverer toolbars

---

In Discoverer you use a range of toolbars to access Discoverer's powerful features quickly and easily.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

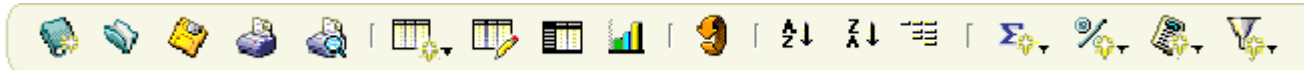
[Legal Notices](#)

## About the Standard toolbar

---

The Standard toolbar contains icons for the most common menu options (for example, Save, Print, Refresh, Edit Worksheet, Sort). As you become more familiar with Discoverer, you can use the toolbar instead of the menu bar to choose options.

### *Standard toolbar*



To display the Standard toolbar, choose View | Toolbars| Standard Toolbar.

**Hint:** To display the name of a toolbar option, move the cursor over the toolbar option to display a tool tip on that option. For more information, see "[About tool tips](#)".

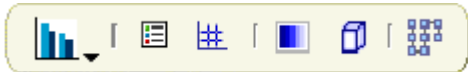


## About the Graph toolbar

---

The graph toolbar enables you to edit graphs.

### *Graph toolbar*



To display the Graph toolbar, choose View | Toolbars | Graph Toolbar.

**Hint:** To display the name of a toolbar option, move the cursor over the toolbar option to display a tool tip on that option. For more information, see "[About tool tips](#)".

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## About the Available Items toolbar

---

The Available Items toolbar enables you to edit the worksheet using all items available in the business area.

### *Available Items toolbar*



The Available Items toolbar is displayed above the Available Items pane. To display the Available Items pane, choose View | Available Items Pane.

For more information about options on the Available Items toolbar, see "[Available Items pane](#)".

## About the Selected Items toolbar

---

The Selected Items toolbar enables you to edit worksheet items currently on the worksheet.

### *Selected Items toolbar*



The Selected Items toolbar is displayed above the Selected Items pane. To display the Selected Items pane choose View | Selected Items Pane.

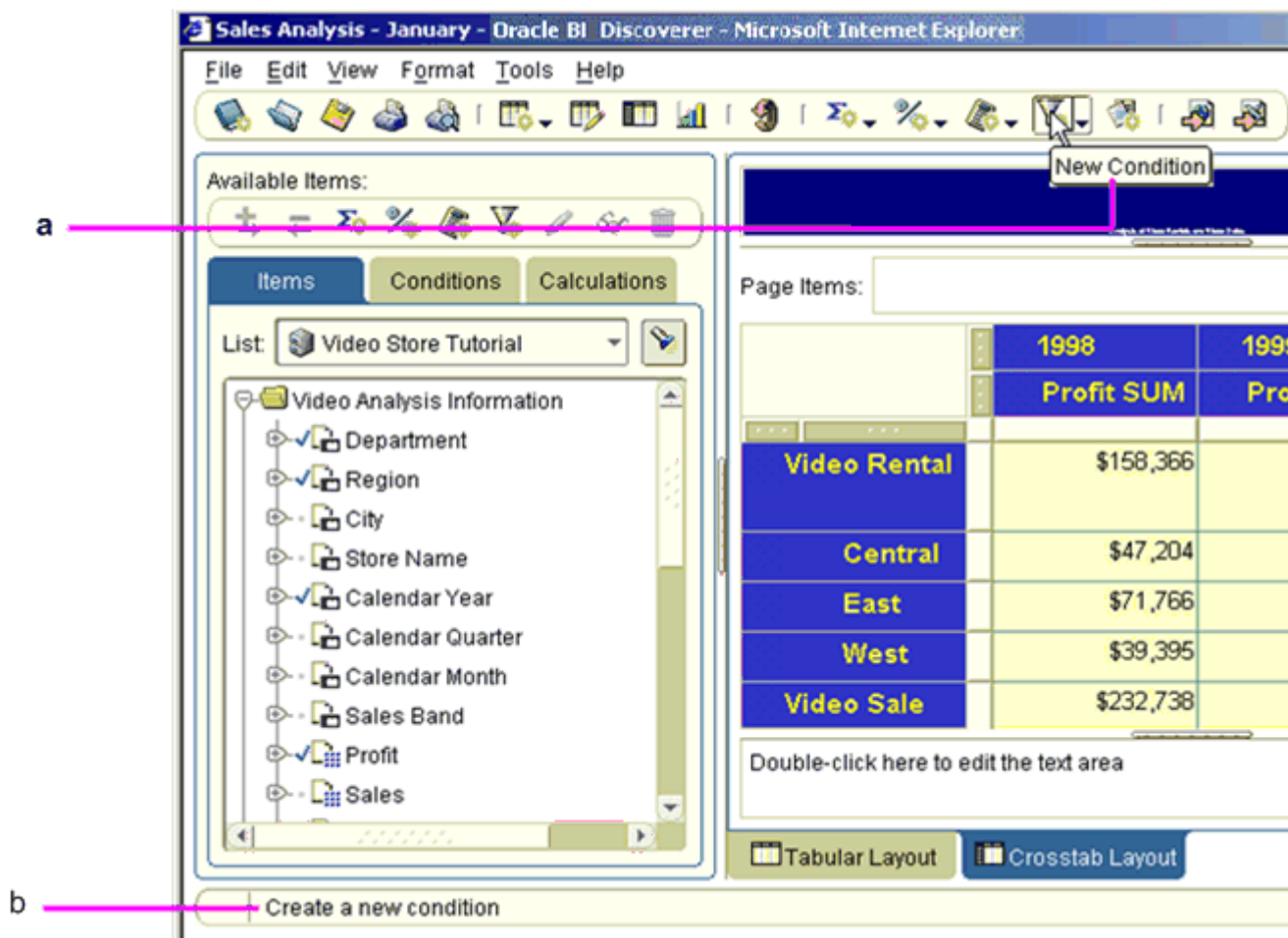
For more information about options on the Selected Items toolbar, see "[Selected items pane](#)".

## About tool tips

To help you use Discoverer, tool tips are displayed when you move the cursor over toolbar options. Additional information on toolbar options is also displayed at the bottom of the work area.

The figure below shows the tool tip for the Conditions toolbar item and also shows where additional information is displayed at the bottom of the Discoverer work area.

### *Discoverer tool tips and status bar*



Key to figure:

**a.** When you move a pointer over a button, the button enlarges and displays a tool tip that describes the button. In this example, the button is New Condition.












**b.** The status bar at the bottom of the Discoverer work area displays additional information about the option in focus.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## About icons used in the Discoverer item navigator

The following table shows the icons displayed in the Discoverer item navigator.

| Icon   | Description  |
|--|--|
|  <b>SUM</b>     | Aggregations - the mathematical functions to aggregate data. For text items (for example, Region), the typical aggregations are Count, Max, and Min. For example, you can count the number of Regions items, or find the highest or lowest (where A might be the highest and Z the lowest). For numeric items, typical aggregations are Sum, Count, Max, Min, Average, and Detail. For example, you can find the Sum or Average of the numeric data. The default aggregation (specified by the Discoverer manager) is displayed in bold. |
|                 | Business area - displays a business area created by the Discoverer manager. To select another business area for the new worksheet, click the drop-down arrow and choose from the list of business areas. A business area contains one or more folders.   |
|                 | Calculation - a mathematical expression to produce new data from other items.<br><b>Note:</b> Calculations defined by the Discoverer manager appear in folders. User-defined calculations do not appear in folders.  |
|                 | Condition - a filter for finding specific data.<br><b>Note:</b> Conditions defined by the Discoverer manager appear in folders. User-defined conditions do not appear in folders.  |
|               | Folder - contains the items that you can include in your worksheets. Click the plus (+) and minus (-) symbol next to the folder to open and close the folder.  |
|               | Item - corresponds to a column on a table or a level on a crosstab axis. Axis items remain constant and have relatively few unique values (for example, the names of departments in your organization, the names of your Sales Regions). The values of an axis item are shown as a list of values (LOV).   |
|  <b>North</b> | Item Value - an item in a list of values (LOV).  |
|               | Numeric Item - represents numeric data. The values of numeric items can change as you analyze the data (for example, summing profits produces different results for cities than for regions). Numeric items behave as axis items on table worksheets and correspond to the data in the body of a crosstab.   |
|               | Percentage - a percentage that Discoverer calculates to summarize values in a numeric worksheet item.  |
|               | Worksheet items marked with a checkmark are currently displayed on the current worksheet.  |
|               | Total - a total that Discoverer calculates to summarize values in a numeric worksheet item.  |

**Note:** Items that are grayed out are not available to the worksheet.

## What are axis items?

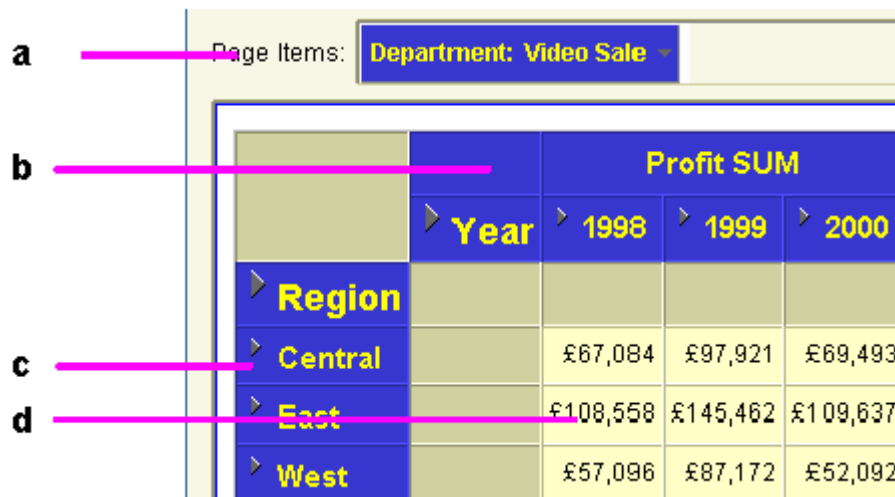
Axis items are items that appear in the workbook window in:

- the page axis
- the top axis
- the left axis

Typically, axis items have a relatively few discrete values. You use axis items to identify particular data values.

For example, if a crosstab worksheet shows sales figures, it might include Year as the top axis and Region as the left axis. In the figure below, Department item is on the page axis, Year is on the top axis, and Region is on the left axis.

***A crosstab worksheet showing page axis, left axis, and top axis***



|                                    |        |            |          |          |
|------------------------------------|--------|------------|----------|----------|
| Page Items: Department: Video Sale |        |            |          |          |
|                                    |        | Profit SUM |          |          |
|                                    | > Year | > 1998     | > 1999   | > 2000   |
| > Region                           |        |            |          |          |
| > Central                          |        | £67,084    | £97,921  | £69,493  |
| > East                             |        | £108,558   | £145,462 | £109,637 |
| > West                             |        | £57,096    | £87,172  | £52,092  |

Key to figure:

- a.** The page axis (Page Items area).
- b.** The top axis.
- c.** The left axis.
- d.** Data points.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)



[Previous](#) [Next](#)

## About data points

---

Data points on a worksheet are the data in the body of a worksheet. Data points are the data that you want to use for analysis purposes. Typically:

- On a table worksheet, data points contain text and numeric information (for example, customer mailing lists, product part number lists).
- On a crosstab worksheet, data points contain numeric values calculated at the intersection point of the top axis and left axis (for example, monthly profits, sales amounts by product).

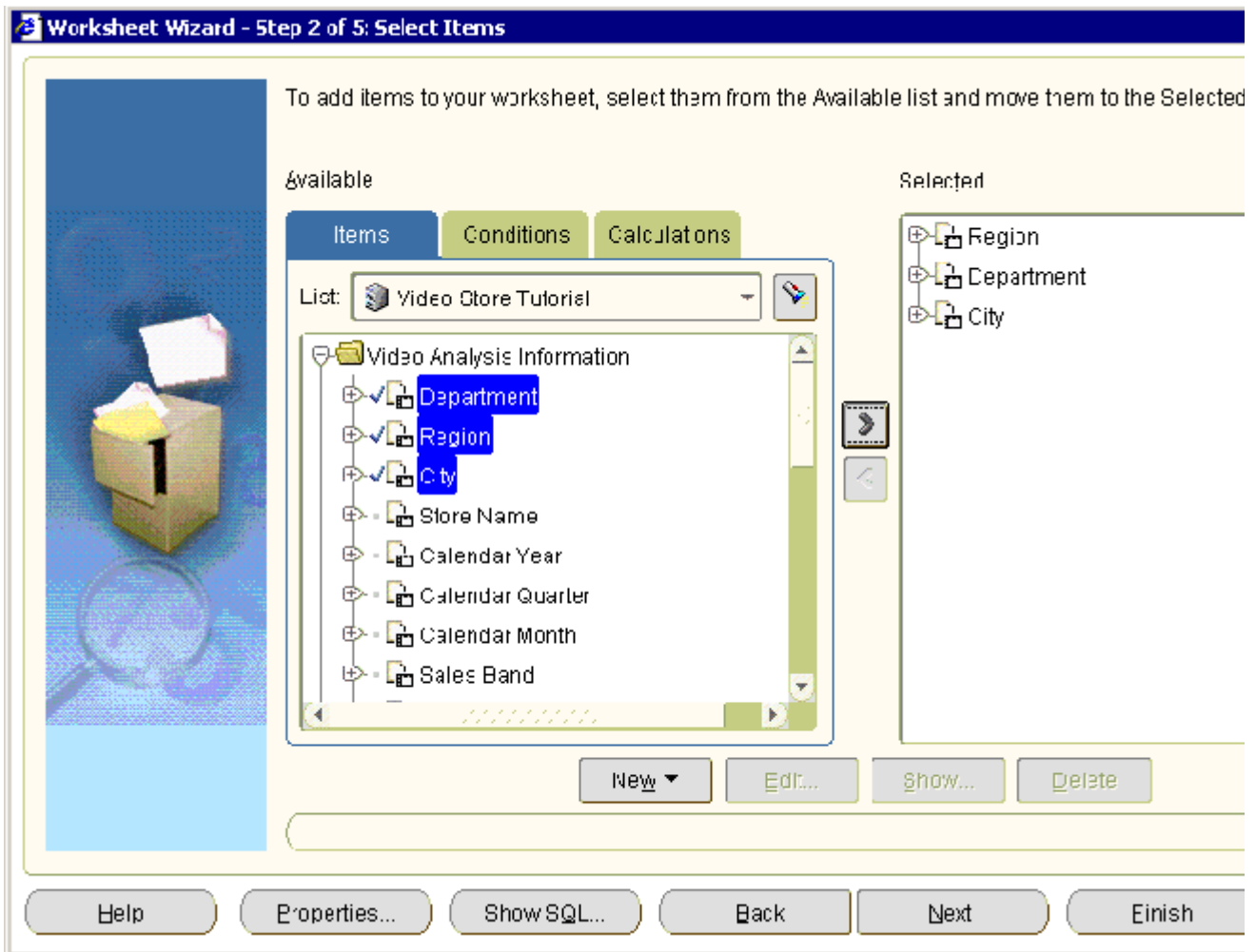
Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## What is the Discoverer Worksheet Wizard?

Whenever you create a worksheet, the Worksheet Wizard walks you through the steps necessary to get data from the database and arrange the worksheet items. The figure below shows the Select Items page of the Worksheet Wizard. In the **Available** list, simply select the folder or item you want to add to the worksheet then drag it to the **Selected** list.

### *The item navigator page of the Discoverer Worksheet Wizard*



## Using workbooks and worksheets

---

This chapter explains how to use Discoverer Plus Relational workbooks and worksheets, and contains the following topics:

- ["What are workbooks?"](#)
- ["What are worksheets?"](#)
- ["About designing workbooks for maximum performance"](#)
- ["How to open workbooks"](#)
- ["About opening workbooks in a non-Oracle database"](#)
- ["How to edit workbooks"](#)
- ["About saving a workbook to the database"](#)
- ["How to save workbooks"](#)
- ["How to copy workbooks"](#)
- ["How to delete workbooks from the database"](#)
- ["About worksheet titles and text"](#)
- ["How to create or edit worksheet titles or text"](#)
- ["How to display or hide worksheet titles or text"](#)
- ["How to rename worksheets and workbooks"](#)
- ["How to re-order worksheets within a workbook"](#)
- ["How to refresh worksheets"](#)
- ["How to delete worksheets"](#)
- ["How to find data in a worksheet"](#)
- ["About creating new workbooks"](#)
- ["How to create new workbooks"](#)
- ["How to add worksheets to a workbook"](#)
- ["How to view and update a workbook's properties"](#)
- ["About worksheet properties"](#)
- ["How to view and edit worksheet properties"](#)

## What are workbooks?

---

Workbooks are Discoverer files that contain worksheets displaying data retrieved from the database. If you are familiar with spreadsheet applications (for example, Microsoft Excel), think of a workbook as a spreadsheet file. Discoverer workbooks are stored in the database.

Workbooks typically contain data that is related in some way but organized to show different perspectives. For example, you might want to analyze different aspects of sales performance and create different worksheets for each aspect. For example (see figure below):

- a worksheet called Rank of Sales to calculate a ranked list of cities based on sales performance
- a worksheet called Top N/Bottom N to calculate the best sales performers and worst sales performers
- a worksheet called Moving Average to calculate a rolling three-month average for sales figures

**Note:** For more information about maximizing Discoverer performance, see "[About designing workbooks for maximum performance](#)".

### *A Discoverer workbook containing multiple worksheets*



You use workbooks in the following ways:

- You can create your own workbooks that you can subsequently share with other Discoverer users. Or, you can use workbooks created by other Discoverer users or by the Discoverer manager. For more information about sharing workbooks, see "[Sharing workbooks](#)".
- You can include parameters to filter the workbook each time it is opened or refreshed. Including parameters enables workbook users to filter out data that they are not interested in and go directly to the data that they want to analyze. For more information about using parameters, see "[Using parameters](#)".
- You can save workbooks to the database using Discoverer Plus Relational, and open workbooks from the database.
- You can schedule workbooks to be processed at a particular time and frequency (for more information, see "[Using scheduled workbooks](#)").

## What are worksheets?

---

Worksheets contain the data you want to analyze and several features to help you analyze the data. For example, a worksheet can contain parameters, totals, percentages, exceptions, and calculations.

You create a worksheet in a workbook (for more information, see "[What are workbooks?](#)").

If you are familiar with spreadsheet applications (for example, Microsoft Excel), think of a workbook as a spreadsheet file and worksheets as different sheets in that spreadsheet file.

In the figure below, a Discoverer worksheet called Tabular Layout contains information about profits made by two departments across three regions in the year 2000.

### ***A Discoverer worksheet***



You can develop worksheets in different ways:

- you can create your own worksheets, which you can subsequently share with other Discoverer users.
- you can use worksheets created by other Discoverer users or by the Discoverer manager
- you can include parameters in a worksheet to filter the worksheet each time it is opened or refreshed

## About Discoverer worksheet types

---

In Discoverer you can display data in two different ways:

- in a table worksheet - see "[About table worksheets](#)"
- in a crosstab (that is, cross-tabular) worksheet - see "[About crosstab worksheets](#)"

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.  
[Legal Notices](#)

## About table worksheets

---

A table worksheet lists data in rows and columns. The figure below shows an example table worksheet analyzing profit values for cities within a region.

### *A table worksheet*

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.  
[Legal Notices](#)

## About crosstab worksheets

---

A crosstab worksheet (short for cross-tabulated worksheet) relates two different sets of data and summarizes their interrelationship in terms of a third set of data. The figure below shows an example crosstab analyzing profit values for regions by department.

### *A crosstab worksheet*

Key to figure:

- a.** Top axis, containing the Region item.
- b.** Left axis, containing the Department item.
- c.** Data points, containing profit sum figures for each region in each department.

The region and department items are displayed as rows and columns on the crosstab. Each row and column intersection shows a data point, which in this case is the profit total for a particular region and a particular department.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.  
[Legal Notices](#)

## **About designing workbooks for maximum performance**

Whether you are using Discoverer Plus Relational to perform ad hoc queries, or to create reports for other end users, you want to minimize the time it takes to run queries and reports. By following a few simple design guidelines, you can maximize Discoverer performance.

Where possible:

- use tabular reports rather than cross-tabular reports
- minimize the number of page items in reports
- avoid wide cross tabular report
- avoid creating reports that return tens of thousands of rows
- provide parameters to reduce the amount of data produced
- minimize the number of worksheets in workbooks
- remove extraneous worksheets from workbooks (especially if end users frequently use Discoverer's export option, see Notes below)

### **Notes**

- When end users export data in Discoverer Plus Relational or Discoverer Viewer, they can export either the current worksheet or all the worksheets. In other words, they cannot selectively choose the worksheets to be exported. Remove extraneous worksheets so that extra data is not included when end users export all worksheets.

## How to open workbooks

---

You open a workbook when you want to access Discoverer worksheets that you have saved previously or have been shared with you. For example, you might open a sales report that you saved previously. Or, you might open a large report that you scheduled to be processed overnight.

You can also open workbooks or scheduled workbook results that other users have shared with you.

To open a workbook:

1. Start Discoverer (for more information, see "[About starting Discoverer](#)").

When you start Discoverer, the "[Workbook Wizard: Create/Open Workbook dialog](#)" is displayed.

**Hint:** If you have started Discoverer, choose File | Open to display the "[Open Workbook from Database dialog](#)" and skip the next step.

2. Click the **Open an existing workbook** button to display the "[Open Workbook from Database dialog](#)".

Workbooks are displayed with a book icon. Scheduled workbooks are displayed with a clock icon.

3. Select the workbook you want to analyze from the **Workbooks** list.

**Hint:** To open a scheduled workbook, click the + symbol next to the scheduled workbook to expand the list of scheduled workbook results and select a set of results.

4. Click Open to display the selected workbook or set of results.

Discoverer analyzes the workbook to determine how long it would take to open the first worksheet. Depending on how Discoverer is configured, a progress dialog shows you the estimated time for loading the first worksheet.

For more information about configuration settings, see "[Changing default settings](#)".

5. (optional) If the workbook or worksheet includes a parameter, Discoverer prompts you to enter a value with which to filter the data in the worksheet (for more information, see "[How to set parameters](#)").

Discoverer opens the workbook and displays the first worksheet. If the workbook contains multiple worksheets, the worksheets are displayed as tabs along the bottom of the Discoverer window.

Now you are ready to begin analyzing data using Discoverer!

## Notes

- If the time estimate for opening a workbook exceeds the value you set in the "[Options dialog: Query Governor tab](#)" (for more information, see "[How to change default Discoverer settings](#)"), Discoverer displays a dialog, which you use as follows:

- Click Yes to open the workbook, regardless of the time estimate. If the query estimate is more than a few minutes, you can do other work while Discoverer gets the data for the worksheet.
- Click No to open the workbook, but to show no data in the first worksheet. If you click No, you can always run the query for the first worksheet at a later time by choosing Tools | Refresh Sheet.

For example, you might click No if the data that you want is not in the first worksheet in the workbook. Click the other worksheet's tab at the bottom of the window. If you click No, you can always run the query for the first worksheet at a later time by choosing Tools | Refresh Sheet.

- If you are connected to Discoverer, choose Tools | Scheduling to open scheduled workbooks from the "Scheduling Manager dialog".



[Previous](#)



[Next](#)

## About opening workbooks in a non-Oracle database

---

If your organization uses non-Oracle databases, the Discoverer manager can set up Discoverer to open workbooks in those databases. You can then use Discoverer to get the data you want. However, depending on the type of database, you might not be able to use all of the data access and analysis features available with Oracle databases. For more information, contact the Discoverer manager.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## How to edit workbooks

---

You edit a workbook when you want to update the workbook's worksheets, or change the workbook's properties. For example, you might want to add or remove worksheets, or share the workbook with other Discoverer users.

To edit a workbook:

1. Open the workbook you want to edit from the database (for more information, "[How to open workbooks](#)").
2. Make changes to the workbook or the worksheets contained within the workbook.
3. Choose File | Save to save the workbook to the database (for more information, "[About saving a workbook to the database](#)").

Discoverer updates the workbook as you specified.

## About saving a workbook to the database

---

You might want to save a workbook that you have created so that you can use the workbook again. When you save a workbook using Discoverer Plus Relational, you save the workbook in the database. Having saved the workbook in the database, you can open the workbook later using Discoverer Plus Relational, Discoverer Viewer, and Oracle BI Discoverer Desktop.

Before you can save a workbook to the database, the Discoverer manager must have given you permission to do so. The Discoverer manager gives you permission to save workbooks to the database by granting you a Discoverer privilege. Provided that you have this privilege, you can:

- save changes to the workbooks that you have created
- open a shared workbook and save the workbook as your own private copy of that workbook (for more information, see "[About sharing workbooks](#)")

Contact the Discoverer manager to find out whether you can save workbooks to the database.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## How to save workbooks

---

You save a workbook when you want to store Discoverer worksheets in the database. When a workbook is saved to the database, it is available in Discoverer Plus Relational and Discoverer Viewer to all users with which it is shared (for more information, see "[About sharing workbooks](#)").

**Hint:** Before you can save it to the database, the Discoverer manager must have given you permission to do so. For more information, see "[About saving a workbook to the database](#)".

To save a workbook for the first time:

1. Choose File | Save to display the "[Save Workbook to Database dialog](#)".

2. Enter a new unique workbook name in the **New name** field.

**Hint:** You can enter a name that includes upper or lowercase characters, and spaces (for example *Jchan Sales Analysis Workbook for March*).

**Note:** To avoid export issues on some platforms, do not use the colon (:) in workbook names.

3. Click Save to save the workbook.

The workbook is saved to the database, and is now available in Discoverer Plus Relational and Discoverer Viewer to all users with which it is shared (for more information about sharing workbooks, see "[About sharing workbooks](#)").

To save changes to a workbook and keep the workbook open:

1. Choose File | Save.

The changes are saved and the workbook remains open.

To save changes to a workbook and close the workbook:

1. Choose File | Close.

If you have not made changes to any worksheet in the workbook, the workbook closes. If the workbook contains unsaved changes on any worksheet, a prompt reminds you to save the changes.

To make a copy of a workbook:

1. Open a workbook.
2. Choose File | Save As.
3. Enter a new name in the **New name** field.

## Notes

- You can only save changes to a shared workbook if you own that workbook. If you change a shared workbook that you do not own and you want to keep the changes, you must save a copy of the shared workbook by selecting File | Save As. The copy of the shared workbook containing your changes becomes your own private copy of the workbook. The original shared workbook remains unchanged. For more information about shared workbooks, see "[About sharing workbooks](#)".

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.  
[Legal Notices](#)

## How to copy workbooks

---

You copy a workbook when you want to save a previous version of a workbook. For example, you might want to make a backup copy of a sales workbook.

To copy a workbook:

1. Open a workbook.
2. Choose File | Save As to display the "Save Workbook to Database dialog".
3. Enter a new name in the **New name** field and click OK to save the copy of the workbook.

Discoverer saves the copy of the workbook using the name that you specified.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.


[Legal Notices](#)

## How to delete workbooks from the database

---

You delete a workbook when you no longer want to use the workbook, and want to remove it permanently from the database. Before deleting old workbooks, ensure that no other Discoverer users want to use the workbook in the future.

To delete a workbook from the database:

1. Choose Tools | Manage Workbooks to display the "[Manage Workbooks dialog](#)".  

2. Select the workbook you want to delete from the **Workbooks** list.
3. Click Delete to delete the workbook and close the dialog.

**Note:** You can only delete workbooks that you own. The Delete button is only grayed out if you do not own the currently selected workbook (for more information, see "[About sharing workbooks and security](#)").

4. Click Yes at the confirmation dialog.

The selected workbook is permanently removed from the database.



[Previous](#) [Next](#)

## About worksheet titles and text

---

A worksheet title is the text that you display in the title area at the top of a Discoverer worksheet. Worksheet text is the text that you display in the text area at the bottom of a Discoverer worksheet. For example, you might want to display the name of the workbook owner in the title area or text area when you print a worksheet. Or you might want to display custom help text for a worksheet in the worksheet text area.

Worksheet titles and text can contain static text (for example, text that you enter) and text variables (for example, date and time that are updated at run time).

The figure below shows an example of a worksheet with a worksheet title area and worksheet text. The worksheet title contains the worksheet name and the print date. The worksheet text area contains the workbook name, worksheet name, a list of worksheet items, and the name of the worksheet creator.

***A Discoverer worksheet containing a worksheet title***

Sales Analysis - January - Oracle BI Discoverer - Microsoft Internet Explorer

File Edit View Format Tools Help

Analysis of Video Rentals and Video Sales  
Print Date: 06-MAY-04

Page Items: Year: 2000

|   | Region  | Profit SUM |
|---|---------|------------|
| 1 | Central | \$112,538  |
| 2 | East    | \$180,283  |
| 3 | West    | \$91,964   |

**Profits Summary for Regions**

Central, East, West, Profit SUM

Created by: J Chan  
21 January

Tabular Layout Crosstab Layout **Regions** Breakdown

Key to figure:

- The worksheet title area.
- Text added to the worksheet title area.
- A text variable (that is, &Date), which displays the current date.
- The worksheet text area.
- Worksheet text.

## Notes

- If you print a worksheet that includes a worksheet title and text, Discoverer enables you to specify whether you print the worksheet title and text once or on every printed page. By default, the worksheet title is printed once at the top of a worksheet (regardless of how many pages are printed) and the worksheet text is printed once after the worksheet (regardless of how many pages are printed). For example, if a report is six pages long, the worksheet title is printed on page one and the worksheet text is printed on page six (by default).

- To print a worksheet title and text, ensure that you display the worksheet title and text on screen before printing.
- Text variables that you can display in worksheet titles and text include workbook name, worksheet name, date, time, page number, total pages.
- If you use Discoverer Plus Relational to open a worksheet that was created using Discoverer Desktop Version 9.0.4 (or earlier), the size of the title area for that worksheet defaults to two lines in height. A title height of two lines might be a problem if a worksheet title requires more than or less than two lines. To change the size of the title area, you must manually resize the title area and save the worksheet.

To resize the title area for a worksheet, open the worksheet and drag the bar at the bottom of the title area pane up or down.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## How to create or edit worksheet titles or text

---

You create or edit worksheet titles and text when you want to add text to the top or bottom of a worksheet. For example, you might want to display the current date at the top of a weekly report.

To create or edit a worksheet title or worksheet text:

1. Open the workbook containing the worksheet you want to edit (for more information, see "[How to open workbooks](#)").
2. Display the worksheet you want to edit.
3. To edit or create worksheet title text, choose Edit | Title to display the "[Edit Title dialog](#)" and use this dialog to specify a worksheet title, as follows:
  - Use the Font, Size, Color, and Background color buttons to format the worksheet title area.
  - Use the Title field to enter text you want to display in the title area of the worksheet.
  - Use the Insert drop down list to add text variables (for example, date and time that are updated at run time).

**Hint:** You can also double-click the worksheet title area (if displayed) to display the "[Edit Title dialog](#)". For more information, see "[How to display or hide worksheet titles or text](#)".

4. To edit or create worksheet text, choose Edit | Text Area to display the "[Edit Text Area dialog](#)" and use this dialog to specify worksheet text, as follows:
  - Use the Font, Size, Color, and Background color buttons to format text in the worksheet text area.
  - Use the Text field to enter text you want to display in the text area on the worksheet.
  - Use the Insert drop down list to add text variables (for example, date and time that are updated at run time).



**Hint:** You can also double-click the worksheet text area (if displayed) to display the "[Edit Text Area dialog](#)". For more information, see "[How to display or hide worksheet titles or text](#)".

5. Click OK to save changes that you make.

The worksheet is updated with changes that you specified.

## How to display or hide worksheet titles or text

---

You can display or hide a worksheet title or worksheet text when the worksheet is displayed, printed, or exported. For example, you might want to hide the current date and current time in the title when you are designing a worksheet but display the current date and current time in the title when a Discoverer end user prints the worksheet.

To display or hide a worksheet title or text area:

1. Open the workbook containing the worksheet you want to edit (for more information, see "[How to open workbooks](#)").
2. Display the worksheet you want to edit.
3. Choose the View menu to display a list of check boxes.
4. Use the **Title** check box to specify whether the worksheet title area is displayed at the top of the worksheet when the worksheet is displayed, printed, or exported, as follows:
  - Select the **Title** check box to display the worksheet title area.
  - Clear the **Title** check box to hide the worksheet title area.
5. Use the Text area check box to specify whether the worksheet text area is displayed at the bottom of the worksheet when the worksheet is displayed, printed, or exported, as follows:
  - Select the **Text area** check box to display the worksheet text area.
  - Clear the **Text area** check box to hide the worksheet text area.

The worksheet is updated with the changes that you specified.

### Notes

- To specify that Discoverer always displays the worksheet title area when you create a worksheet, choose Tools | Options and select the **Show title** check box on the "[Options dialog: Sheet tab](#)".
- To specify that Discoverer always displays the worksheet text area when you create a worksheet, choose Tools | Options and select the **Show text area** check box on the "[Options dialog: Sheet tab](#)".

## How to rename worksheets and workbooks

---

You rename a workbook to change its name used in Discoverer. For example, you might want to create a more meaningful workbook name by changing a workbook name from My Workbook to Sales Reports.

You rename a worksheet when you want to change the name displayed in the worksheet tab. For example, you might want to change the default worksheet name created by Discoverer (for example, Sheet 2) to something more meaningful (for example, Sales Report).

To rename a workbook:

1. If it is not open, open the workbook you want to rename (for more information, see "[How to open workbooks](#)").
2. Choose File | Save As to display the "[Save Workbook to Database dialog](#)" and enter a new name in the **New Name** field.  
**Note:** Do not include a colon (:) character.
3. Click Save to save the workbook.
4. (optional) Delete the original workbook (for more information, see "[How to delete workbooks from the database](#)").

The workbook's new name is displayed at the top of the Discoverer work area.

To rename a worksheet:

1. If it is not open, open the workbook that contains the worksheet you want to rename and display the worksheet.
2. Choose Edit | Worksheet Properties to display the "[Worksheet Properties dialog: General tab](#)".  
**Note:** You can also display the worksheet properties dialog by double-clicking the worksheet name tab at the bottom of the worksheet.
3. Enter the new name for the worksheet in the **Name** field.
4. Click OK to rename the worksheet.


The worksheet's new name is displayed at the bottom of the worksheet.

## How to re-order worksheets within a workbook

---

You re-order worksheets within a workbook when you want to change the order that Discoverer displays worksheets in a workbook. For example, you might want to put the most commonly used worksheet at the front of a workbook to access information more easily.

To re-order a worksheet in a workbook:

1. Open the workbook that contains the worksheet you want to re-order.
2. Choose Edit | Move Worksheet... to display the "Move Worksheets dialog".
3.  To move the worksheet:
  - a. Click on the name of the worksheet you want to move.
  - b. Click the up arrow or down arrow as required to move the worksheet to a different position in the workbook.
4. Click OK to save the details.

The worksheets are now arranged in the order that you specified.

## How to refresh worksheets

---

Data in a workbook appears as the result of querying the database at a particular time. If you have had a workbook open for a while, the data that is currently displayed in the workbook might be out-of-date. You refresh a worksheet when you want to ensure that you are accessing the most recent information. When you refresh a worksheet, Discoverer queries the database again.

1. Open the worksheet you want to refresh.
2. Choose Tools | Refresh Sheet.

Discoverer displays up-to-date data in the worksheet.

**Note:**

Do not use browser's refresh feature (F5 key) to refresh worksheets; doing so might result in an error.

## How to delete worksheets

---

You delete a worksheet when you no longer want to use the worksheet, and want to remove it permanently from the database. Before deleting worksheets, ensure that no other Discoverer users want to use the worksheet in the future.

To delete a worksheet

1. Open the workbook containing the worksheet.
2. Display the worksheet you want to delete.
3. Choose Edit | Delete Worksheet.

Discoverer removes the worksheet from the workbook.

## How to find data in a worksheet

---

If you are working with a large worksheet, you can use Discoverer's search facility to find data that matches a search term you specify. For example, to find cell values that contain New York.

To find data in a worksheet:

1. Display the worksheet you want to search.
2. Choose Edit | Find to display the "[Find dialog \(in Worksheet\)](#)".
3. Use the **Search in** and **Search by** drop down lists to specify search.
4. In the **Search for** field, enter the search text you want to find.
5. Click Find Previous or Find Next.

**Note:** The search starts from the currently highlighted worksheet cell (if a worksheet cell is highlighted) or the start of the worksheet.

If the worksheet contains the search text that you specified, Discoverer highlights the first occurrence of this search term in the worksheet.

If the worksheet does not contain the search text that you specified, Discoverer displays a 'No match found' dialog.

6. (optional) Use the Find Previous and Find Next buttons to search for other occurrences of the search term.

When the search reaches the end of the worksheet, Discoverer goes back to the start of the worksheet and resumes the search.

7. Click Close to close the "[Find dialog \(in Worksheet\)](#)".



[Previous](#)



[Next](#)

## About creating new workbooks

---

In some organizations, the Discoverer manager or an experienced Discoverer user creates the workbooks required by Discoverer users. In other organizations, individual users create their own workbooks.

Typically, you create a workbook when you want to analyze data in a new way. For example, you might want to create a performance analysis workbook that you make available to all sales analysts in a marketing department.

**Note:** For more information about maximizing Discoverer performance, see "[About designing workbooks for maximum performance](#)".

Before you can create a workbook, the Discoverer manager must have given you permission to do so. The Discoverer manager gives you permission to create a workbook by granting you a Discoverer privilege.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## How to create new workbooks

---

While working with Discoverer, you might want to create a workbook containing one or more worksheets. For example, you might want to distribute a new sales report to other Discoverer users.

When you create a workbook, Discoverer immediately prompts you to create a worksheet to go into the workbook.

To create a workbook:

1. Start Discoverer (for more information, see "[About starting Discoverer](#)").

When you start Discoverer, the "[Workbook Wizard: Create/Open Workbook dialog](#)" is displayed.

**Hint:** If you have started Discoverer, choose File | New to display the "[Workbook Wizard: Create/Open Workbook dialog](#)" and skip the next step.

2. Click Create a workbook to display the "[Edit Worksheet dialog: Worksheet Layout tab](#)", which enables you to select the worksheet elements (for example, title area, graph) to display on the first worksheet.
3. Select the worksheet elements (for example, title area, graph) to display on the first worksheet.
4. Click Next to display the Select Items page of the Worksheet Wizard.

You use the Select Items page to select what data to display on the worksheet.

5. Select the business area you want to use from the drop down list at the top of the **Available** box.

The folders and items in the business area you selected appear beneath the business area name.

**Hint:** If you cannot see the business area you want to analyze, ensure that you selected the correct connection when you started Discoverer Plus Relational. If necessary, exit Discoverer Plus Relational and restart the Discoverer Plus Relational using a different connection that has access to the business area you want to analyze.

**Note:** Click the Find button to the right of the **List** field to display the "[Find dialog \(in Item Navigator\)](#)", where you search the business area for folders and items you want to add to the worksheet. Folders containing items available to the current worksheet are active. Items not available to the current worksheet are grayed out.

6. Move the folders and items you want to include in the new worksheet from the **Available** list to the **Selected** list.

### Hints:

- Click the plus (+) sign next to a folder to items within the folder.
- You can select multiple folders or items at a time by pressing the Ctrl key and clicking another folder or item.
- If you select a folder, you select all items in that folder.

- Click the plus (+) sign next to items to expand items. For example, you might expand a Region to display the values North, East, and West. If you select North to display data for that region in the worksheet, you create a condition 'Region = North' (for more information about conditions, see ["Using conditions"](#)).
- Selecting a numeric item automatically includes its default aggregates (for example, Sum, Count, Max). You can also expand a numeric item list and select individual aggregates.

Having specified the folders and items to include in the worksheet, you can add other features to the worksheet or close the Worksheet Wizard to start analyzing the worksheet data.

7. Click Next to display the ["Edit Worksheet dialog: Table Layout tab"](#) or ["Edit Worksheet dialog: Crosstab Layout tab"](#), where you can change the default position of worksheet items.
8. Click Next to display the ["Edit Worksheet dialog: Sort tab"](#), where you can change the default sort order of worksheet items.
9. Click Next to display the ["Edit Worksheet dialog: Parameters tab"](#), where you can add parameters to the worksheet that prompt Discoverer end users to enter dynamic values to customize the worksheet.
10. Click Finish to save the layout and close the worksheet wizard.

Discoverer displays the new worksheet. Now you are ready to begin analyzing data using Discoverer!

11. (optional) You can add new items to the worksheet as required. For example:
  - parameters (for more information, see ["Using parameters"](#))
  - sorts (for more information, see ["Sorting data"](#))
  - totals (for more information, see ["Using totals"](#))
  - percentages (for more information, see ["Using percentages"](#))
  - conditions (for more information, see ["Using conditions"](#))
  - calculations (for more information, see ["Using calculations"](#))

Now that you have created a worksheet, you might want to do one or more of the following:

- edit the worksheet using Oracle Portal (for more information, see *Oracle Fusion Middleware Guide to Publishing Oracle Business Intelligence Discoverer Portlets*)
- print the worksheet (for more information, see ["Printing worksheets and graphs"](#))
- share the workbook with other Discoverer users (for more information, see ["Sharing workbooks"](#))
- export the worksheet to a different format (for more information, see ["Exporting data to other applications"](#))
- create a graph for the worksheet data (for more information, see ["Creating graphs in Discoverer"](#))
- publish the worksheet using Oracle Portal (for more information, see *Oracle Fusion Middleware Guide to Publishing Oracle Business Intelligence Discoverer Portlets*)

## Notes

- Before you publish a Discoverer workbook, ensure that the workbook is designed for maximum performance (for more information, see "[About designing workbooks for maximum performance](#)").
- After creating a worksheet, you can always change default options later by choosing Edit | Worksheet... to display the "[Edit Worksheet dialog](#)". Here, you can change the worksheet layout and display formats, and add worksheet items (for example, parameters, conditions, calculations).
- If you select items from different folders (or multiple folders), you might be prompted by the Join Folders dialog to specify how to join folders. This means that information in folders can be associated in multiple ways. For example, a product key item in a Products folder might be associated with a product key item in a Sales folder. The Products folder and Sales folder might also both contain an item called Location, which is an alternative item on which to associate the two folders.

Contact the Discoverer manager for more information about multiple join paths, or see "[About multiple join paths](#)".

In the figure below, the Join Folders dialog is displayed when Discoverer detects a multiple join path. In this instance, the Store item can be associated with the Sales Fact folder or the Sales Fact: folder. The **Please select the join or joins that you want to use** list contains an entry for each of these options.

### *Join Folders dialog*

## How to add worksheets to a workbook

---

You add a worksheet to a workbook when you want to analyze data in a new way. For example, you might have a sales workbook to which you want to add a new worksheet on sales for a particular region.

You can add a worksheet in two ways:

- by creating a copy of an existing worksheet in the current workbook and modifying the copy to meet your needs (see "[How to duplicate a worksheet](#)")
- by creating a completely new worksheet using the Discoverer Worksheet Wizard to guide you through the process (as described below)

To create a completely new worksheet:

1. Start Discoverer and open the workbook to which you want to add a worksheet (for more information, see "[How to open workbooks](#)").
2. Choose Edit | Add Worksheet... to display the Worksheet Wizard.
3. Follow the instructions on the Worksheet Wizard.

The new worksheet is added to the workbook.

## How to view and update a workbook's properties

---

You update a workbook's properties to store additional information about the workbook. You can only update the properties of a workbook that you own and currently have open.

You might also want to view a workbook's properties to find out information about the workbook. For example, you might want to find out the name of the workbook owner or the date that the workbook was created.

To update a workbook's properties:

1. Open the workbook.
2. Choose File | Workbook Properties to display the "[Workbook Properties dialog](#)".
3. In the **Description** field, type additional information about the workbook.

The description that you type is displayed to Discoverer users when they open workbooks in Discoverer Plus Relational and Discoverer Viewer.

4. Click OK to save any changes and close the Workbook Properties dialog box.

To view the properties of a workbook:

1. Choose Tools | Manage Workbooks to display the "[Manage Workbooks dialog](#)".
2. Select a workbook in the **Workbooks** list.
3. Click Properties to display the "[Workbook Properties dialog](#)".

To view the properties of a workbook when you open a workbook:

1. Choose Tools | Open to display the "[Open Workbook from Database dialog](#)".
2. Right-click on a workbook in the **Workbooks** list to display a right-click menu.
3. Choose Properties in the right-click menu to display the "[Workbook Properties dialog](#)".

## Notes

- If you do not own the workbook, the Identifier and Description fields are grayed out.
- Do not change the **Identifier** value unless asked to do so by the Discoverer manager.

## About worksheet properties

---

Discoverer's worksheet properties determine the appearance and behavior of a worksheet. You can change worksheet properties to suit your requirements. For example, you might want a table worksheet to display headings and row numbers. Or you might want to specify how a null value is displayed.

When you change worksheet properties, the changes take effect immediately. For more information about editing worksheet properties, see "[How to view and edit worksheet properties](#)".

Note that when you change a worksheet's properties, you are only changing the properties of the current worksheet. For more information about the default properties that apply to new worksheets, see "[Changing default settings](#)".

**Hint:** In addition to opening the Worksheet Properties dialog from the Edit menu, you can also use the Properties button in the Edit Worksheet dialog tabs.

## How to view and edit worksheet properties

---

You edit a worksheet's properties to change the appearance and behavior of the worksheet. For example, you might want to:

- change the name and description of the worksheet
- show vertical or horizontal gridlines

To view and edit worksheet properties:

1. If it is not open, open the workbook that contains the worksheet you want to view or edit and display the worksheet.
2. Choose **Edit | Worksheet Properties** to display the ["Worksheet Properties dialog: General tab"](#).
3. Display the appropriate tab for the properties you want to edit as shown below.

| Tab  | Use to   |
|--|--|
| <a href="#">"Worksheet Properties dialog: General tab"</a>               | Specify the worksheet name and description, and view the worksheet identifier.   |
| <a href="#">"Worksheet Properties dialog: Sheet/Crosstab Format tab"</a> | Specify how Discoverer displays the current worksheet (for example, with a text area, null values, grid lines, row numbers).                                 |
| <a href="#">"Worksheet Properties dialog: Aggregation tab"</a>           | Specify how Discoverer displays aggregated values for the worksheet (for more information, see <a href="#">"What are aggregated values in Discoverer"</a> ). |

4. Click **OK** to save the changes that you have made and close the **Worksheet Properties** dialog.

The changes to worksheet properties that you have made take effect immediately.

## Editing worksheets and worksheet items

---

This section explains how to edit Discoverer Plus Relational worksheets and format worksheet data, and contains the following topics:

- ["About editing worksheets"](#)
- ["How to edit worksheets using the Edit Worksheet wizard"](#)
- ["How to add items to worksheets"](#)
- ["How to create new worksheet items"](#)
- ["How to remove items from worksheets"](#)
- ["How to duplicate a worksheet"](#)
- ["How to change the format of worksheet items"](#)
- ["How to set the currency symbol for numeric items"](#)
- ["How to change the format of worksheet item headings"](#)
- ["How to change the text in item headings"](#)

## About editing worksheets

---

When you create a worksheet, Discoverer applies a default format (for example, colors, fonts) to worksheet items. For more information about changing the default format that is applied to worksheet items, see "[How to change default worksheet formats](#)").

Discoverer's powerful layout tools enable you to format worksheets exactly how you want them. For example, you might want to:

- add items to a worksheet
- remove items from a worksheet
- change the color of rows and columns
- change the background color or title of worksheets
- change the format of text and numbers
- change the column width on table worksheets (Discoverer automatically sets the column size on crosstab worksheets)

You can edit worksheets using any of the following methods:

- by dragging and dropping a worksheet item from one area of a worksheet to another area (you can also resize worksheet columns using drag and drop)
- by right-clicking on any area of a worksheet (for example, a graph, worksheet item, worksheet item heading) to display a list of options for that area.
- by using the Edit Worksheet wizard (for more information, see "[How to edit worksheets using the Edit Worksheet wizard](#)")

**Hint:** To change a worksheet but keep a copy of the original worksheet, use the duplicate worksheet facility. Here, you make an exact copy of a worksheet that you can work on (for more information, see "[How to duplicate a worksheet](#)"). Alternatively, save the whole workbook under a different name and work with this copy (for more information, see "[How to save workbooks](#)").s

## How to edit worksheets using the Edit Worksheet wizard

---

You edit a worksheet to change the way that the worksheet looks or behaves. For example, you might want to change the layout of worksheet data, or add calculations, percentages, or totals.

To edit a worksheet using the Edit Worksheet Wizard:

1. Display the worksheet you want to edit.
2. Choose Edit | Worksheet... to display the "[Edit Worksheet dialog](#)".

The tabs on the Edit Worksheet dialog enable you to edit the properties of the current worksheet, as follows:

- use the Worksheet Layout tab to select the worksheet elements (for example, title area, graph) to display on the worksheet (for more information, see "[Edit Worksheet dialog: Worksheet Layout tab](#)")
  - use the Select Items tab to specify which items to display on the current worksheet (for more information, see "[Edit Worksheet dialog: Select Items tab](#)")
  - use the Crosstab/Table Layout tab to change the layout of the current worksheet (for more information, see "[Edit Worksheet dialog: Crosstab Layout tab](#)" or "[Edit Worksheet dialog: Table Layout tab](#)")
  - use the Sort tab to change the sort order of items on the current table worksheet (for example, title area, graph) to display on the worksheet (for more information, see "[Edit Worksheet dialog: Sort tab](#)")
- Note:** The Sort tab is only displayed for table worksheets. To sort a crosstab worksheet, Choose Tools | Sort to display the "[Sort Crosstab dialog](#)" (for more information, see "[How to sort data on a crosstab worksheet](#)").
- use the Parameters tab to manage existing parameters and create new parameters (for more information, see "[Edit Worksheet dialog: Parameters tab](#)")

3. Click OK to save changes you have made and return to the worksheet.

Discoverer updates the worksheet with the changes that you specified.

### Notes

- You can also edit the worksheet directly in the Discoverer work area using drag and drop, right click menus, and toolbars (for more information, see "[About the Discoverer Plus Relational work area](#)").

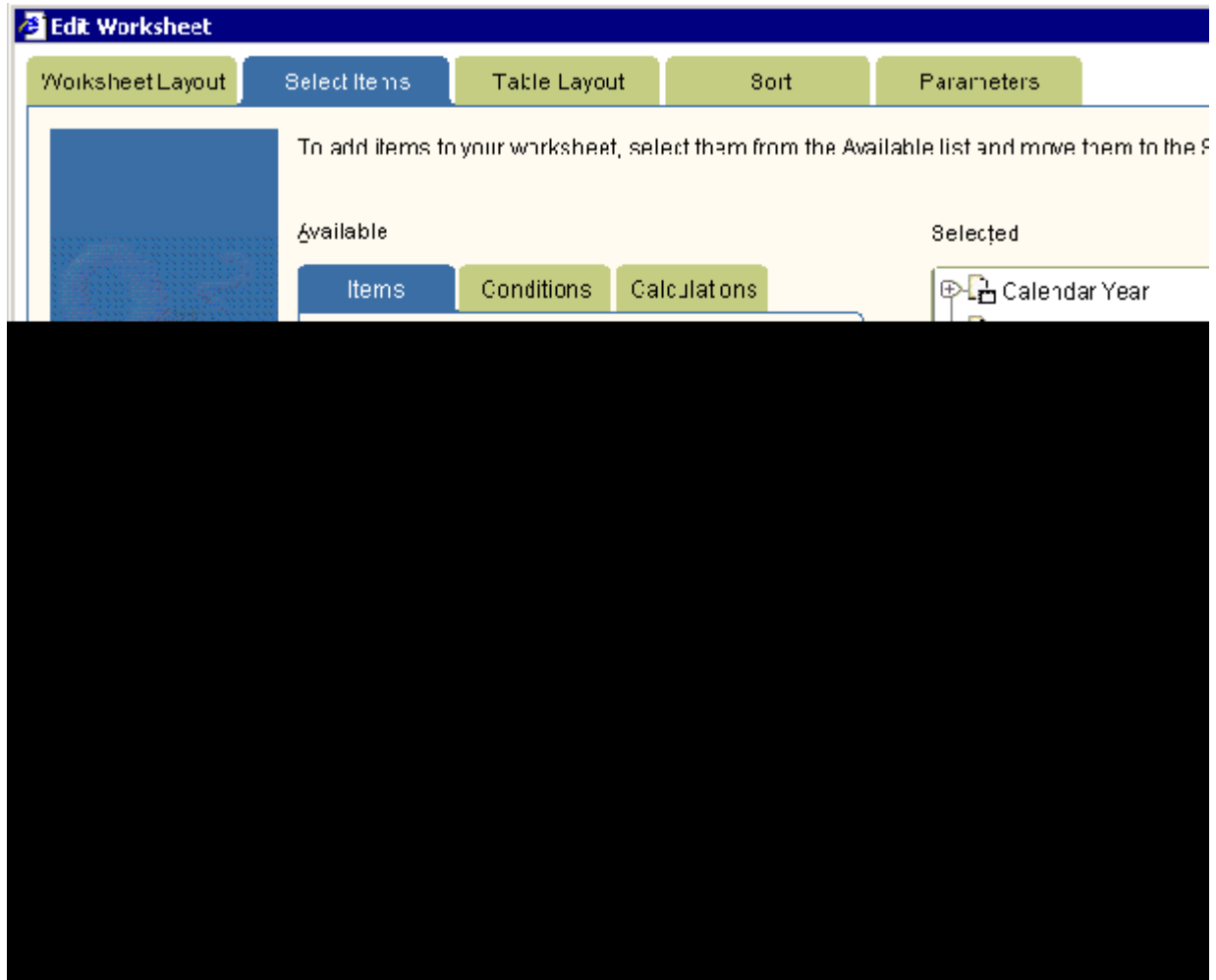
## How to add items to worksheets

You add items to a worksheet when you want to analyze new areas of data using items in the business area. For example, you might want to add an item called Year to analyze trends over time.

For more information about creating a new worksheet item (for example, a calculation, or percentage), see "[How to create new worksheet items](#)".

To add an item to a worksheet:

1. Display the worksheet you want to edit.
2. Choose Edit | Worksheet... to display the "[Edit Worksheet dialog](#)".
3. Display the "[Edit Worksheet dialog: Select Items tab](#)".



4. Use the **Available** list to locate and select the item you want to add to the worksheet.

**Hint:** Click the plus (+) sign next to folders and items to see items and values within them. Click the flashlight button above the **Available** box to display the "[Find dialog \(in Item Navigator\)](#)", where you can search for items.

5. Move items you want to add to the worksheet from the **Available** list to the **Selected** list.

You can select multiple items at a time by pressing the Ctrl key and clicking another item.

6. Click OK to save the changes you have made and close the dialog.

Discoverer updates the worksheet with the changes that you specified.

**Hint:** To change the position of worksheet items, display the "Edit Worksheet dialog: Table Layout tab" or "Edit Worksheet dialog: Crosstab Layout tab" and drag and drop items to arrange them on the worksheet.

## Notes

- To quickly add a worksheet item, simply drag and drop an item from the Available Items pane to the worksheet area. To display the Available items pane, choose View | Available Items Pane. For more information, see "About dragging and dropping items in the Discoverer work area".
- To move items from the **Available** list to the **Selected** list, do one of the following:
  - Use the right arrow button to move selected items to the **Selected** list.
  - Use the cursor to drag and drop selected items from the **Available** list to the **Selected** list.

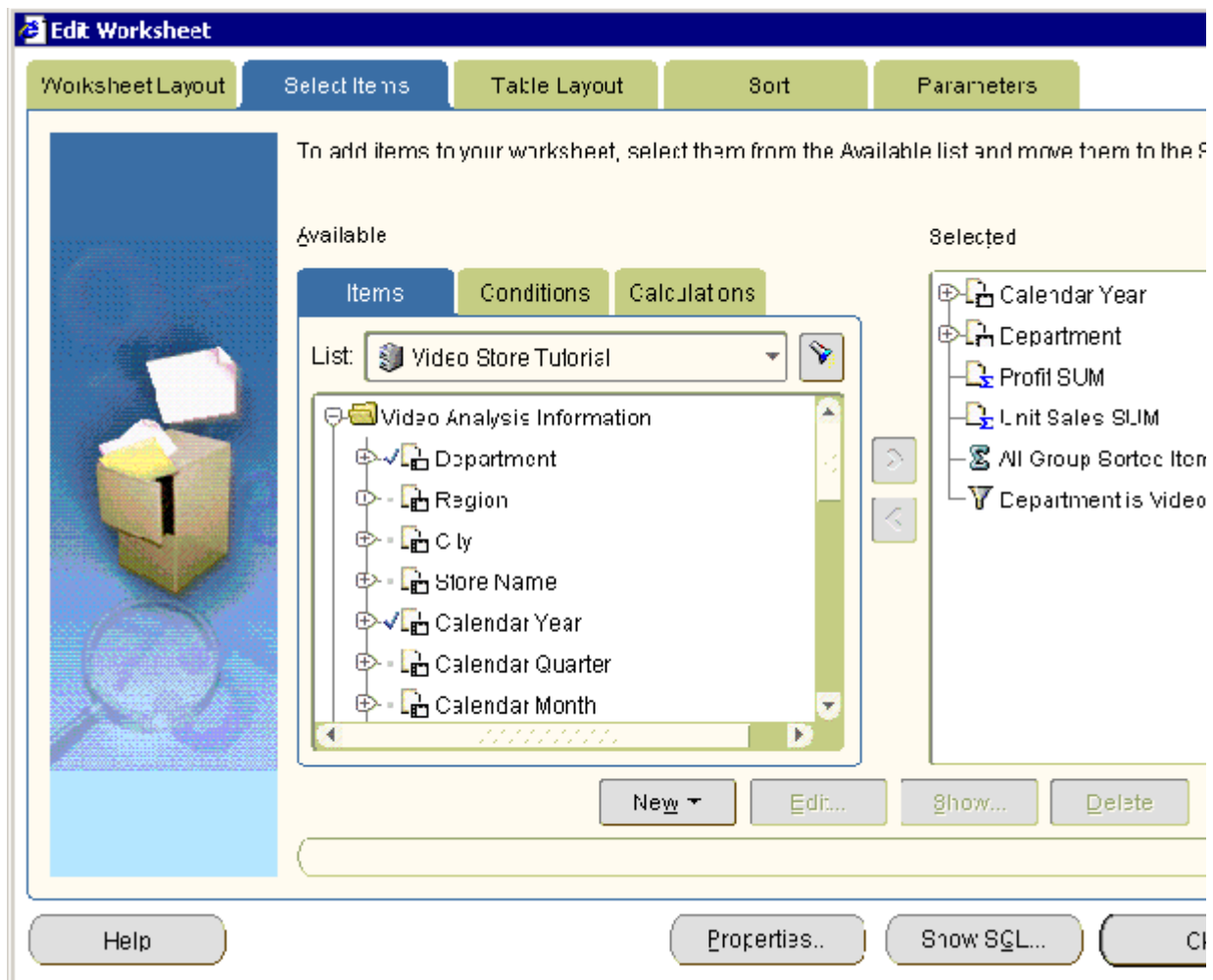
## How to create new worksheet items

You create new worksheet items when you want to analyze different data using items that might not be in the business area. For example, you might want to create a three month moving sales average.

For more information about adding an existing item to a worksheet, see "[How to add items to worksheets](#)".

To create a worksheet item:

1. Display the worksheet you want to edit.
2. Choose Edit | Worksheet to display the "[Edit Worksheet dialog](#)".



3. Click New and choose one of the following:
  - To create a calculation, select New Calculation (for more information, see "[How to create calculations](#)")
  - To create a percentage, select New Percentage (for more information, see "[How to create percentages](#)")

- To create a total, select New Total (for more information, see [How to create totals](#))
4. Click OK to save the changes you have made and close the dialog.

Discoverer updates the worksheet with the changes that you specified.

## Notes

- To quickly create a worksheet item, select an item in the Selected Items pane and click one of the 'add item' buttons (for example, Add Calculation button, Add Percentage button). For more information, see ["About dragging and dropping items in the Discoverer work area"](#).

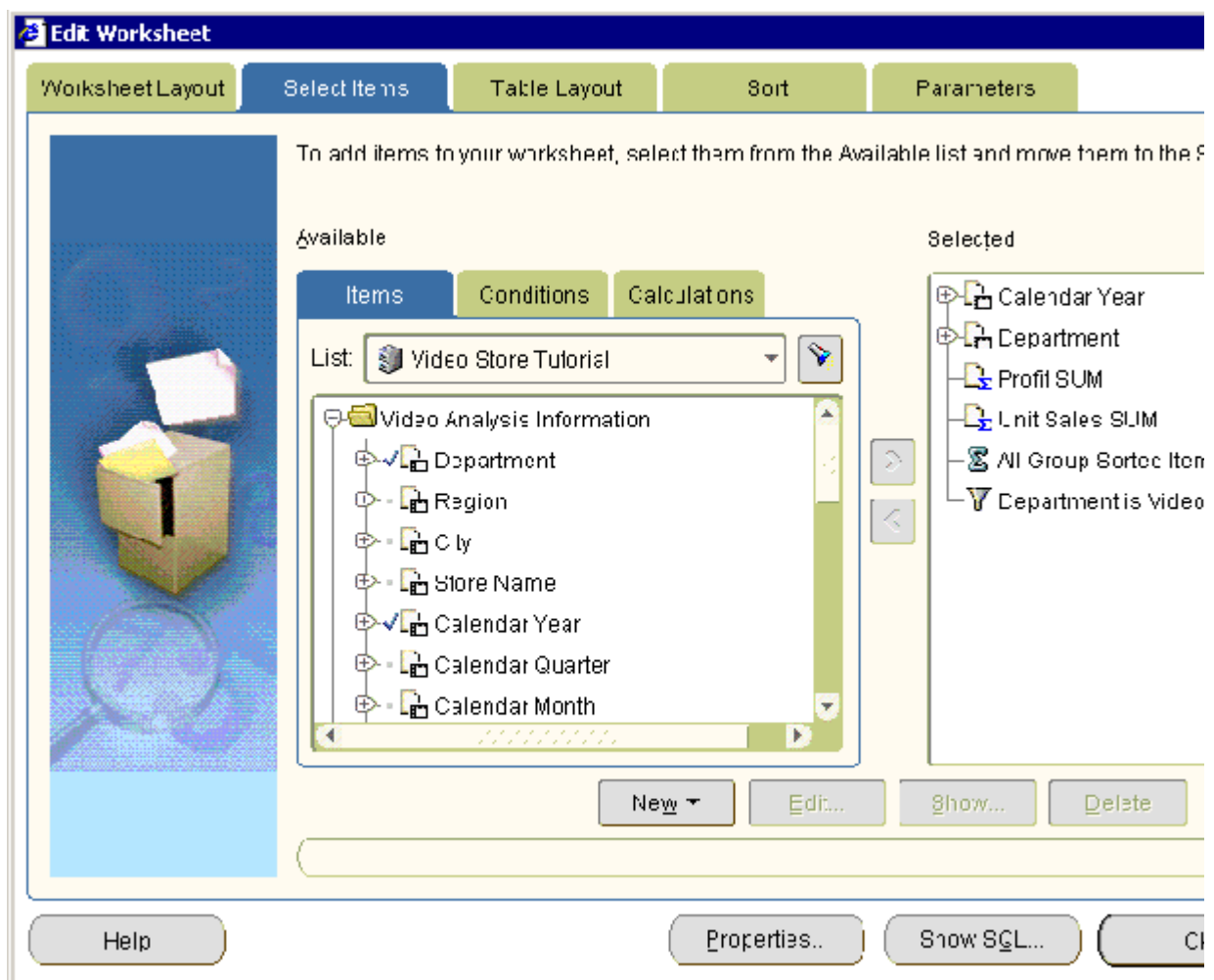
Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.  
[Legal Notices](#)

## How to remove items from worksheets

You remove an item from a worksheet when you no longer need to analyze the item. For example, you might remove a year item when you no longer need to analyze data by time.

To remove an item from a worksheet:

1. Display the worksheet you want to edit.
2. Choose Edit | Worksheet... to display the "Edit Worksheet dialog".
3. Display the "Edit Worksheet dialog: Select Items tab".



4. To remove an item from the worksheet, move the item from the **Selected** list to the **Available** list. You can select multiple items at a time by pressing the Ctrl key and clicking another item.

5. Click OK to save changes you have made and close the dialog.

Discoverer updates the worksheet with the changes that you specified.

## Notes

- To quickly remove a worksheet item, simply right-click the item and choose Delete. For more information, see "[About dragging and dropping items in the Discoverer work area](#)".

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## How to duplicate a worksheet

---

You duplicate a worksheet when you want to quickly create a worksheet that is very similar to an existing worksheet. For example, you might want to transform a duplicate of a crosstab worksheet into a table worksheet.

Duplicating a worksheet also enables you to work on a copy of a worksheet, leaving the original worksheet intact. For example, you might want to work on a temporary worksheet that you discard later.

To duplicate a worksheet:

1. Display the worksheet you want to duplicate.
2. Choose one of the following options, depending on whether you want the new worksheet to be a table worksheet or a crosstab worksheet:
  - Choose **Edit | Duplicate Worksheet | As Table** to duplicate the current worksheet using the **Duplicate as Table** dialog
  - Choose **Edit | Duplicate Worksheet | As Crosstab** to duplicate the current worksheet using the **Duplicate as Crosstab** dialog

Discoverer displays the **Duplicate as Table** dialog or **Duplicate as Crosstab** dialog, which enables you to change the default position of the new worksheet.

3. (optional) Use the tabs on the **Duplicate as Table** dialog or **Duplicate as Crosstab** dialog to change the default settings for items on the new worksheet.

For example, you might use the **Select Items** tab to add items to the duplicated worksheet, or you might use the **Format** tab to change the default display style of worksheet items.

4. Click **OK** to save the new worksheet and close the dialog.

The new worksheet is now displayed ready for you to analyze. The default worksheet name that Discoverer assigns is the original worksheet name appended with a unique number. For example, if you duplicate a worksheet named **Sales Analysis**, the new worksheet is named **Sales Analysis 2**.

You might want to change the default name of the new worksheet (for more information, see "[How to rename worksheets and workbooks](#)").

**Hint:** Use the tabs at the bottom of the Discoverer work area to navigate between the original worksheet and the new worksheet.

## How to change the format of worksheet items

---

You change the format of worksheet items to change the default look and feel of a worksheet. For example, you might want to:

- change the text color of worksheet values
- modify the number of decimal places displayed
- change the background color of headings and totals

To change the format of worksheet items:

1. Display the worksheet you want to edit.
2. Select one or more worksheet items you want to edit.

For example, click one or more item headings in the data area.

**Hint:** You can select multiple items by pressing the Ctrl key and clicking another item. In the example below, the Quarter and Department items are selected.

Description of the illustration ed12.gif

3. Choose Format | Data to display the "Format Data dialog".



**Note:** The tabs that you see on the "Format Data dialog" depend on the number and type of worksheet items you select, as follows:

- if you select a single worksheet item or multiple worksheet items of the same type, you see : Format tab and a Breaks tab, and a tab corresponding to the worksheet item type (for example, Text, Number, Date)
  - if you select multiple worksheet items of different types (for example, a numeric item and a text item), you see a Format tab and a Breaks tab only
4. Use the tabs on the "Format Data dialog" to change the worksheet item settings, as follows:
    - use the "Format Data dialog: Format tab" to change the text style (for example, text font or text color)
    - use the "Format Data dialog: Date tab" to change the format of date items (for example, to change the date format for a Year item from YY to YYYY)
    - use the "Format Data dialog: Number tab" to change the format of numeric items (for example, to add or remove decimal places, specify a currency symbol (for example, \$), or create a custom number format)
    - use the "Format Data dialog: Text tab" to change the format of text items (for example, to change the text style to UPPERCASE, lowercase, or Capitalized)

- use the "[Format Data dialog: Breaks tab](#)" to change the group sorting style (for example, to insert a blank row after each set of rows to separate areas of the worksheet)
5. Click OK to save the changes you have made and return to the worksheet.
- Discoverer updates the worksheet with the changes that you specified.

## Notes

- You can also format worksheet items by choosing Format | Item Formats to display the "[Format dialog](#)", and using the Format Data, Format Heading, and Edit Heading options.
- You can also change the item heading (for more information, see "[How to change the text in item headings](#)") and change the format of item headings (for more information, see "[How to change the format of worksheet item headings](#)").
- If you are formatting a single worksheet item (or multiple items of the same type), you can format all worksheet characteristics. For example, you can set the currency symbol for three numeric worksheet items at the same time. If you are formatting multiple worksheet items at the same time, you can format characteristics that are common to all items (for example, text style and break settings).
- For more information about applying a conditional format or stoplight format, see "[Using conditional formatting](#)".
- To change the width of a column on a worksheet, drag and drop the column heading border to the required position. On a table worksheet, you can also choose Format | Columns | Column Width to display the "[Column Width dialog](#)".

## How to set the currency symbol for numeric items

---

You can specify the currency symbol to use for numeric values on a worksheet. For example, you might want to display the dollar symbol next to sales figures.

To set the currency symbol for a numeric item:

1. Display the worksheet you want to edit.
2. Select one or more numeric worksheet items to edit.

For example, click one or more item headings in the data area.

**Hint:** You can select multiple items by pressing the Ctrl key and clicking another item. In the example below, the Profit SUM and Sales SUM items are selected.

Description of the illustration ed15.gif

3. Choose Format | Data to display the "Format Data dialog: Format tab".
4. Display the "Format Data dialog: Number tab".
5. Select Currency in the **Categories** list.
6. Select the currency symbol to use from the **Display Symbol** drop down list.
7. Click OK to save the changes you have made and close the dialog.

Discoverer displays the selected currency symbol in front of the worksheet item values. The example below shows the dollar (\$) currency symbol displayed next to Profit SUM values and Sales SUM values in a worksheet.

## How to change the format of worksheet item headings

You change the format of worksheet item headings to change the default look and feel of a worksheet. For example, you might want to change the default alignment or background color of a column heading.

To change the format of a single worksheet item heading:

1. Display the worksheet you want to edit.
2. Select the worksheet items you want to format.

For example, click one or more item headings in the data area.

**Hint:** You can select multiple items by pressing the Ctrl key and clicking another item. In the example below, the Quarter and Department items are selected.

| ▶ Year | ▶ Quarter | ▶ Department | ▶ Profit SUM |
|--------|-----------|--------------|--------------|
| 1998   | Q1        | Snacks       | \$433.26     |
| 1999   | Q1        | Snacks       | \$292.11     |
| 2000   | Q1        | Snacks       | \$387.79     |
| 1998   | Q2        | Snacks       | \$413.82     |
| 1999   | Q2        | Snacks       | \$262.51     |
| 2000   | Q2        | Snacks       | \$420.30     |
| 1998   | Q3        | Snacks       | \$436.61     |
| 1999   | Q3        | Snacks       | \$306.59     |
| 1998   | Q4        | Snacks       | \$445.25     |
| 1999   | Q4        | Snacks       | \$284.30     |
| 1998   | Q1        | Beverage     | \$655.60     |
| 1999   | Q1        | Beverage     | \$649.46     |
| 2000   | Q1        | Beverage     | \$551.91     |
| 1998   | Q2        | Beverage     | \$468.99     |

3. Choose Format | Heading to display the "Format heading dialog".
4. Use the "Format heading dialog" to change the format of the selected item headings.
5. Click OK to save changes and return to the worksheet.

Discoverer updates the worksheet with the changes that you specified.

### Notes

- You can also format worksheet item headings by selecting one or more items and selecting Format Heading from the right click menu.

- You can also format worksheet item headings by choosing Format | Item Formats to display the "Format dialog", and using the Format Heading option.
- For more information about changing the format of worksheet items, see "How to change the format of worksheet items".
- To change the width of a column on a worksheet, drag and drop the column heading border to the required position. Alternatively, on a table worksheet you can also choose Format | Columns | Column Width to display the "Column Width dialog".

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## How to change the text in item headings

You change the text in item headings to change the text that is displayed at the top of a column or the side of a row (on crosstab worksheets). Item names are usually descriptive enough to use as the heading. However, sometimes you might want to change the heading to something more descriptive.

For example, you might want to change the heading of the Calendar Year item from Calendar Year to Year. In the example below, the item headings are Year, Quarter, Department, Profit SUM, and Sales SUM.

| ▶ Year | ▶ Quarter | ▶ Department | ▶ Profit SUM | ▶ Sales SUM |
|--------|-----------|--------------|--------------|-------------|
| 1998   | Q1        | Snacks       | \$433.26     | \$776.95    |
| 1999   | Q1        | Snacks       | \$292.11     | \$524.75    |
| 2000   | Q1        | Snacks       | \$387.79     | \$695.10    |
| 1998   | Q2        | Snacks       | \$413.82     | \$736.80    |
| 1999   | Q2        | Snacks       | \$262.51     | \$474.75    |
| 2000   | Q2        | Snacks       | \$420.30     | \$733.28    |
| 1998   | Q3        | Snacks       | \$436.61     | \$771.12    |
| 1999   | Q3        | Snacks       | \$306.59     | \$556.55    |
| 1998   | Q4        | Snacks       | \$445.25     | \$774.25    |
| 1999   | Q4        | Snacks       | \$284.30     | \$499.10    |
| 1998   | Q1        | Beverage     | \$655.60     | \$826.28    |
| 1999   | Q1        | Beverage     | \$649.46     | \$788.74    |
| 2000   | Q1        | Beverage     | \$551.91     | \$745.78    |

To change the text in an item heading:

1. Display the worksheet you want to edit.
2. Select an item on the worksheet.

For example, click an item heading in the data area. In the example below, the Department item is selected.



[Description of the illustration ed16.gif](#)

**Note:** If you select multiple items, the Edit Heading option is grayed out. You can only edit one item heading at a time.

3. Right click on the item heading and select Edit Heading to display the "Edit Heading dialog".



4. Use the "Edit Heading dialog" to change the heading text.

5. Click OK to save changes and return to the worksheet.

Discoverer updates the worksheet with the changes that you specified.

## Notes

- You can also change worksheet item headings by choosing Format | Item Formats to display the "Format dialog", and using the Edit Heading option. If you select multiple items on the "Format dialog", the Edit Heading option is grayed out. You can only edit one item heading at a time.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## Creating graphs in Discoverer

---

This chapter explains how to create graphs in Discoverer Plus Relational to answer typical business questions, and contains the following topics:

- ["What is a Discoverer graph?"](#)
- ["About using graphs in Discoverer"](#)
- ["About components of a Discoverer graph"](#)
- ["About graph types and sub-types"](#)
- ["About graph types available in Discoverer"](#)
- ["Notes about creating bubble graphs"](#)
- ["Notes about creating high-low-close stock graphs"](#)
- ["Notes about creating dual-Y graphs"](#)
- ["Notes about creating pie graphs"](#)
- ["How to edit a graph"](#)
- ["How to hide and display a graph"](#)
- ["How to change the position of a graph"](#)

## What is a Discoverer graph?

---

A Discoverer graph is an interactive pictorial representation of worksheet data. It is often easier to analyze trends in your data using a graph. The example below shows a three-dimensional bar graph of profit figures for regions.

### *A three-dimensional bar graph in Discoverer*

**Note:** In the example above, the underlined axis labels (that is, Centre, East, West) are links that enable you to drill down into the graph. For example, clicking on the West underlined axis label drills down to data for cities in the West region (for example, Seattle, San Francisco).

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.  
[Legal Notices](#)

## About using graphs in Discoverer

---

Discoverer provides a wide range of graphs to help you analyze data visually (for example, area, bar, line and scatter graph). For a complete list of graph types available in Discoverer, see ["About graph types available in Discoverer"](#).

Each Discoverer worksheet can have one graph. You create a graph for the items currently displayed on a worksheet. Before you create a graph, ensure that you display the numeric worksheet values you want to plot on the graph.

You can drill up and down in a Discoverer graph in the same way as you can drill in a worksheet (for more information, see ["How to drill up and down"](#)).

Discoverer provides the Edit Graph dialog to help you create and edit graphs (see [Figure: Discoverer Edit Graph dialog](#)).

### *Discoverer Edit Graph dialog*

The Edit Graph dialog helps you:

- choose a graph type and a graph style
- choose the data you want to represent in a graph
- specify how the graph looks

If you change the data displayed in a worksheet, the graph automatically updates to show the new data.

Once you have created a graph, you can edit the graph using the Edit Graph dialog, or edit areas of the graph using the Graph toolbar and right-click menus (for more information, see ["How to edit a graph"](#)).

You can hide and display a worksheet graph (for more information, see ["How to hide and display a graph"](#)).

When you save a workbook, Discoverer saves graphs automatically for you as part of the worksheets in the workbook. In other words, you do not have to explicitly save graphs.

## Notes:

- To edit a Discoverer graph, you must use the same Discoverer tool that you used to create the graph. In other words:
  - if you created a graph using Discoverer Plus Relational, you must use Discoverer Plus Relational to edit the graph
  - if you created a graph using Discoverer Desktop, you must use Discoverer Desktop to edit or view the graph
- Graphs created in Discoverer Plus Relational can be viewed in Discoverer Plus Relational, Discoverer Viewer, and Discoverer portlets.

- Graphs created in Discoverer Desktop can only be viewed in Discoverer Desktop.
- A worksheet can have both a Discoverer Plus Relational graph and a Discoverer Desktop graph saved with the worksheet.
- When you print a worksheet with a graph in Discoverer Plus Relational, the worksheet and graph print on separate pages. For more information about how to print a worksheet and graph on the same page, see "[About printing in Discoverer Plus Relational](#)".

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## About components of a Discoverer graph

---

Discoverer gives you great flexibility when producing graphs, enabling you to configure every component of a graph. The figure below shows the typical components of a Discoverer graph.

### *Components of a Discoverer graph*



Key to figure:

- a.** The graph title.
- b.** The Y-axis title.
- c.** The plot area, showing worksheet data represented on the graph.
- d.** Tick label.
- e.** The X-axis title.
- f.** The X-axis labels. Notice that the axis labels are underlined (that is, linked), to enable you to drill into the graph.
- g.** Vertical grid line.
- h.** Horizontal grid line.
- i.** The graph legend (or key). Notice that the axis labels are underlined (that is, linked), to enable you to drill into the graph.
- j.** A reference line, used to emphasize particular data values on a graph.

Discoverer enables you to change the font of each graph component.

## About graph types and sub-types

---

To present your worksheet data visually in Discoverer, you can choose from a wide range of graph types. For example:

- bar graph
- line graph
- pie graph

Each graph type has one or more variations, or sub-types. For example, the sub-types for the Bar graph type include the following:









- Bar
- Dual-Y Bar
- Percent

Some graphs also have dual-Y sub-types, which have two Y-axes. Dual-Y graphs are useful for showing the following types of data:

- data of different measures (such as region sales on the Y1-axis and profit on the Y2-axis)
- data of different scales (such as sales on the Y1-axis and percent of total sales on the Y2-axis)

## About graph types available in Discoverer

The table below shows the graph types that are available in Discoverer.

| Graph icon  | Graph category and description   |
|---|--|
|    | Area - graphs to show trends or changes in data using filled-in areas. This graph is useful when showing accumulations or cumulative data.   |
|    | Bar - graphs to compare values using vertical bars. Each value is represented by a single bar. Bar graphs shows variation over a period of time or illustrates comparisons between values. The stacked sub-type shows each value's relationship to a whole. Bar graphs can have two Y axes (for more information, see " <a href="#">Notes about creating dual-Y graphs</a> ").   |
|    | Circular - graphs to show directional data and cyclical patterns in data.  |
|    | Combination - graphs that combines bars, lines, and areas. This graph type emphasizes one or more series of data. You must have at least two series to use this graph type. Shows the relationship of one series to another. Most often used as a Dual-Y graph, where different series correspond to different Y axes.   |
|    | Horizontal Bar - graphs to compare values using horizontal bars. This graph type is identical to a bar graph except that the bars lie horizontally, rather than standing vertically. The stacked sub-type shows each value's relationship to a whole. Bar graphs can have two Y axes (for more information, see " <a href="#">Notes about creating dual-Y graphs</a> ").   |
|  | Line - graphs to show trends or changes in data at even intervals. Data is represented as a line that connects a series of data points.  |
|  | Pareto - graph to show trends across groups periodically and cumulatively. Each group is displayed as a column. A plotted line also shows the cumulative value across groups.  |
|  | Pie - graphs to show data as sections of a circle, similar to slices of a circular pie. A pie graph shows the proportion of parts to the whole. It is useful for emphasizing a significant element, such as the highest value. Note that a pie graph displays only one row or one column of data at a time (for more information, see " <a href="#">Notes about creating pie graphs</a> ").  |
|   | <p>Scatter/Bubble</p> <p>Scatter - graphs to show data as points scattered over the plot area. Each point is a value whose coordinates are specified by two numeric measures. A scatter graph is useful for showing relationships between two measures, for example Sales and Cost. All points are the same size, regardless of their value.</p> <p>Bubble - graphs to show data in a similar way to a scatter graph, but with an extra dimension that uses the size of the bubbles. Each bubble is a value whose coordinates are specified by three numeric measures. A bubble graph is useful for comparing data that has three measures (for more information, see "<a href="#">Notes about creating bubble graphs</a>").</p> |
|   | Stock graph - graphs to show the highest stock price, lowest stock price, and closing stock price as bands on a time axis. Stock graphs are useful for comparing the prices of different stocks or the stock price of an individual stock over time (for more information, see " <a href="#">Notes about creating high-low-close stock graphs</a> ").  |
|   | <p>ThreeD - graphs to show three-dimensional (ThreeD) data in a true three-dimensional graph, where you have an X axis, a Y axis, and a Z axis. 3D graphs have a floor, a wall, and a background.</p> <p><b>Note:</b> This graph type is different from a two dimensional graph with the 3D Effect turned on. The 3D Effect simply adds depth to any graph type.</p>   |

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.  
[Legal Notices](#)

## Notes about creating bubble graphs

---

To create meaningful graphs in Discoverer, you must have the correct worksheet configuration for the style of graph you want to use.

When you create bubble graphs, follow these guidelines:

- You need at least three items per bubble:
  - the X item - the bubble's location on the X-axis
  - the Y item - the bubble's location on the Y-axis
  - the Z item - the size of the bubble (in positive numbers)

The figure below shows an example Discoverer worksheet and the worksheet data plotted on a bubble graph.

### ***Example Discoverer worksheet and bubble graph***



For example, you might have the following items on a bubble graph (see [Figure: Example Discoverer worksheet and bubble graph](#)):

- store size as the X item (the 'Store size m2' item on the worksheet)
- advertising costs as the Y item (the 'Advertising \$' item on the worksheet)
- sales as the Z item (the 'Sales \$' item on the worksheet)

You could then see whether the largest stores with the most advertising generated the highest sales revenue.

The figure above shows how worksheet data is represented on a bubble graph. The bubbles represent Sales. A large bubble represents large sales revenue. A small bubble represents small sales revenue.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## Notes about creating high-low-close stock graphs

---

An open-high-low-close stock graph is a graph that is specifically designed for showing the opening, high, low, and closing prices of a stock. Each stock marker displays four separate values.

### *Example high-low-close stock graph*



When you create high-low-close stock graphs (sometimes known as stock charts), follow these guidelines

The data structure for open-high-low-close stock graphs is as follows:

- A group is a four-column set or, if data columns are shown as series, then a four-row set of data. It is represented by a single stock marker. If you show multiple groups of data, the values for opening, high, low, and closing values should vary faster than the Time values. That is, the order of the columns (or rows) should be Monday Open, Monday High, Monday Low, Monday Close, Tuesday Open, Tuesday High, Tuesday Low, Tuesday Close, and so on. A group is labeled by an O tick label, such as Fri.
- A series is represented by all the markers that have the same color. Most stock graphs show only one series of data. A series is labeled by legend text, such as Stock A. The legend should appear, even if you have only one series of data.

Each group in an open-high-low-close stock graph has four values:

- The first value is the opening price. It determines the top of the stock marker.
- The second value is the high price, which determines the left arm of the stock marker.
- The third value is the low price, which defines the bottom of the stock marker.
- The fourth value is the closing price, which defines the right arm of the stock marker.

You need the following worksheet layout for a open-high-low-close stock graph:

- All graphs show numeric data only.
- The open-high-low-close stock graph must have at least four columns of data (or rows, if series are columns), in order Open, High Low, Close.

If the data has fewer than four columns (or rows) of data, then the Graph bean displays a message about insufficient data, instead of displaying a graph.

If the opening or closing price lies outside the high and low range, then the graph sends an `AlertEvent` to any registered `AlertListeners`. The ID for the `AlertEvent` is `DATA_STOCK_OPEN_OR_CLOSE_OUT_OF_RANGE`.

- To display stock data for multiple days, the data must be in multiples of four, such as four columns or rows for Monday, then four for Tuesday, and so on. If the last group does not have four columns (or rows), then the graph does not display that group. The graph notifies any registered `AlertListeners` of this problem by sending an `AlertEvent`, with `DATA_PARTIAL_GROUP` as its ID.

- Most open-high-low-close stock graphs have only one series of data. The series should be the name of the stock whose prices you show in the graph. You can have multiple series. However, if you do show multiple series and the prices of the different stocks overlap, then some stock markers obscure other stock markers.
- Time axis data must be regular, complete, and in ascending order. If it is not, then the graph displays a regular ordinal axis rather than a time axis. The graph recognizes time data that skips days when stocks are not traded.

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.

[Legal Notices](#)

## Notes about creating dual-Y graphs

---

When you create dual-Y graphs, follow these guidelines:

- You can use the dual-Y facility with the following types of graph:
  - bar
  - line
  - area
  - combination

The figure below shows an example dual-Y bar graph with a Y axis for sales and a second Y axis for costs

### ***Example worksheet and dual Y graph***

- Dual-Y graphs require at least two items.
- By default, the series are displayed in the following way:
  - series one is displayed on the Y1 axis
  - series two is displayed on the Y2 axis
  - all subsequent series are displayed on the Y1 axis

In the figure above, the Y1 axis represents sales on the scale 0 to 1 million. The Y2 axis represents costs on the scale 0 to 50,000. You can therefore analyze sales and costs side by side even though they use different scales.



[Previous](#) [Next](#)

## Notes about creating pie graphs

---

When you create a Pie graph (sometimes called a Pie chart), you specify whether to use columns or rows as the graph series (that is, Series by Column or Series by Row). The figures below shows the difference between using columns or rows as the graph series.

### *Plotting a pie graph using Series by Column*

### *Plotting a pie graph using Series by Row*

Copyright © 1999, 2009, Oracle and/or its affiliates. All rights reserved.  
[Legal Notices](#)

## How to edit a graph

---

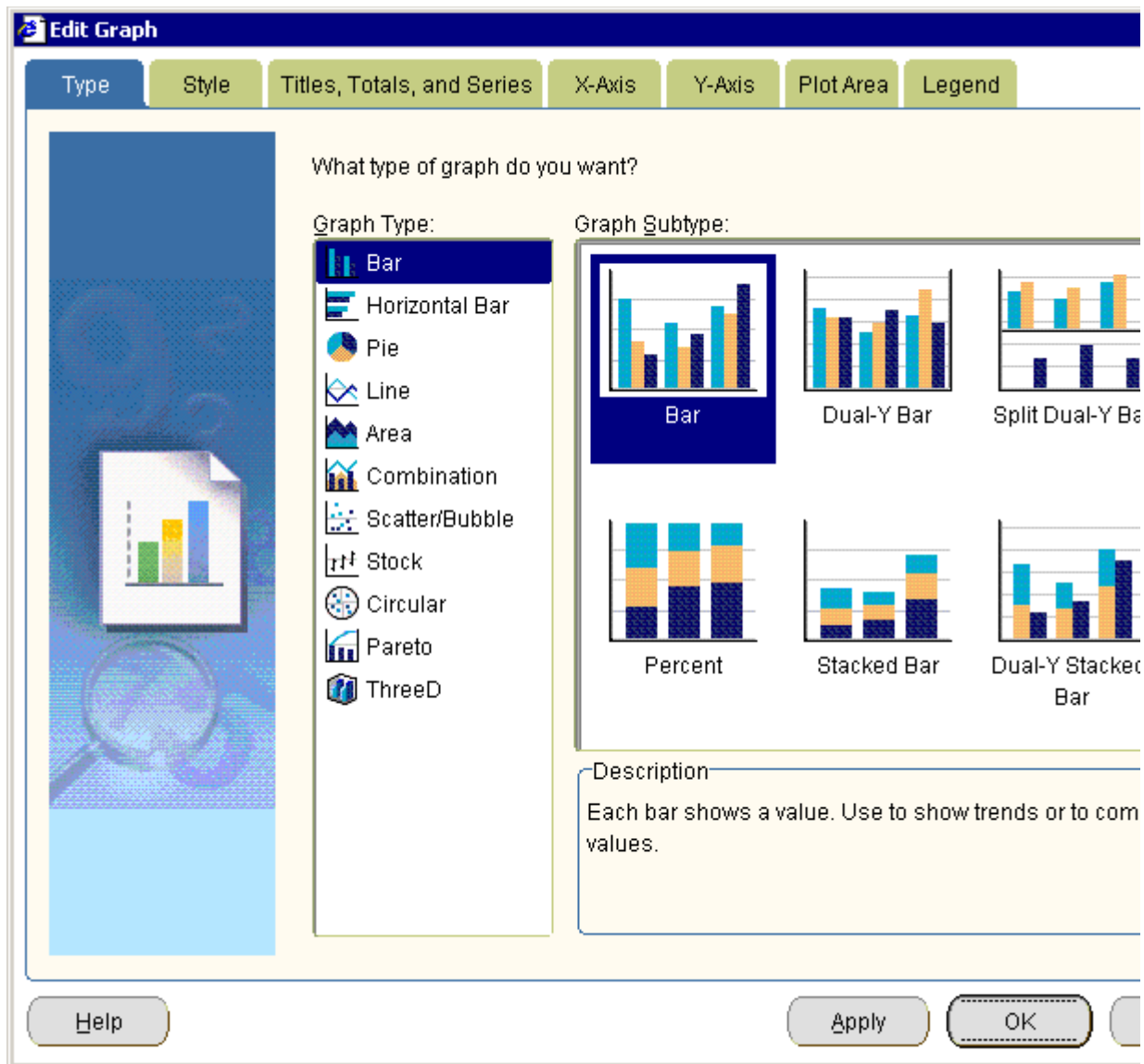
You edit a graph to change the graph settings for the graph that Discoverer creates for you automatically for every worksheet. Discoverer graphs enable you to display data and trends visually. You can display, hide, and edit worksheet graphs.

Discoverer provides the Edit Graph dialog to enable you to change the graph settings for a graph. If at any time you want to use default settings for the remaining tabs in the Edit Graph dialog, simply click OK.

**Hint:** Before you start, ensure that the worksheet displays the data you want to plot on the graph (for more information, see "[About using graphs in Discoverer](#)").

To edit a graph:

1. Choose Edit | Graph to display the "[Edit Graph dialog: Type tab](#)", and choose a graph type from the list of graph types and graph sub-types.



For more information about choosing a graph type, see ["About graph types available in Discoverer."](#)

**Note:** If the worksheet contains a graph that is hidden (that is, the Graph check box is cleared in the View menu), Discoverer displays the Edit Graph dialog, which enables you to edit the graph.

2. Display the ["Edit Graph dialog: Style tab"](#), which enables you to select a graph style.

A graph style is a predefined set of colors and text styles that Discoverer applies to the graph. For example, Default, Autumn, Financial, Black and White.

3. Display the ["Edit Graph dialog: Titles, Totals, and Series tab"](#), where you:

- (optional) define a graph title
- use the **What would you like to display?** options to select what data you want to display (that is, data only, totals only, or both data and totals)
- use the **Graph series by** options to select whether to plot data by row or column

- (optional) when creating a pie graph, select which row or column you want to plot on the graph



If you are creating a pie graph, the Pie Chart Options button is active.

4. (optional) If you are creating a Pie Chart, select the column or row you want to plot on the graph, as follows:
  - a. Click Pie Chart Options to display the "Edit Graph dialog: Pie Chart Options tab (column)" or "Edit Graph dialog: Pie Chart Options tab (row)".
  - b. Select the row or column you want to graph from the list of items.
  - c. Click OK.

**Note:** When you click Next, you go straight to the "Edit Graph dialog: Legend tab". You do not define X or Y axes for pie graphs.

5. Display the "Edit Graph dialog: X-Axis tab", where you specify how the X axis is displayed.
6. Display the "Edit Graph dialog: Y-Axis tab", where you specify how the Y axis is displayed.
7. (optional) If you are creating a dual-Y graph, display the "Edit Graph dialog: Y2-Axis page (on dual-Y type graphs)", where you specify how the Y-2 axis is displayed.

For more information about creating dual-Y graphs, see "Notes about creating dual-Y graphs".
8. Display the "Edit Graph dialog: Plot Area tab", where you specify the color and style of plotted data
9. Display the "Edit Graph dialog: Legend tab", where you specify the graph legend that provides information about how items are represented on the graph.
10. Click the Finish button to save the details and display the graph.

Discoverer displays the graph on the worksheet. By default, graphs are displayed at the right-hand side of worksheet data. To change where a graph is displayed, choose View | Graph Placement and choose a position from the list of options.

## Notes

- To automatically arrange graph components, right-click on the graph border and choose Auto Layout.

## How to hide and display a graph

---

You hide a graph when you no longer need it. You display a graph when you want to display worksheet data visually or edit a graph.

**Note:** Hiding a graph does not remove the graph from the worksheet. You can always display the graph later if required.

To hide or display a graph:

1. Display the worksheet that contains the graph.
2. Choose View to display the View menu, and do one of the following:
  - Select the **Graph** check box to display the graph for the current worksheet  
If this option is grayed out, to create a graph choose Edit | Graph to display the Edit Graph dialog.
  - Clear the **Graph** check box to hide the graph for the current worksheet

Discoverer updates the worksheet with the changes that you specify.

## How to change the position of a graph

---

You change the position of a graph when you want to change where it is displayed in relation to the worksheet data. For example, you might want to display a graph below worksheet data, or display a graph in a separate window.

To position a graph:

1. Choose View | Placement and choose one of the placement options.

For example, choose the Graph below Table/Crosstab option to position the graph beneath the data, or choose Separate Window to display the graph in a separate window.

Discoverer displays the graph in the position that you specified.

## Notes

- When you change the position of a graph, you change how the graph is positioned on screen. This does not affect how a worksheet and graph prints. For example, Discoverer always prints graphs on a separate page, after the worksheet data.
- If you use Discoverer Viewer or Oracle Portal to publish worksheets, Discoverer Viewer and Oracle Portal display worksheet graphs above or below worksheet data.