Oracle® Application Server Discoverer Plus

User's Guide

10*g* (9.0.4)

Part No. B10268-01

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Oracle Application Server Discoverer Plus User's Guide, 10*g* (9.0.4)

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Preface

Welcome to Discoverer Plus - the complete business intelligence (BI) analysis tool that works over the Internet.

Discoverer Plus enables you to query complex databases without having to understand the database language SQL (Structured Query Language). You can use Discoverer Plus to retrieve and analyze data, and produce reports in printed format or a range of electronic formats.

OracleAS Discoverer Navigation and Accessibility

Keyboard Navigation

OracleAS Discoverer supports standard keyboard navigation. Standard keyboard navigation includes the use of the tab key, mnemonics (using the Alt key and the underlined character), and accelerators (such as Alt+F4 to exit a window).

Changing font sizes and colors for enhanced readability

You can change the font size and color of worksheet items, headings, and totals to make them more readable.

To change the default font size and color of new worksheet items, headings, and totals, choose Tools | Options and specify appropriate settings on the "Options dialog: Default Formats tab".

To change the font size and color of existing worksheet items, headings, and totals, choose Sheet | Format and specify appropriate settings on the "Edit Worksheet dialog: Format tab".

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Note: The JAWS screen-reader requires that Java Access Bridge software is installed on the client machine. You can download Java Access Bridge software from the Sun Microsystems site at http://java.sun.com/products/accessbridge/.

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Intended Audience

Use this guide when you want to use Discoverer to view and manipulate data to support business decisions and you want to know how to:

- create new workbooks (i.e. collections of business intelligence reports) or use existing workbooks to find the information you are interested in
- format the information to meet your requirements
- analyze the information in different ways

- share the information with other users

Structure

This manual contains the following chapters:

- Part 1 Getting Started
  - "Introducing Discoverer Plus"
  - "Starting Discoverer"
  - "About the Discoverer workarea"
  - "Using workbooks and worksheets"
  - "Formatting worksheet data"
  - "Creating graphs in Discoverer"
- Part II Analyzing Data
  - "Pivoting data"
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  - "Using conditions"
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  - "Sorting data"
  - "Using calculations"
- Part III Sharing results with others
  - "Printing worksheets and graphs"
  - "Exporting data to other applications"
  - "Sharing workbooks"
  - "Publishing workbooks to OracleAS Portal"
- Part IV Advanced Discoverer Plus features
  - "Advanced Discoverer Plus features"
- Part V Discoverer Plus Reference

- "Reference dialogs"

- Appendices
  - "Discoverer calculation examples"
  - "Discoverer support for Oracle Applications"

Related Documents

For more information, see the following manuals:

- *Oracle Application Server Discoverer Plus Tutorial*
- *Oracle Discoverer Administrator Administration Guide*
- *Oracle Discoverer Administrator Tutorial*
- *Oracle Application Server Discoverer Configuration Guide*

Conventions

The following conventions are used in this manual:

Convention	Meaning
File | New	Menu options are shown with a vertical bar separating the menu and the name of the option. For example, File | New indicates the selection of the New option from the File menu.
bold type	Bold type is used to distinguish field names in Discoverer dialogs.
italic type	Italic type is used for the names of other Oracle publications. **Note**: Italic type is also used on reference dialogs to refer to areas of a dialog that have no label.
< >	Angle brackets enclose user-supplied names.
`monotype`	Characters you type are shown in monotype.

Discoverer often gives you several ways to perform an operation. For example, to create a new condition you could:

- choose Tools | Conditions
- click the Conditions toolbar button

Since you might not be using a mouse, the Discoverer documentation always tells you the menu and menu option to choose.

Prerequisites to run Discoverer Plus

To run Discoverer Plus, a Discoverer End User Layer must already exist. The Discoverer manager must have created or upgraded the End User Layer using Oracle Discoverer Administrator (which is shipped as a component of Oracle Developer Suite 10*g* (9.0.4).

Part I

Getting Started

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

This part contains the following chapters:

1

Introducing Discoverer Plus

Introducing Discoverer Plus

This chapter introduces Discoverer Plus, and includes the following topics:

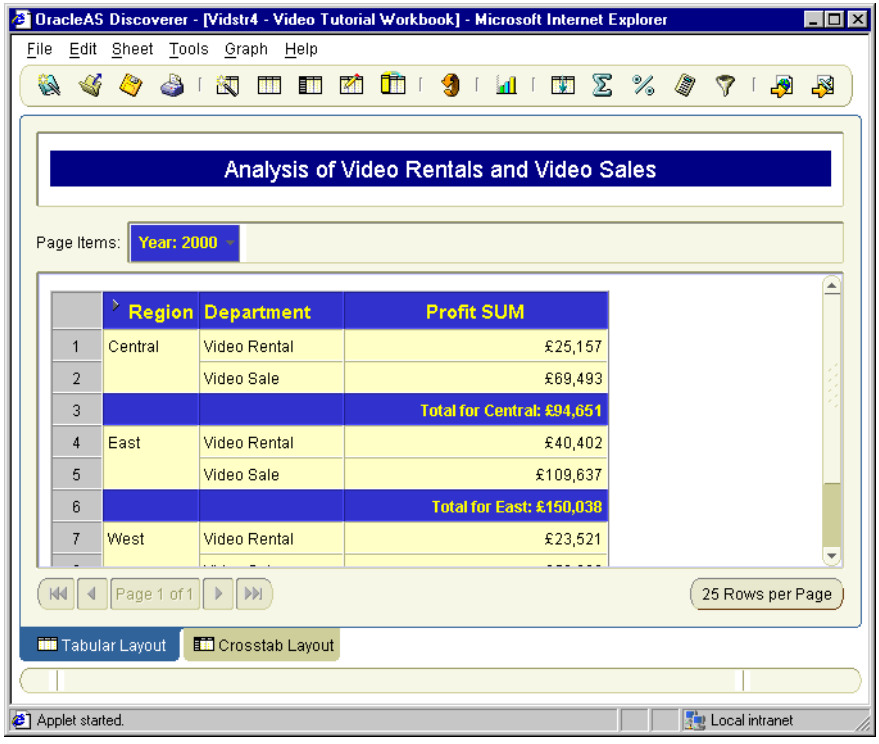
What is Discoverer Plus?

Discoverer Plus is a business intelligence (BI) analysis tool that works over the Internet.

Discoverer Plus is the Internet version of the award-winning Windows product, Discoverer Desktop. If you are already familiar with Discoverer Desktop, you will recognize many Discoverer Plus features. The two versions are compatible and you can share work between them. The figure below shows the Discoverer Plus main screen, with a table worksheet displayed in the work area that analyzes video store profit figures across geographical regions.

For more information about using the Video Stores sample workbooks that are installed with Discoverer, contact the Discoverer manager.

Figure 1–1 Discoverer Plus main screen

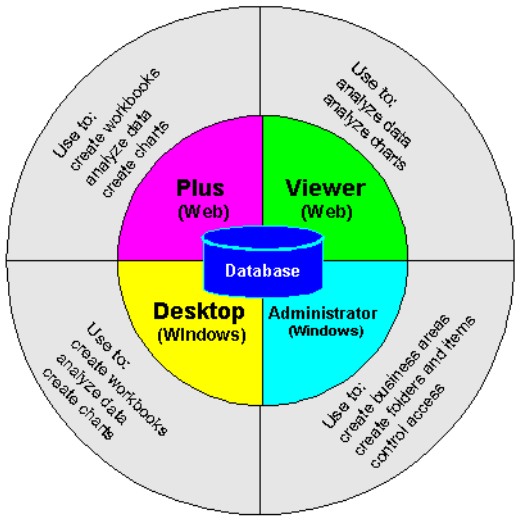


Using Discoverer, you can access and analyze data that you know is in your company's database, without having to understand complex database concepts. Using Wizard dialogs and menus, Discoverer guides you through the steps to get and analyze data that supports your business decisions. Discoverer does the hard work for you.

Note: For more information about maximizing Discoverer performance, see "About designing workbooks for maximum performance".

The figure below shows how Discoverer Plus fits into the OracleAS family of Business Intelligence products.

Figure 1–2 Discoverer family of business intelligence products



What are the new features in Discoverer Plus Version 9.0.4?

Discoverer Plus Version 9.0.4 contains the following new and improved features:

- Analytic function templates - Discoverer Plus provides easy-to-use templates for the most popular analytic functions. These templates enable you to analyze data in powerful ways and make business decisions.

  For more information about analytic function templates available, see "What analytic function templates are available in Discoverer".

- Enhanced graphing capability - use Discoverer's expanded range of graph styles, with greater control over axis and axis title positioning.
- Worksheet titles - you can now add editable titles to worksheets, including a range of text variables (e.g. date and time).

Why should I use Discoverer?

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
  - comparing results from "what if" scenarios
- prepare reports showing the results of your analysis
- share data with others, and in other applications (e.g. Microsoft Excel)

What is different about Discoverer Plus?

Discoverer uses a unique way of accessing data. Comparing Discoverer with other ways of accessing data that you might have used will help 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
- wait a long time for the data to be retrieved

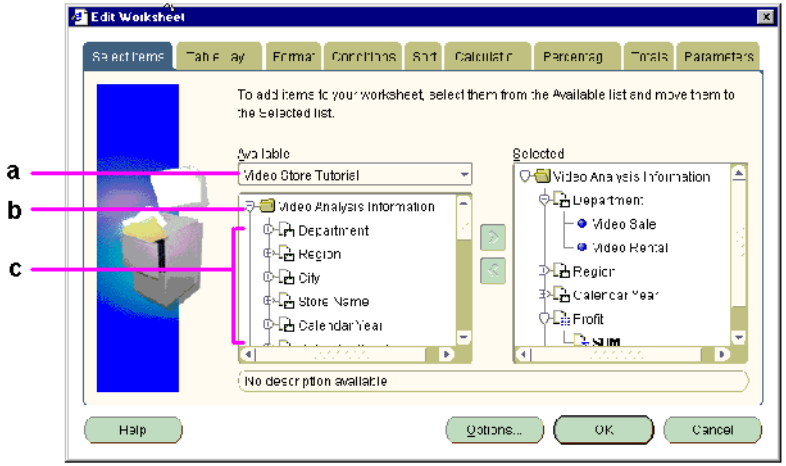
- reformat the data to analyze it (often by exporting it to a spreadsheet package, graphics package, or statistical analysis package.

With 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 want a long time to get information. You do not have to use another application to analyze your data.

What are business areas, folders, and items?

When working with Discoverer, you use business areas, folders, and items (see figure below).

Figure 1–3 Discoverer Item Navigator dialog showing business areas, folders and items



Key to figure:

a. A Discoverer business area (named Video Store Tutorial)

b. A Discoverer Folder (named Video Analysis Information)

c. Discoverer Items (e.g. Department, Region, City)

What are business areas

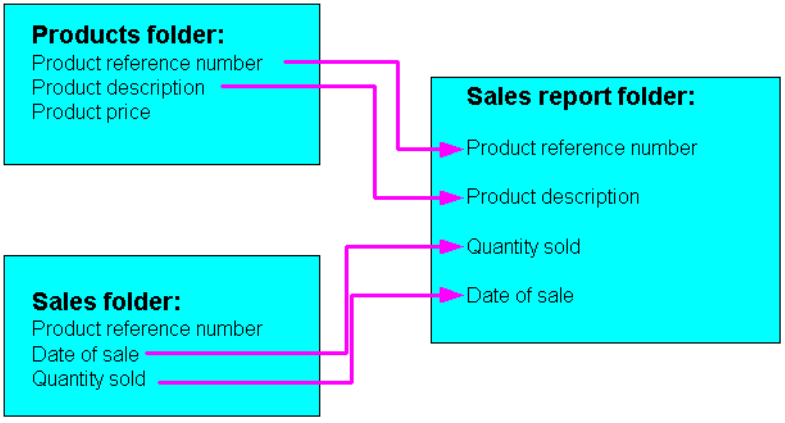
A business area is a collection of related information in the database. The Discoverer manager works with the different departments in your organization to identify the information that each department requires from the database. The Discoverer manager locates the information in the database and groups it into business areas. For example, a company's business areas might be budgets, finance, and projects. The Discoverer manager also decides which users can access which business areas.

What are folders

Within each business area, the Discoverer manager organizes information into folders. A folder is a collection of closely related information. For example, information about products that your company produces (e.g. reference number, description, product price) might be in a folder called Products.

The different folders in a business area might contain related information. For example, a business area might contain both a Product folder and a Sales folder. The Sales folder contains information about the sales of each product (e.g. the product reference number, when the product was sold, the quantity that was sold). If you wanted to see a description of a product and when it was sold, you would need information from both the Products folder and the Sales folder. The figure below illustrates how information from both the Products folder and the Sales folder is combined to create a folder called Sales Report. The Sales Report might be used to create workbooks for product analysts who want to analyze sales.

Figure 1–4 A Discoverer folder containing information from a Products folder and a Sales folder



What are items

Items are different types of information within a folder. For example, if a Products folder contains reference numbers, descriptions, and the price of each product, the items in the Products folder are reference number, description, and price.

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 that you want to analyze.

Notes about business areas, folders, and items

If you are familiar with databases:

- folders are similar to tables and views
- items are similar to columns

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. The Discoverer manager uses the Discoverer Administrator tool 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

In some organizations, the Discoverer manager also creates predefined workbooks for Discoverer users.

About the tutorial workbook?

Discoverer is supplied with an example database called Video Stores Tutorial. The Video Stores Tutorial contains data about a fictitious video store business. Information stored in the Video Stores Tutorial includes:

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

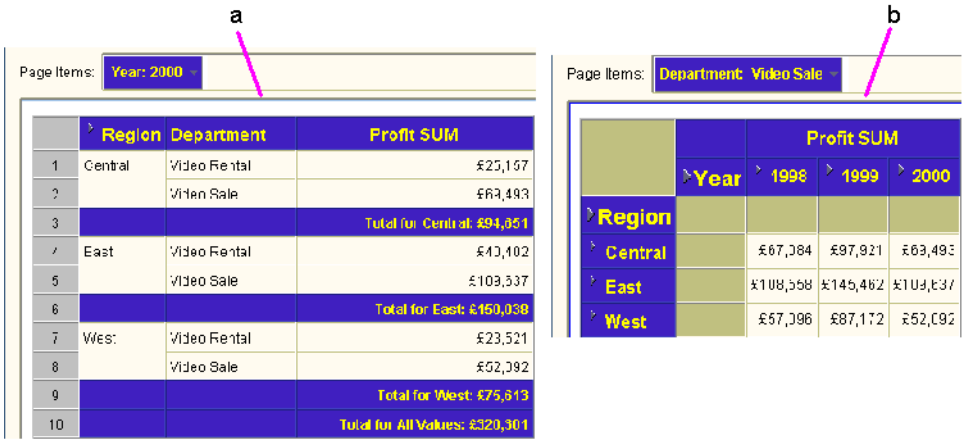
Discoverer is also supplied with a sample workbook called Video Tutorial Workbook that you can use to analyze the example data. The Video Tutorial Workbook contains two worksheets:

- 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 profitability of the video store business (see figure below).

Figure 1–5 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.

What are worksheets, workbooks, and queries?

A worksheet contains one or more reports that you have created (for more information, see "What are worksheets?").

A workbook is a collection of worksheets (for more information, see "What are workbooks?")

A query is a search of the database that finds and retrieves the data you want to analyze. Each worksheet in a workbook contains the result of a query. When you see the term “query” while working with Discoverer Plus, think of it as a worksheet containing retrieved data. For more information about SQL and queries, see "What is SQL".

Note: For more information about maximizing Discoverer performance, see "About designing workbooks for maximum performance".

What is a typical workflow with Discoverer?

As you become more familiar with Discoverer, you will find a workflow that suits you best. Typically, using Discoverer is a three-stage process:

- "Stage 1: Getting the data you want"
- "Stage 2: Analyzing your data"
- "Stage 3: Sharing your data with others"

Stage 1: Getting the data you want

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

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

Stage 2: Analyzing your data

Your ultimate goal in using Discoverer is to analyze your business and 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 teachers have we hired in the previous year?
- 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 into data to see more detailed information
- drilling out of data to see consolidated information
- drilling out to analyze data in other applications
- create totals, calculate percentages, and create custom calculations on your data
- display your data visually in graphs and charts

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

Stage 3: Sharing your data with others

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

If these people also have Discoverer, you can share your workbooks and worksheets with them. You can store your workbooks in the database and schedule them to update at regular intervals.

If these people do not have Discoverer, you can publish your reports in popular application formats (e.g. Microsoft Excel, HTML).

About the Discoverer Plus help system

The Discoverer Plus Help System gives you context sensitive access to reference information from the Discoverer Plus User's Guide in HTML format.

To start the Help System either click Help in a Discoverer dialog or choose Help | Help Topics.

To find a topic in the Help System:

- click the Contents icon at the top of each help page or choose Help | Help Topics (to see a list of the topics in the help system)
- click the Index icon at the top of every help page to see a list of index entries

To view (and print) the Discoverer Plus User's Guide in PDF format, use the OracleAS documentation CD.

Hint: To search for words or phrases, use the Discoverer Plus User's Guide in PDF format.

2

Starting Discoverer

Starting Discoverer

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

- "What is a Discoverer connection?"
- "About starting Discoverer"
- "About starting Discoverer for the first time"
- "How to start Discoverer using an existing connection"
- "How to exit Discoverer"
- "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
- 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

- 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:
use an existing pre-defined connection (known as a public connection) created by the Discoverer manager	the Discoverer manager has created login details for you so that you do not have to supply login details yourself
use an existing user-defined connection (known as a private connection) that you created yourself	you want to connect to Discoverer using login details that you saved previously
create a new user-defined connection (known as a private connection)	you want to connect to Discoverer using a new login

About starting Discoverer for the first time

Depending on which 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 machine. 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 (e.g. 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.

How to start Discoverer using an existing connection

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

- an existing public connection created by the Discoverer manager
- an existing private connection that you created earlier

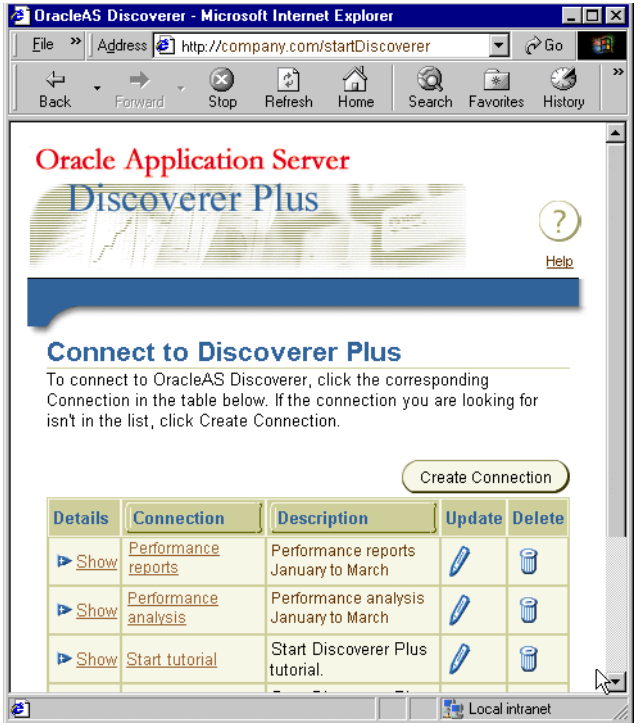
To start Discoverer using an existing connection:

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 (e.g. 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 Discoverer Plus page is displayed (see figure below).

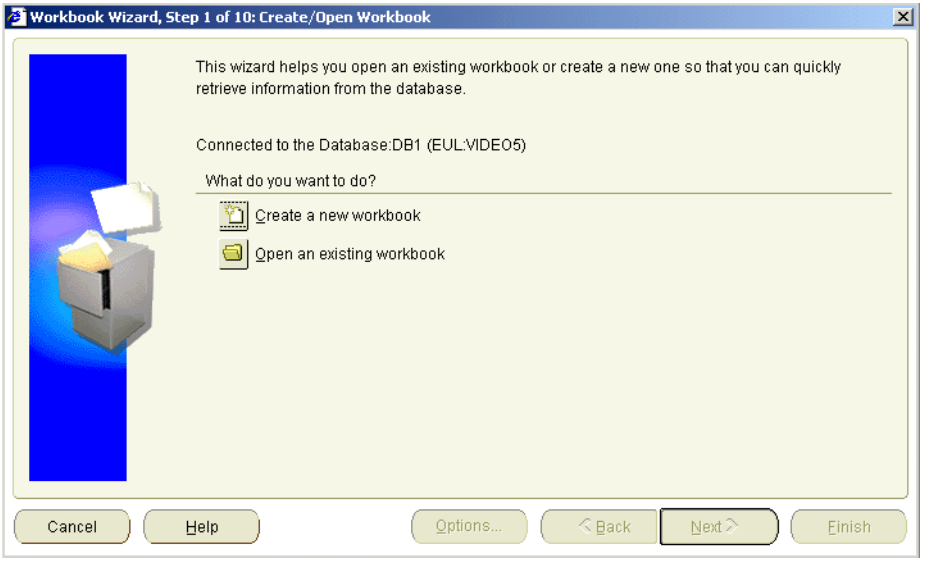


A list of the existing Discoverer connections is displayed in the Connection column.

3. Click the name of a connection name in the Connection column to start Discoverer.

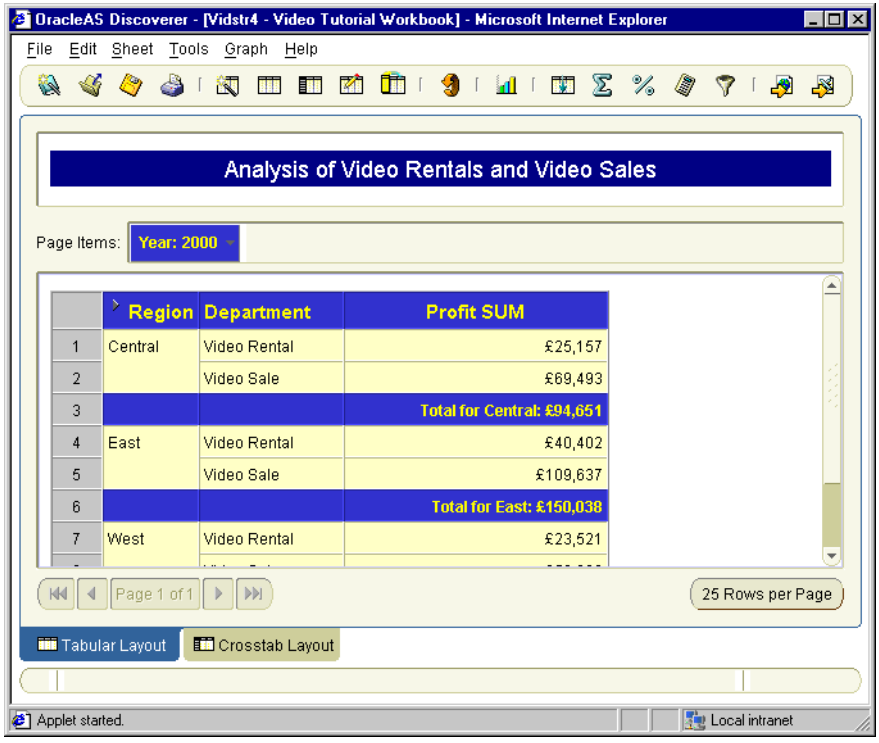
   Hint: To confirm that you are using the correct login, click Show in the Details column to display more information about a login. To hide additional information, click Hide.

   Discoverer starts and displays the "Workbook Wizard: Create / Open Workbook dialog".



4. Follow the steps in the Workbook Wizard to either open a workbook or create a new workbook.

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



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 exit Discoverer

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

To exit Discoverer:

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 will also exit.

Frequently asked questions

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

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. This enables you to focus on business issues instead of data access issues.

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 on the network. For example, jchan, or marketing.
- A password - a secret key that you used 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 do I need to 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.

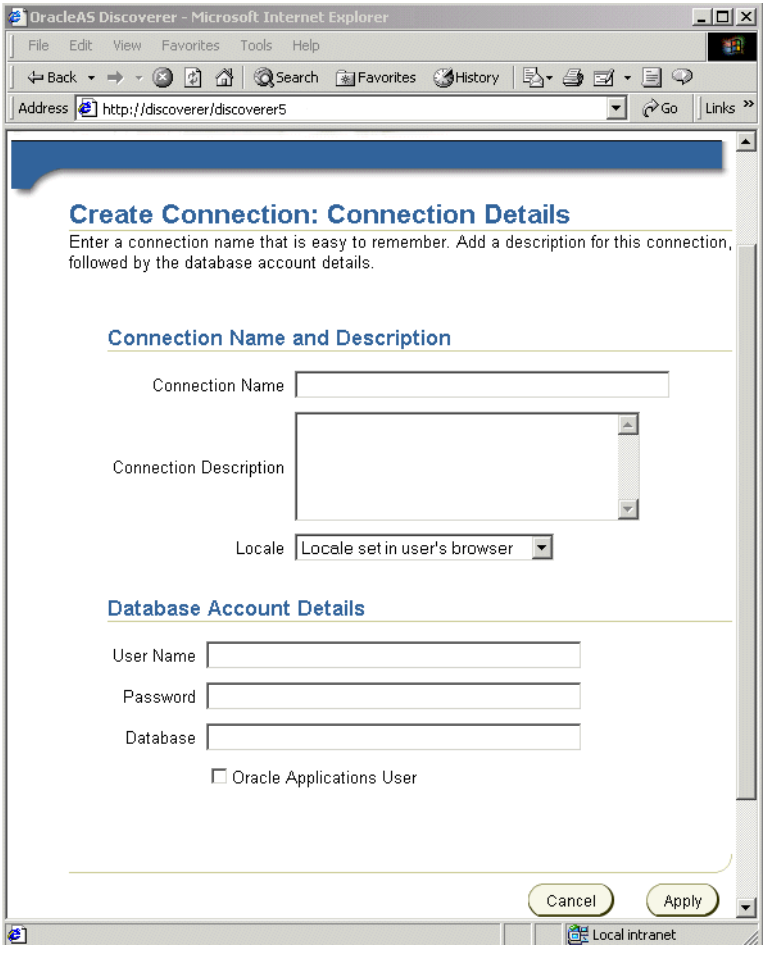
To create and save login information in a Discoverer connection:

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

   Note: 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 (e.g. 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 Discoverer Plus page is displayed. A list of the existing Discoverer connections is displayed in the Connection column.
3. Click Create Connection to display the Create Connection: Connection Details page.



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

   The connection name is displayed in the Connections column on the Connect to Discoverer Plus 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 will be used to access.

6. Select the language that you want to use from the **Locale** drop down list.
7. Specify the user name, password, and database details for the connection that you want to create.

   Hint: If you are not sure what user name, password, and database details to enter, contact the Discoverer manager.
8. Choose the type of user you want to connect as:
   - to create a non-Oracle Applications Discoverer connection, clear the **Oracle Applications User** check box

     Hint: The **Oracle Applications User** check box might be cleared by default.
   - to create an Oracle Applications Discoverer connection, select the **Oracle Applications User** check box
9. Click Apply to save the details entered.
10. If you selected Oracle Applications as the Login Method, 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.
11. If the user name has access to more than one End User Layer, 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.

    The Connect to Discoverer Plus page is displayed. The new connection that you have created is included in the list of connections.

    To connect to Discoverer using the connection that you have created, click the new connection name in the **Connection** list.

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 connect to Discoverer.

To edit a Discoverer connection:

1. Launch a Web browser.

2. Go to the Discoverer web address given to you by the Discoverer manager.

   Note: 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 (e.g. 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 Discoverer Plus page is displayed. A list of the existing Discoverer connections is displayed in the Connection column.

3. Click the pencil icon in the **Update** column next to the name of the connection that 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.

4. Change the connection details as required.
5. Click Continue.
6. If the user name has access to more than one End User Layer, 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.

7. Click Finish to save the details and return to the Connect to Discoverer Plus page.

   You can now use the updated connection to start Discoverer.

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

   Note: 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 (e.g. 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 Discoverer Plus page is displayed. A list of the existing Discoverer connections is displayed in the Connection column.
3. Click the trash can icon in the **Delete** column next to the name of the connection that you want to delete to display the Confirmation dialog.

   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.
4. Click Yes to delete connection and return to the Connect to Discoverer Plus 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.

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.

When and why do I need to change my password?

Typically you will have to 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 will 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.

How do I change the password for a connection?

You change the password for a connection when a password:

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

To change the password for a connection:

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

   Note: 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 (e.g. 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 Discoverer Plus page is displayed. A list of the existing Discoverer connections is displayed in the Connection column.

3. Click the **Update** icon next to the connection for which you want to change the password.
4. Click Change Database Password.
5. In the **Password** field, enter the current database password for the current user name.
6. In the **New Password** field, enter a new database password for the current user name.
7. In the **Verify Password** field, re-enter the new database password for the current user name.
8. Click Finish.

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

   Note: 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 (e.g. 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 Discoverer Plus page is displayed. A list of the existing Discoverer connections is displayed in the Connection column.

3. Click the Update icon next to the connection for which you want to change the End User Layer.
4. In the **Password** field, enter a valid password for the Discoverer connection.
5. Click Continue.
6. If the user name for the current Discoverer connection has access to more than one End User Layer, 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 Discoverer Plus page is displayed. You can now use the connection to start Discoverer.

Notes

- If the user name does not have access to more than one End User Layer, 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.

What is Single Sign-on?

Single sign-on is a feature that enables end users to use the same user name and password to authenticate several different Internet applications. This is obviously of great benefit since people do not like to sign-on more than is necessary.

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

3

About the Discoverer workarea

About the Discoverer workarea

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

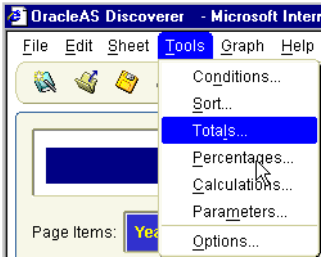
- "About the Discoverer menu bar and toolbars"
- "About the workbook window"
- "About tool tips"
- "What are axis items?"
- "About data points"
- "About the Workbook Wizard"
- "About using the Workbook Wizard"

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 Discoverer menu bar and toolbars

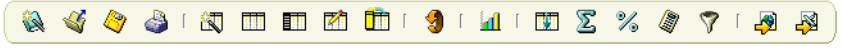
Discoverer provides you with a standard menu bar and toolbar. Each menu selection provides you with a dialog or Wizard to help you perform a task. The figure below shows the Tools menu.

Figure 3–1 Discoverer Menus



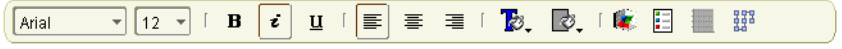
The toolbar contains icons for the most common menu options (e.g. Save, Print, Refresh, Edit Worksheet, Sort). As you become more familiar with Discoverer, you can use the toolbar instead of the menu bar to choose options.

Figure 3–2 The Discoverer toolbar



If you have created a Discoverer graph, you can also use the additional graph tool bar to easily edit graph components (see figure below).

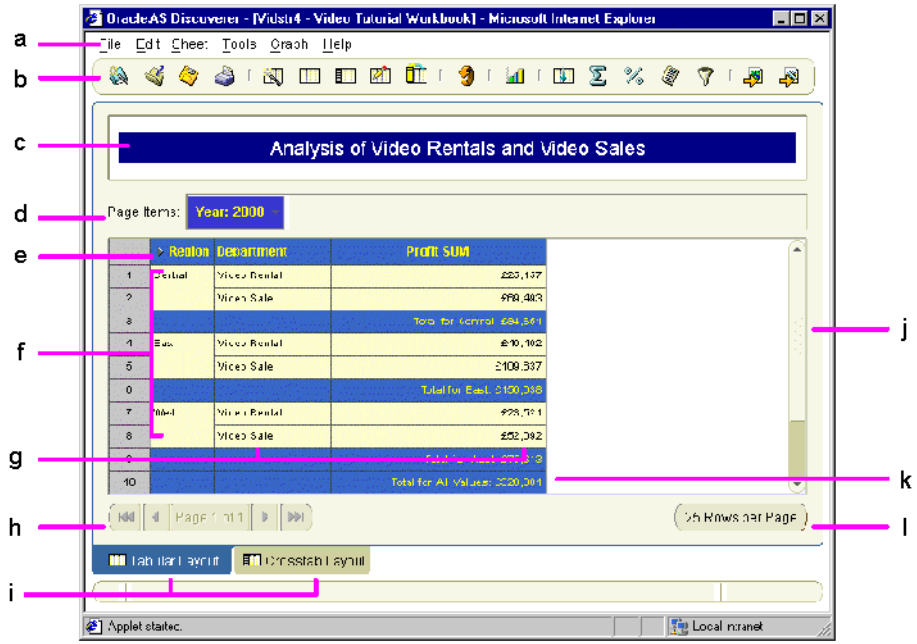
Figure 3–3 The Discoverer graph toolbar



About the workbook window

The workbook window is where you will do most of your analysis work with Discoverer. The workbook window displays the data in the workbook. Discoverer's navigation facilities make it easy to find your way around workbooks and worksheets to find the information you want.

Figure 3–4 The Discoverer workbook window



Key to figure:

- **a.** Menu bar - click on the menu bar to display drop down menus.
- **b.** Toolbar - use the toolbar options as a short-cut to menu options.
- **c.** Title bar - displays the title of the workbook.
- **d.** Page Items area (also known as the Page axis).
- **e.** Top Axis showing item headings.
- **f.** Left Axis - showing item values.
- **g.** Data Points - showing item values.
- **h.** Worksheet navigation buttons - enabling you to page through long lists of data.
- **i.** Worksheet Tabs - click a different tab to display a different worksheet.

  Hint: Right click on a worksheet tab to display a drop down menu of worksheet management options (e.g. delete, rename).

j. Scroll bar - use to scroll up and down data in a worksheet.

k. Worksheet subtotal and grand totals - summarizing numeric values.

l. Sheet format button - click to change how many rows are displayed on each page.

Hint: You can zoom into and out of the worksheet area using the + and - keys on the numeric keypad of a keyboard, as follows:

- press '+' on the numeric keypad to zoom into the worksheet
- press '-' on the numeric keypad to zoom out of the worksheet

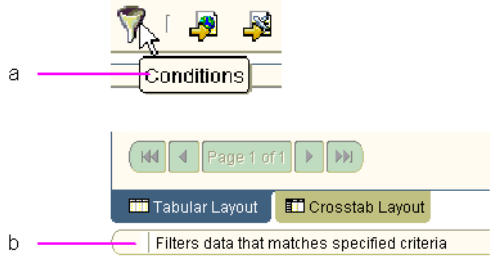
This facility enables you to adjust the text size on a worksheet without changing the font size of worksheet items.

About tool tips

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

The figure below shows the tool tip for a condition item and also shows where additional information is displayed at the bottom of the workbook.

Figure 3–5 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 used to displays the Conditions dialog.

b. The status bar below the worksheets provides extra information about the button option.

What are axis items?

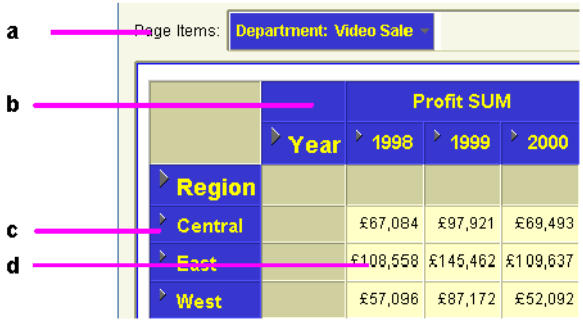
Axis items are items that appear in the workbook window in:

- 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. You can then use the axis items to see the sales of a particular region in a particular year. In the figure below, Department item is on the page axis, Year is on the top axis, and Region is on the left axis.

Figure 3–6 A crosstab worksheet showing page axis, left axis, and top axis



Key to figure:

a. The page axis (Page Items area)

b. The top axis

c. The left axis

d. Data points

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 or to see listed on a table. Typically:

- on a table worksheet, data points contain text and numeric information (e.g. 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 (e.g. monthly profits, sales amounts by product). In the figure above, the data point value $108, 558 is the calculated value for the East region in the year 1998.

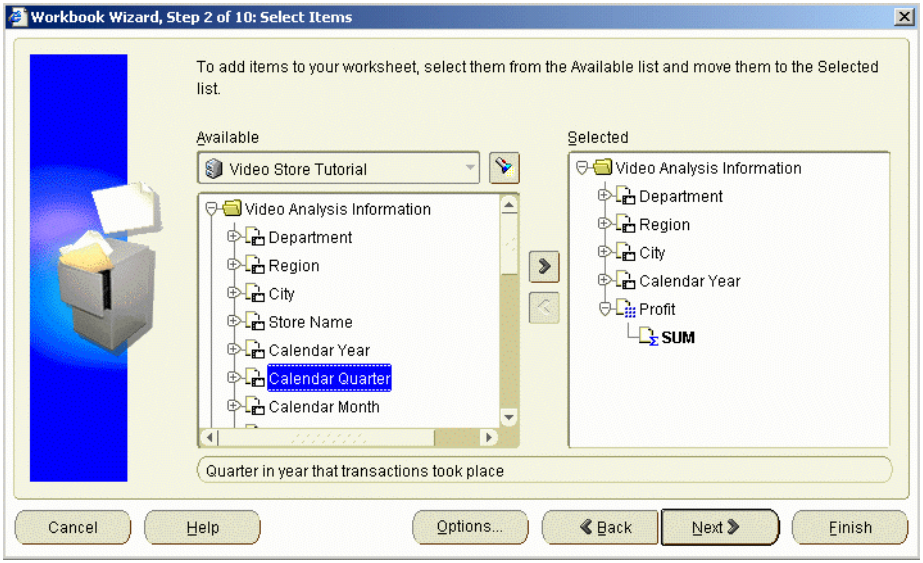
About the Workbook Wizard

Discoverer's Workbook Wizard enables you to easily create and configure workbooks and worksheets.

About using the Workbook Wizard

Whenever you create a new worksheet, the Workbook Wizard walks you through the steps necessary to get data from the database. Simply click the folder or item you want in the worksheet then drag it to the Selected column.

Figure 3–7 The item navigator page of the Discoverer Workbook Wizard



4

Using workbooks and worksheets

Using workbooks and worksheets

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

- "About icons in the Workbook Wizard"
- "How to create new workbooks"
- "How to add new worksheets to a workbook"
- "How to view a workbook's properties"
- "About opening workbooks in a non-Oracle database"

What are workbooks?

Workbooks are Discoverer files that contain worksheets displaying data retrieved from the database.

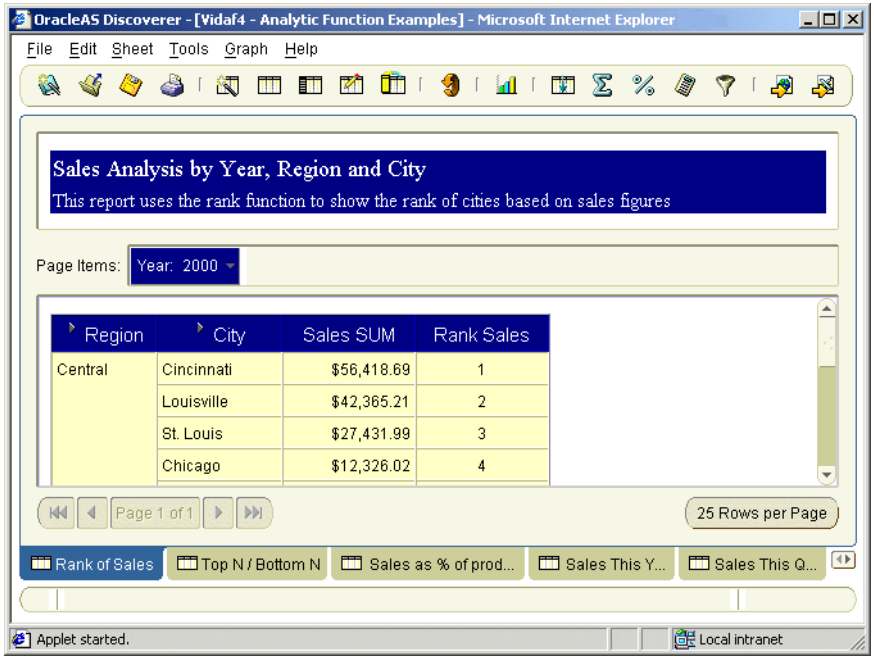
If you are familiar with spreadsheet applications (e.g. Microsoft Excel), think of a workbook as a spreadsheet file.

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 league table 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".

Figure 4–1 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, and open workbooks from the database. You can also open scheduled workbooks (for more information about scheduled workbooks, see "Using scheduled workbooks").

What are worksheets?

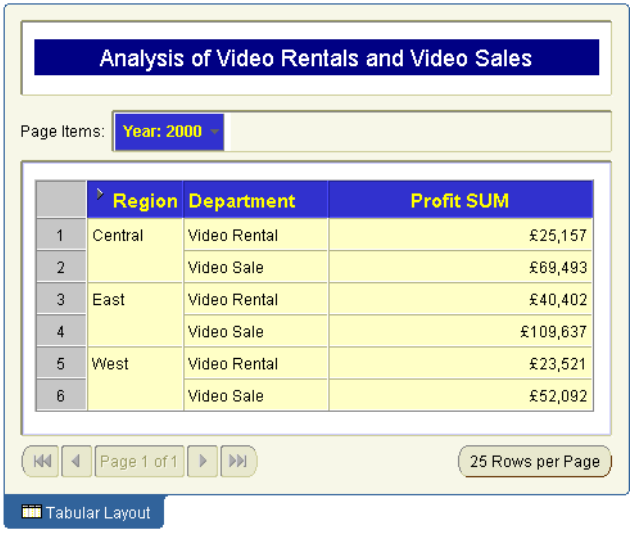
Worksheets contain the data that you want to analyze, together with a number of Discoverer components to help you analyze the data. For example, a worksheet can contain parameters, totals, percentages, exceptions, and calculations.

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

If you are familiar with spreadsheet applications (e.g. 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.

Figure 4–2 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 designing workbooks for maximum performance

Whether you are using Discoverer Plus 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 are Discoverer's export option, see Notes below)

Notes

- When end users export data in Discoverer Plus 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 can open a workbook that you have saved in the database. You can also open workbooks that other users have saved in the database and 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 already started Discoverer, do the following:

a. Choose File | Open to display the Open Workbook dialog.

b. Select the **Database** radio button.

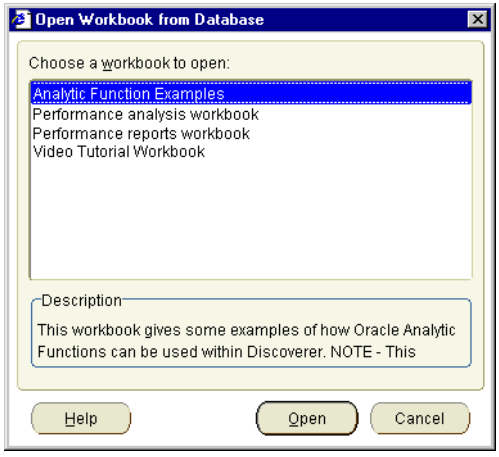
c. Click Open to display the "Open Workbook from Database dialog".

d. Move to Step 4.

2. Click the **Open an existing workbook** button.

   The extra options Database and Scheduled are displayed.

3. Click the **Database** button to display the "Open Workbook from Database dialog".

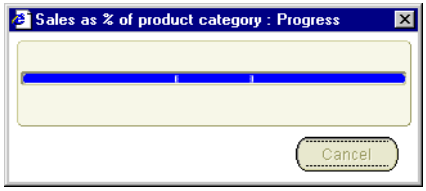


4. Select the workbook that you want to analyze from the list of workbooks.

   Hint: If the workbook you want to open is not in the list of workbooks, make sure you chose the correct connection when you started Discoverer Plus.

5. Click Open to display the workbook.

   Discoverer first evaluates the workbook to determine how long it will take to open the first worksheet. Depending on how Discoverer is configured, a progress dialog shows you the time estimate for loading the first sheet.



For more information about configuring Discoverer, see "Options dialog: Query Governor tab".

6. If the workbook or worksheet includes a parameter, you are prompted to enter a value with which to filter the data in the worksheet (see "Using parameters").

   The workbook and the first worksheet are displayed. If the workbook contains more than one worksheet, 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 Query Governor options (see "Options dialog: Query Governor tab"), a dialog opens to alert you and gives you two options:
  - 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. You can run the query at another time

  For example, you might click No if the data that you want is not in the first worksheet, but is in another worksheet. Click that 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 Sheet | Refresh Sheet.

How to open a scheduled workbook

You can open a workbook that you have scheduled in the database. You can also open workbooks that other users have scheduled in the database and have shared with you (for more information, see "What are scheduled workbooks?").

To open a scheduled 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 already started Discoverer, do the following:

   a. Choose File | Open to display the Open Workbook dialog.

   b. Select the **Scheduled** radio button.

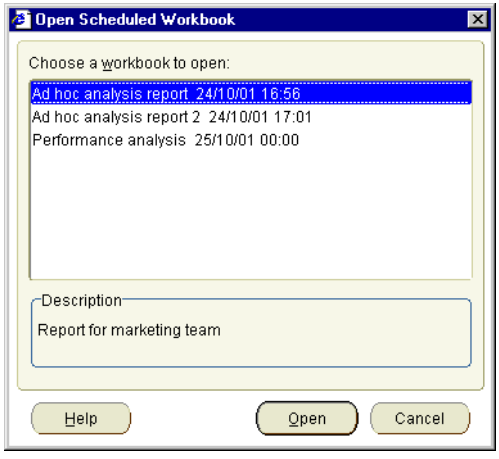
   c. Click Open to display the "Open Scheduled Workbook dialog".

   d. Move to Step 4.

2. Click the **Open an existing workbook** button.

   The extra options Database and Scheduled are displayed.

3. Click the **Scheduled** button to display the "Open Scheduled Workbook dialog".



4. Select the workbook that you want to analyze from the list of workbooks.

   Hint: If the workbook you want to open is not in the list of workbooks, make sure you chose the correct connection when you started Discoverer Plus.

5. Click Open to display the workbook.

   Now you are ready to begin analyzing data using Discoverer!

Notes

- If you are already connected to Discoverer, you can also use the "Scheduling Manager dialog" to open scheduled workbooks, as follows:

  1. Choose File | Manage Workbooks | Scheduling Manager to display the "Scheduling Manager dialog".
  2. In the **Scheduled Workbooks** list, click + next to a scheduled workbook to expand the list and display sets of results for that scheduled workbook.
  3. Select a set of results from the expanded list of scheduled workbook results.
  4. Click Open to open the selected worksheet.

- When connected as an Oracle Applications user, the following rules apply:

  - If you connect as a particular user and responsibility and schedule a workbook, the scheduled workbook is specific to that user and responsibility.
  - If you connect as a particular user but a different responsibility from the one used to schedule a workbook, the scheduled workbook might contain different results from the original scheduled workbook that was created.

  For more information about using Discoverer as an Oracle Applications user, see "How to start Discoverer in Oracle Applications mode using an existing connection".

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

   Discoverer updates the workbook as you specified.

About saving workbooks to the database

You will often 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, you save the workbook in the database. Having saved the workbook in the database, you can open the workbook later using Discoverer Plus. You can also open workbooks that you have saved in the database using Discoverer Viewer and Oracle Discoverer Desktop Edition.

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.

How to save workbooks

When you save a workbook, you save it in the database. Before you can save it to the database, the Discoverer manager must have given you permission to do so. For more information about saving workbooks to the database, see "About saving workbooks to the database".

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

1. Choose File | Save.

   The changes are saved and the workbook remains open.

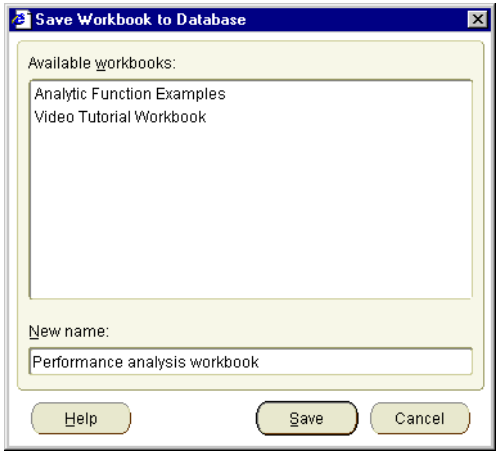
To save changes to a workbook and close the workbook:

1. 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 save the workbook under a new workbook name and keep the workbook open:

1. Choose File | Save As to display the "Save Workbook to Database dialog".



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

   You can enter a name that:

   - has a maximum length of approximately 45 characters (depending on the language in which you are running Discoverer)
   - includes upper or lower case characters, and spaces (for example *Jchan Sales Workbook March 2002*)

3. Click Save to save the workbook.

   Changes to the workbook made since the workbook was last saved are saved to the database under the new workbook name. The worksheet remains open. The original workbook remains in the database.

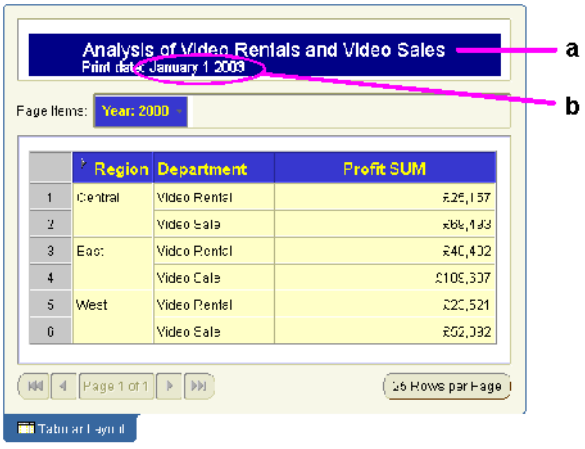
Notes

- Shared workbook names are prefixed with the name of the workbook owner.
- You can save changes to a shared workbook if you own that workbook. You cannot save changes to a shared workbook that you do not own that workbook. If you have made changes to a shared wookbook that you do not own and you want to keep those 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 wookbook remains unchanged. For more information about shared workbooks, see "About sharing workbooks".

About worksheet titles

Worksheet titles enable you to specify title text at the top of a worksheet (e.g. the worksheet name). A worksheet title can contain static text and text variables (e.g. date and time that are updated at runtime). The figure below shows an example of a worksheet with a worksheet title that contains the worksheet name and the print date.

Figure 4–3 A Discoverer worksheet containing a worksheet title



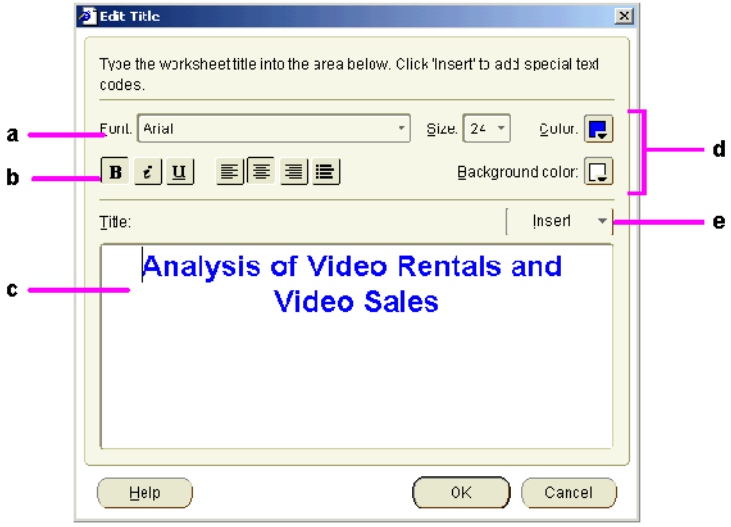
Key to figure:

a. The worksheet title area.

b. A text variable (i.e. Current date) containing the current date.

You use the "Edit Title dialog" to create worksheet titles (see figure below).

Figure 4–4 Edit Title dialog



Key to figure:

a. Font formatting fields to specify the font style of text in the **Title** field.

b. Formatting buttons used to specify the text style and text orientation for text in the **Title** field.

c. The **Title** field into which you enter the worksheet title text and text variables.

d. Text color and background color formatting buttons.

e. The **Insert** button used to display a list of text variables that you can insert into the **Title** field.

Notes

- Although worksheet titles are compatible between Discoverer Desktop and Discoverer Plus, the &Workbookname and &Worksheetname text variables in Discoverer Plus have different names in Discoverer Desktop, as follows:
  - &Workbookname is represented in Discoverer Desktop as &File.
  - &Worksheetname is represented in Discoverer Desktop as &Sheet

  These differences do not affect how text variables are displayed on the worksheet.

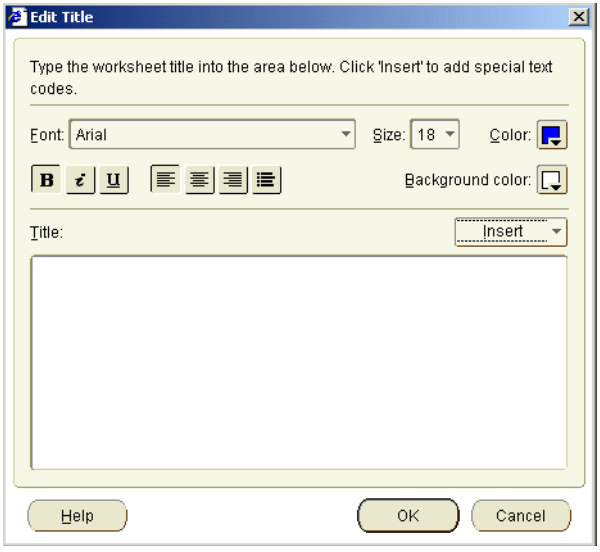
How to create or edit a worksheet title

You create or edit a worksheet title when you want to specify a title at the top of a worksheet. For example, you might want to display the worksheet name and current date at the top of a weekly report.

Note: Before you start, make sure that the worksheet title is displayed by selecting the **Title** check box on the Options dialog (for more information, see "How to display or hide a worksheet title").

To create or edit a worksheet title:

1. Open the workbook containing the worksheet that you want to edit (for more information, see "How to open workbooks").
2. Display the worksheet that you want to edit.
3. Choose Sheet | Edit Title to display the "Edit Title dialog" and use this dialog to specify a worksheet title.



Hint: You can also double-click on the worksheet title area to display the "Edit Title dialog".

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

   The title that you specified is displayed at the top of the worksheet.

Notes

- To edit a worksheet title, you can also right click over the worksheet title area and choose Edit Title from the drop down menu.
- You can specify whether to hide or display the title, (for more information, see "How to display or hide a worksheet title").

How to display or hide a worksheet title

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

To display or hide a worksheet title:

1. Open the workbook containing the worksheet that you want to edit (for more information, see "How to open workbooks").
2. Display the worksheet that you want to edit.
3. Choose Tools | Options to display the Options dialog.
4. Display either the "Options dialog: Sheet Format tab (on a table worksheet)" or the "Options dialog: Sheet Format tab (on a crosstab worksheet)" depending on the worksheet style you are using.
5. Do one of the following:
   - Select the **Title** check box to display the worksheet title at the top of the worksheet when the worksheet is displayed, printed, or exported.
   - Clear the **Title** check box to hide the worksheet title when the worksheet is displayed, printed, or exported.
6. Click OK to save changes that you have made and close the dialog.

   The worksheet is updated with the changes that you made.

How to rename workbooks and worksheets

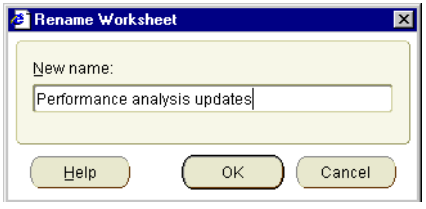
You rename a worksheet when you want to change the name displayed in the worksheet tab. For example, you might want to change the default worksheet name created by Discoverer to something more meaningful.

To rename a workbook:

1. Save the workbook with a new name (for more information, see "How to save workbooks").
2. (optional) Delete the original workbook (for more information, see "How to delete workbooks from the database").

To rename a worksheet:

1. If it is not already open, open the workbook that contains the worksheet you want to rename.
2. Choose Sheet | Rename Sheet to display the "Rename Worksheet dialog".



3. Enter the new name for the worksheet in the **New name** field.
4. Click OK to rename the worksheet.

   The worksheet's new name appears on the worksheet's tab at the bottom of the worksheet.

Notes

- You can also right click on a worksheet tab to display a drop down menu of worksheet management options (e.g. delete, rename).

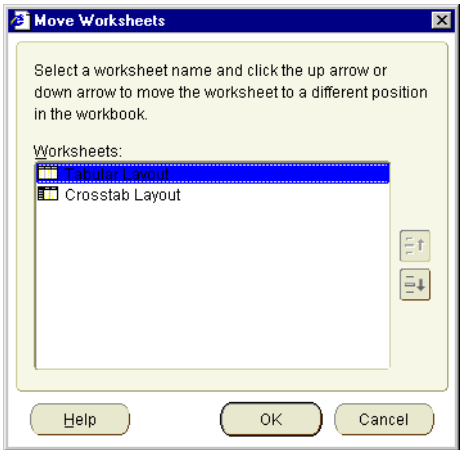
How to re-order worksheets within a workbook

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

How to re-order worksheets in a workbook:

1. Open the workbook that contains the worksheets you want to re-order.

2. Choose Sheet | Move Sheets to display the "Move Worksheets dialog".



3. To move a worksheet:
   a. Click on the name of the worksheet that 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. Repeat the previous step for each worksheet that you want to move.
5. When you have finished, click OK to save the details.

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

Notes

- You can also right click on a worksheet tab to display a drop down menu of worksheet management options (e.g. delete, rename).

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 in the workbook might be out-of-date. You refresh a worksheet when you want to make sure that you are accessing the most recent information. When you refresh a worksheet, Discoverer re-queries the database.

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

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

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, make sure that no other Discoverer users want to use the worksheet in the future.

To delete a worksheet

1. Open the workbook containing the worksheet that you want to delete.
2. Choose Sheet | Delete Sheet.

   Discoverer removes the worksheet from the worksheet.

Notes

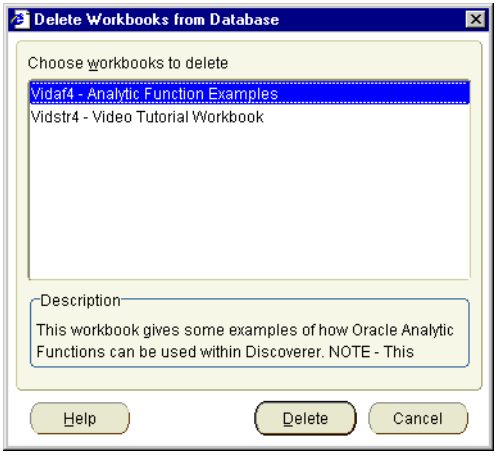
- You can also right click on a worksheet tab to display a drop down menu of worksheet management options (e.g. delete, rename).

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, make sure that no other Discoverer users want to use the workbook in the future.

To delete a workbook from the database:

1. Choose File | Manage Workbooks | Delete to display the "Delete Workbooks from Database dialog".



2. Select the workbook that you want to delete from the list of workbooks.
3. Click Delete to delete the workbook and close the dialog.
4. Click Yes at the confirmation dialog.

   The selected workbook is permanently removed from the database.

Notes

- If you want to delete a workbook that you currently have open, chose File | Manage Workbooks | Delete and select the current workbook from the workbook list. Then, close the currently opened workbook without saving it.

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 new workbook when you want to analyze data in a new way. For example, you might want to create a performance analysis workbook that you will 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 new workbook, the Discoverer manager must have given you permission to do so. The Discoverer manager gives you permission to create a new workbook by granting you a Discoverer privilege.

About icons in the Workbook Wizard

You use the Workbook Wizard to guide you when you create worksheets in a workbook. The table below shows the icons used in the Workbook Wizard and Worksheet Wizard:

Icon	Description
	Business area - a business area created by the Discoverer manager. To select another business area for the new worksheet, click the drop-down arrow and select from the list of business areas. A business area contains one or more folders.
	Folder - a related set of items that you can select for your worksheets. Click the plus (+) and minus (-) symbol next to the folder to open and close the folder.
	Axis Item - a column on a table or a level on a crosstab axis. Axis items remain constant and have relatively few unique values (e.g. 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).
	Item Value - an item in a list of values (LOV).
	Numeric Item - a numeric item. The values of numeric items can change as you analyze the data (e.g. summing profits will produce 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.
	Aggregation - a mathematical function for aggregating data. For text items (e.g. 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.

Icon	Description
	Condition - a filter for finding specific data. **Note**: Conditions defined by the Discoverer manager appear in folders. User-defined conditions do not appear in folders.
	Calculation - a mathematical expression to produce new data from other items. **Note**: Calculations defined by the Discoverer manager appear in folders. User-defined calculations do not appear in folders.
	Find - use this icon to display the "Find dialog (in Item Navigator)", which enables you to quickly locate items in business areas.

How to create new workbooks

While working with Discoverer, you might want to create a new workbook and one or more worksheets. You can then use the new workbook yourself and distribute it to other Discoverer users.

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

To create a new workbook:

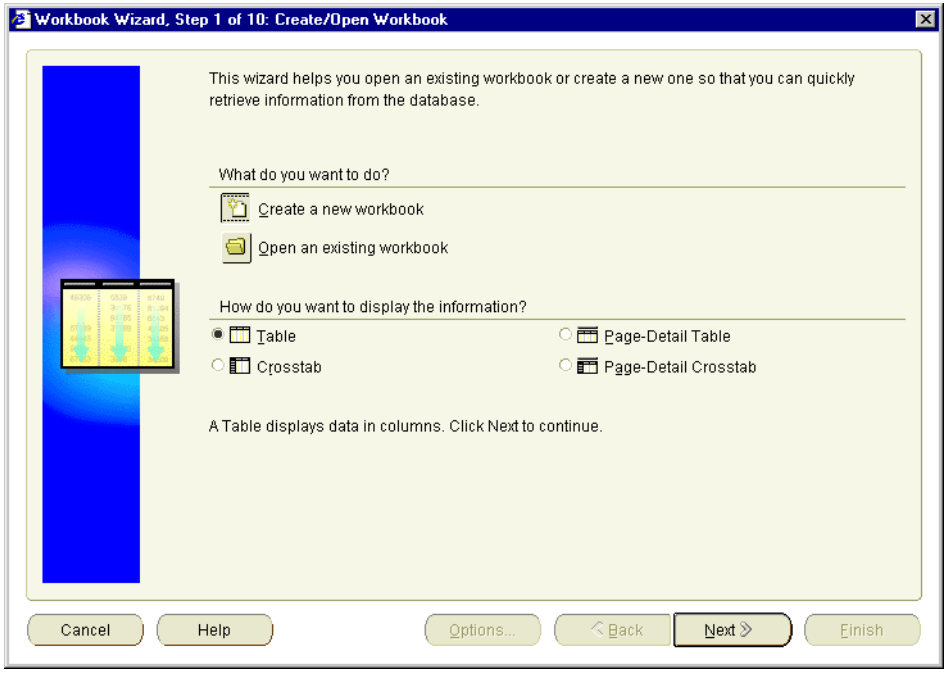
1. Start Discoverer (for more information, see "About starting Discoverer").

   When you start Discoverer, the "Workbook Wizard: Create / Open Workbook dialog" is displayed.

   Hint: If you have already started Discoverer, choose File | New to display the "Workbook Wizard: Create / Open Workbook dialog" and skip the next step.

2. Click Create a new workbook.

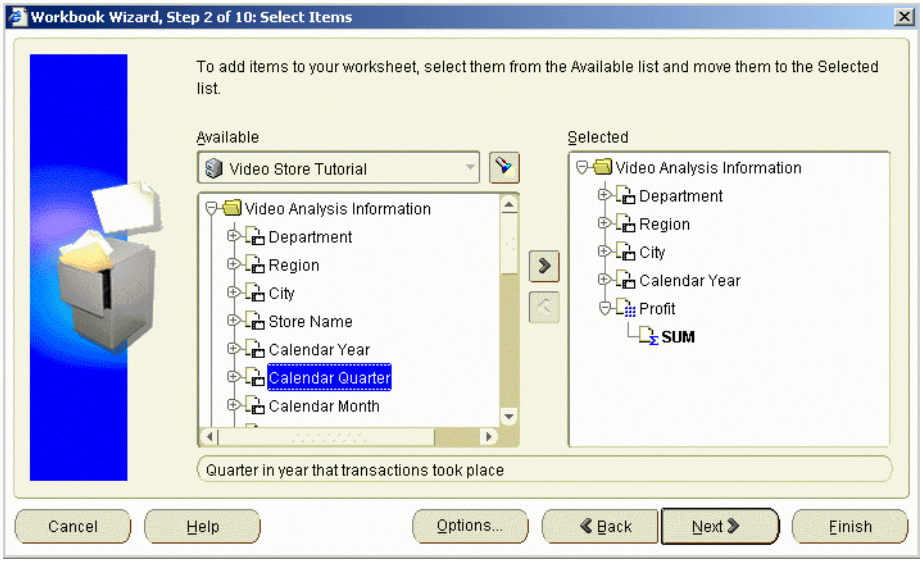
   The extra options **How do you want to display information?** are displayed, which enable you to specify a worksheet style for the first worksheet in the new workbook (e.g. table, crosstab).



3. Select a worksheet style from the **How do you want to display the information** radio button.

   For more information about worksheet layouts available, see "About the four types of Discoverer worksheet".

4. Click Next to display the Select Items page of the Workbook Wizard.



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

5. Select the business area that 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: Click the torch icon ( ) above the **Available** box to display the "Find dialog (in Item Navigator)", where you search the EUL for folders and items that you want to add to the worksheet.

   Hint: 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 that 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 more that one folder or item 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 (e.g. 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 Workbook 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: Format tab", where you can change the default format of worksheet items (e.g. text color, text style, number format).
9. (optional) Use the Next button to navigate through the remaining pages of the Workbook Wizard to add other features to the worksheet, including:
   - 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")

   Hint: You can change selections you made on previous pages by clicking the Back button.
10. Click Finish to create the new worksheet using default values for any options that you did not specify.

    Now you are ready to begin analyzing data using Discoverer!

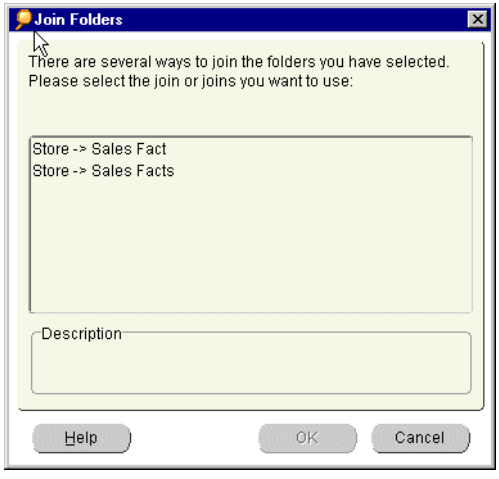
Notes

- After creating a worksheet, you can always change default options later by choosing Sheet | Edit Sheet to display the "Edit Worksheet dialog". Here, you can change the worksheet layout and display formats, and add analysis items (e.g. 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 more than one way. 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 Facts folder. The **Please select the join or joins that you want to use** list contains an entry for each of these options.

Figure 4–5 Join Folders dialog



How to add new 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 web traffic analysis workbook to which you want to add a new worksheet on click-stream analysis.

You can add a worksheet in two ways:

- by taking 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 new worksheet from the beginning using the Discoverer Worksheet Wizard to guide you through the process (as described below)

To create a new worksheet from the beginning:

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 Sheet | New Sheet to display the Worksheet Wizard.
3. Follow the instructions on the Worksheet Wizard.

The new worksheet is added to the workbook.

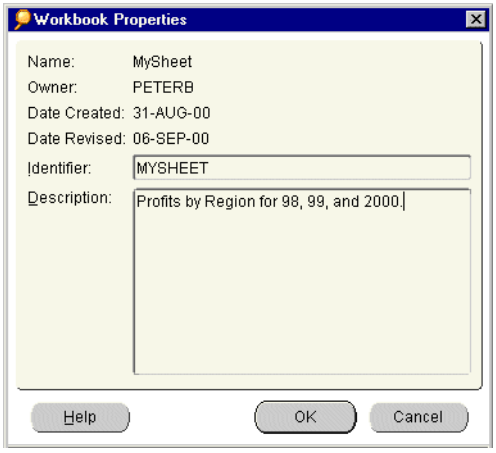
How to view a workbook's properties

A workbook's properties provide basic information about the workbook. For example, you might want to find out the name of the workbook owner. Or, you might want to find out the date that the workbook was revised so that you can compare it with another workbook.

To view a workbook's properties:

1. Open the workbook.
2. Choose File | Manage Workbooks | Properties to display the "Workbook Properties dialog".

   The "Workbook Properties dialog" displays information about the workbook. You can enter additional information about the workbook in the **Description** box.



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

Notes

- Identifiers are unique names that Discoverer uses to identify EUL and workbook elements (e.g. Business Areas, Folders, Items). Discoverer generates a default identifier automatically. Typically, you will never have to change the default identifier. However, you (or the Discoverer manager) might want to modify identifiers in the following circumstances:
  - if your organization has strict naming conventions with which identifiers must comply
  - if an element has been deleted and has to be recreated with the same identifier
- If you do change an identifier, you must update matching identifiers in other EULs to reflect the change.

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.

5

Formatting worksheet data

Formatting worksheet data

This section explains how to format worksheets, and contains the following topics:

About the four types of Discoverer worksheet

You can display worksheet data in four different styles:

- table - see "About table worksheets"
- table with page detail - see "About table worksheets with page detail"
- crosstab - see "About crosstab worksheets"
- crosstab with page detail - see "About crosstab worksheets with page detail"

About table worksheets

A table worksheet lists data in rows and columns, and is probably the most familiar layout for data. The figure below shows an example table worksheet.

Figure 5–1 A table worksheet

	Region	City	Department	Profit SUM
1	Central	St. Louis	Video Sale	$11,511
2		St. Louis	Video Rental	$7,627
3		Nashville	Video Sale	$3,571
4		Nashville	Video Rental	$3,884
5		Minneapolis	Video Sale	$6,030
6		Minneapolis	Video Rental	$3,562
7		Louisville	Video Sale	$17,103
8		Louisville	Video Rental	$12,664
9		Dallas	Video Sale	$4,774
10		Dallas	Video Rental	$3,547
11		Cincinnati	Video Sale	$18,742
12		Cincinnati	Video Rental	$12,587

The table worksheet shows a list of profit values for departments in cities within the Central region.

About table worksheets with page detail

A table worksheet with page detail is a table worksheet with an additional axis for displaying data for one item value at a time. For example, one year at a time.

The figure below shows an example table worksheet with page detail, where Year is displayed in the Page Items area. The data displayed relates to the year 1998.

Figure 5–2 A table worksheet with page detail

Page Items: Year: 1998

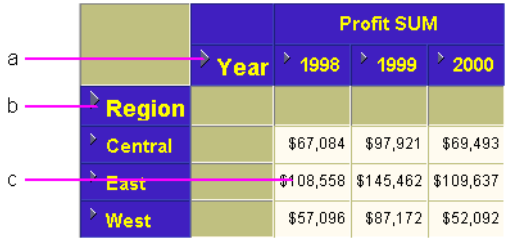
	Region	City	Department	Profit SUM
1	Central	St. Louis	Video Sale	$11,511
2		St. Louis	Video Rental	$7,627
3		Nashville	Video Sale	$3,571
4		Nashville	Video Rental	$3,884
5		Minneapolis	Video Sale	$6,030
6		Minneapolis	Video Rental	$3,562
7		Louisville	Video Sale	$17,103
8		Louisville	Video Rental	$12,664
9		Dallas	Video Sale	$4,774
10		Dallas	Video Rental	$3,547
11		Cincinnati	Video Sale	$18,742
12		Cincinnati	Video Rental	$12,587
13		Chicago	Video Sale	$5,354

Placing the Year item in the Page Items area enables worksheet users to display data for one year at a time.

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 (see figure below).

Figure 5–3 A crosstab worksheet



Key to figure:

a. top axis, containing the Year item

b. left axis, containing the Region item

c. data points, containing profit sum figures

The region and year 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 for a particular region in a particular year.

A note about crosstabs

One of the most powerful features of crosstabs is that you can use them to uncover subtleties in the data that are not readily apparent from a table of data. For example, by relating one group of data to another you might find that:

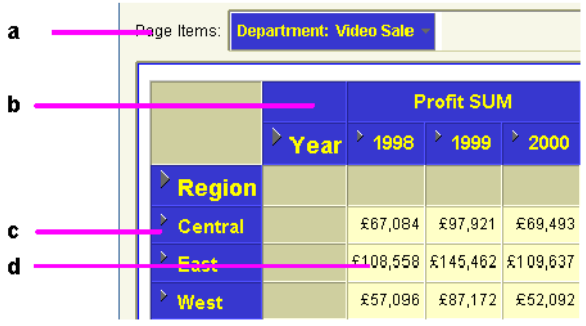
- the most efficient sales person (i.e. sales calls versus deals closed) for 'Widgets' has the highest volume of 'Gadgets' sales
- the return on investment on a store for the year 2001 might also have provided a good return in the year 2000

About crosstab worksheets with page detail

A crosstab worksheet with page detail is a crosstab worksheet with an additional axis for displaying data for one item value at a time. For example, one department at a time.

The figure below shows an example table worksheet with page detail, where Department is displayed in the Page Items area. The data displayed relates to the Video Sale department.

Figure 5–4 A crosstab worksheet with page detail



Key to figure:

a. Page axis, containing the Department item.

b. Top axis, containing the Year item

c. Left axis, containing the Region item.

d. Data points, containing profit figures.

About editing worksheets

Discoverer's powerful layout dialogs enable you to format worksheets so that they are arranged and formatted exactly how you want them. For example, you might want to:

- change the color of rows and columns
- change the background color or title of worksheets
- change the format of text and numbers
- change how data can be filtered by other Discoverer users using parameters
- display new data on the worksheet
- remove data from the worksheet
- rearrange items on the worksheet - for more information, see "Pivoting data"

Note: When you create a new report, a default format is applied (e.g. colors, fonts). To change the default format that is applied to worksheets, see "How to change the default worksheet format".

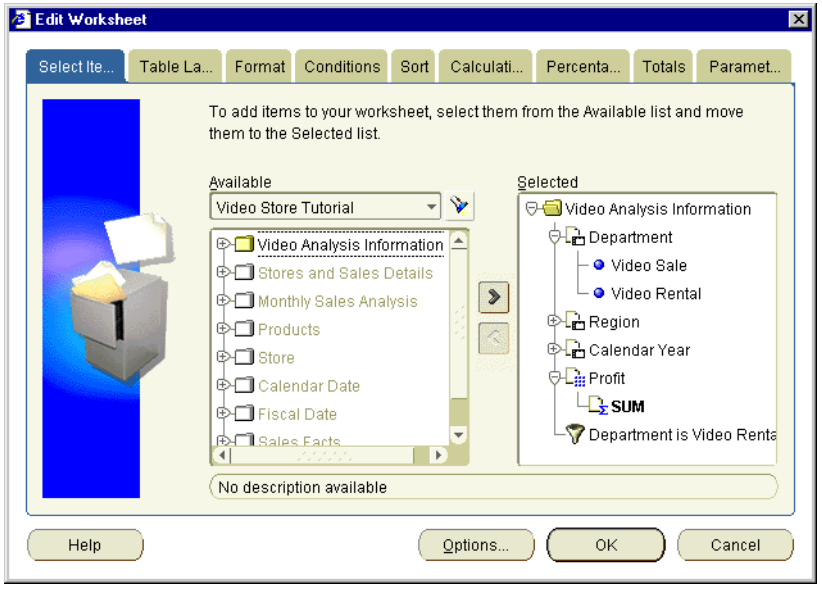
Hint: If you want to change a worksheet but keep a copy of the original worksheet, use the duplicate worksheet facility. Here, you make an exact copy of a worksheet that you can work on (for more information, see "How to duplicate a worksheet"). Alternatively, save the whole workbook under a different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

How to edit worksheets

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 to add calculations, percentages, or totals.

To edit a worksheet:

1. Open the worksheet that you want to edit.
2. Choose Sheet | Edit Sheet to display the "Edit Worksheet dialog".



The tabs on the Edit Worksheet dialog are used to edit the properties of the current worksheet (e.g. table layout, format, conditions).

3. Make changes to the worksheet as required:

   - If you want to add or remove items from the worksheet, display the Select Items tab.

     Hint: Click the torch icon ( ) above the **Available** box to display the "Find dialog (in Item Navigator)", where you search the EUL for items that you want to add to the worksheet.

   - If you want to change the layout of worksheet items, display the layout tab (for more information, see "Edit Worksheet dialog: Table Layout tab" or "Edit Worksheet dialog: Crosstab layout tab".

     Note: The layout tab is labelled Table Layout on table worksheets, and Crosstab Layout on crosstab worksheets.

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

   Discoverer updates the worksheet as you specified.

How to add items to worksheets

You add items to a worksheet when you want to analyze new areas of data. For example, you might want to add a Year item so that you can look at trends over time.

To add an item to a worksheet:

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

   Hint: Click the plus (+) sign next to folders and items to see items within them.
4. Move items that you want to add to worksheets from the **Available** list to the **Selected** list (for more information about selecting items, see Notes below).

   Hint: Click the torch icon () above the **Available** box to display the "Find dialog (in Item Navigator)", where you search the EUL for items that you want to add to the worksheet.
5. Click OK to save the changes you have made and close the dialog.

   Discoverer updates the worksheet as you specified.

Notes

- You can select more than one item by pressing the Ctrl key and clicking another item.
- 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
- From the "Edit Worksheet dialog: Select Items tab", you can also specify sheet format settings and query governor settings. Click Options to display the "Options dialog: Sheet Format tabs" and "Options dialog: Query Governor tab".

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 want to remove a year item to change the format of a printed report.

To remove items from worksheets:

1. Open the worksheet that you want to edit.
2. Choose Sheet | Edit Sheet to display the "Edit Worksheet dialog".
3. Display the "Edit Worksheet dialog: Select Items tab".
4. To remove items from worksheets, move items from the **Selected** list to the **Available** list.
5. Click OK to save changes and close the dialog.

Notes

- You can select more than one item by pressing the Ctrl key and clicking another item.
- You can also delete items from a worksheet using the "Edit Worksheet dialog: Table Layout tab" or the "Edit Worksheet dialog: Crosstab layout tab".

How to duplicate a worksheet

You duplicate a worksheet when you want to quickly create a copy of a worksheet based on the style of an existing worksheet. You can then edit the new worksheet as required.

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. Open the worksheet that 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 Sheet | Duplicate as a Table to duplicate the current worksheet using the Duplicate as Table dialog

- choose Sheet | Duplicate as a 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 layout 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 duplicated 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 using default worksheet settings and close the dialog.

   The new worksheet is now displayed ready for you to analyze. You might want to change the default name of the new worksheet (for more information, see "How to rename workbooks and worksheets").

   Hint: Use the tabs at the bottom of worksheets to navigate between worksheets.

How to change the format of worksheet data

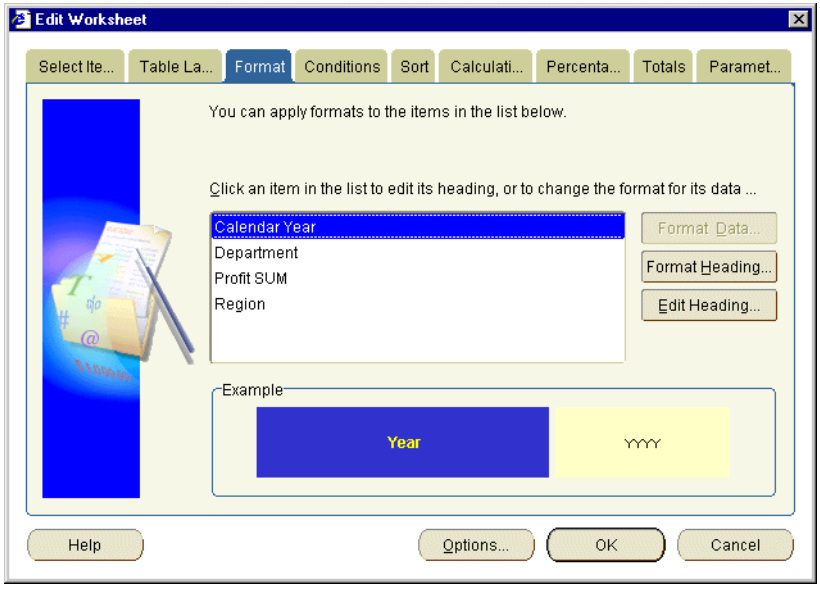
You change the format of worksheet data when you want to change how existing worksheet data is displayed. For example, you might want to:

- change a numeric value to a currency format
- modify the number of decimal places displayed
- change the background color of headings and totals.

Hint: You can also change the item heading (for more information, see "How to change item headings") and change the format of item headings (for more information, see "How to change the format of item headings").

To change the format of worksheet data:

1. Open the worksheet that you want to edit.
2. Choose Sheet | Format to display the "Edit Worksheet dialog: Format tab".



The "Edit Worksheet dialog: Format tab" displays a list of items currently displayed on the worksheet.

3. In the list on the left, select the items that you want to format.

   You can select more than item by pressing the Ctrl key and clicking another item.

   Hint: The **Example** box displays the heading format of the current item.

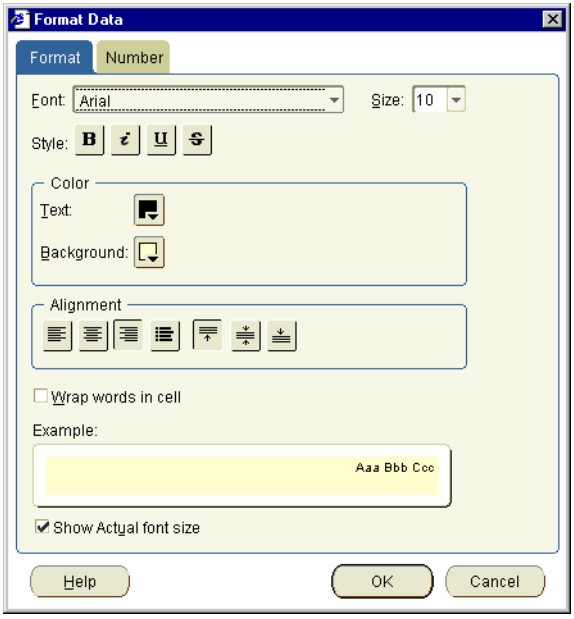
4. Click Format Data to display the "Format Data dialog: Format tab".

   For example, you might want to change the font size, color, and alignment of numbers.

5. Use the "Format Data dialog: Format tab" to specify:

   - the font, point size, and font style of data
   - the color of text
   - the horizontal and vertical alignment of text
   - whether to wrap words in each cell

   Hint: The **Example** field shows the effect of the changes that you make.



6. Depending on the type of data in the item you are formatting, other tabs appear on the "Format Data dialog", which you use as follows:

   - use the "Format Data dialog: Number tab" to format numbers (e.g. add or remove decimal places, show or hide a currency symbol for your country, create a custom number format).
   - use the "Format Data dialog: Text tab" to format text (e.g. to change the text style to UPPERCASE, lowercase, or Capitalized).
   - use the "Format Data dialog: Date tab" to format dates (e.g. to change the date format for a Year item from YY to YYYY).

   Hint: On each tab, the **Example** field shows the affect of the changes on your items.

7. When you have finished formatting the worksheet data, click OK to save changes and return to the worksheet.

   Discoverer updates the worksheet as you specified.

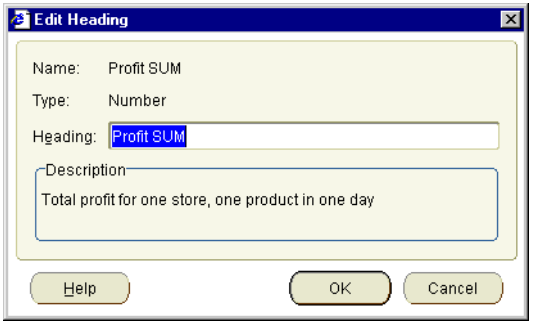
How to change item headings

You change item headings when you want to change the column or row headings that are displayed on worksheets. For example, you might want to change 'Year' to 'Financial Year' so that 'Financial Year' is displayed on reports.

To change an item heading:

1. Open the worksheet that you want to edit.
2. Choose Sheet | Format to display the "Edit Worksheet dialog: Format tab".
3. In the list on the left, select the item for which you want to change the heading.

   Hint: The **Example** box displays the heading format of the current item.
4. Click Edit Heading to display the "Edit Heading dialog".



5. Use the **Heading** field to enter a new heading name or edit the existing heading name.
6. Click OK to save changes and close the dialog.
7. Click OK to close the "Edit Worksheet dialog: Format tab" and return to the worksheet.

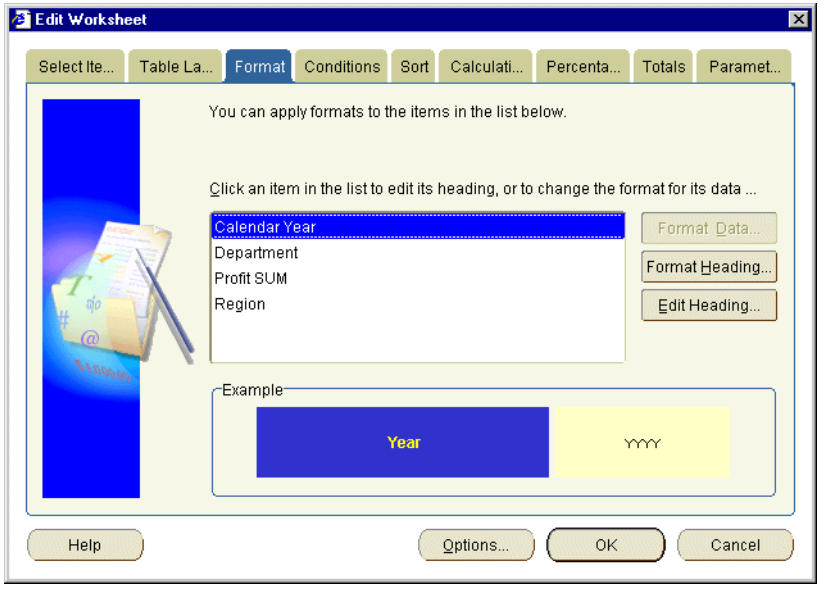
   Discoverer updates the worksheet as you specified.

How to change the format of item headings

You change the format of item headings when you want to display different row or column headings on a worksheet. For example, you might want to change a column heading to use a larger font or different color.

To change the format of an item heading:

1. Open the worksheet that you want to edit.
2. Choose Sheet | Format... to display the "Edit Worksheet dialog: Format tab".

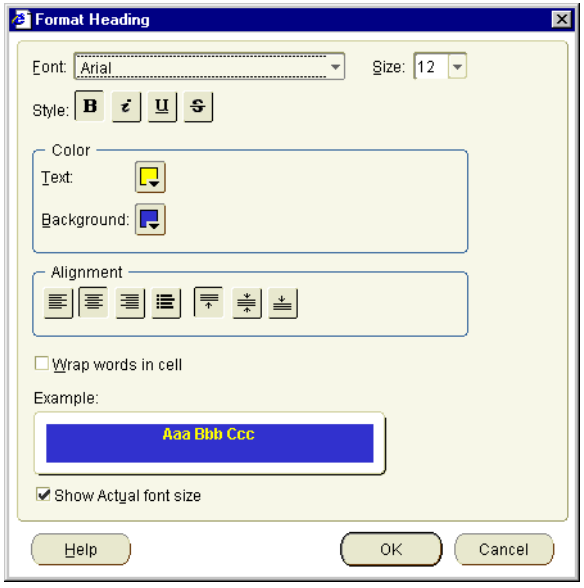


3. In the list on the left, select the items that you want to format.

   You can select more than item by pressing the Ctrl key and clicking another item.

   Hint: The **Example** box displays the heading format of the current item.

4. Click the Format Heading button to display the "Format heading dialog".



5. Use the "Format heading dialog" to specify:
   - the font, point size, and font style of heading text
   - the color of heading text
   - the horizontal and vertical alignment of heading text
   - whether to wrap heading text in each cell

   Hint: The **Example** field shows the effect of the changes that you make.
6. When you have finished formatting the worksheet headings, click OK to save changes and return to the "Edit Worksheet dialog: Format tab".
7. Click OK to close the "Edit Worksheet dialog: Format tab" and return to the worksheet.

   Discoverer updates the worksheet as you specified.

How to change the default worksheet format

You change the default worksheet format when you want to change how new worksheets are formatted. For example, you might want to display all new worksheet items in blue text with a yellow background.

Note: Changing the default worksheet format does not affect the format of existing worksheet items - only items that you add to the worksheet have the default format.

To change the default worksheet format:

1. Choose Tools | Options to display the Options dialog.
2. Display the "Options dialog: Default Formats tab".
3. Select an item in the **Default Formats** list.
4. Click Change to display the format dialog for that item.

   For example, the "Data Format dialog", the "Heading Format dialog", or the "Total Format dialog".
5. Use the Format dialogs to specify:
   - the font, point size, and font style of heading text
   - the color of text
   - the horizontal and vertical alignment of text
   - whether to wrap text in each cell

   Hint: The **Example** field shows the effect of the changes that you make.
6. When you have made your changes, click OK to save changes and return to the "Options dialog: Default Formats tab".
7. Click OK to close the "Options dialog: Default Formats tab" and return to the worksheet.

   The default formats that you specified are used for new worksheets that you create. For example, if you set the default data format style to a blue font with a yellow background, any new items that you add to worksheets will have this format.

6

Creating graphs in Discoverer

Creating graphs in Discoverer

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

What is a Discoverer graph?

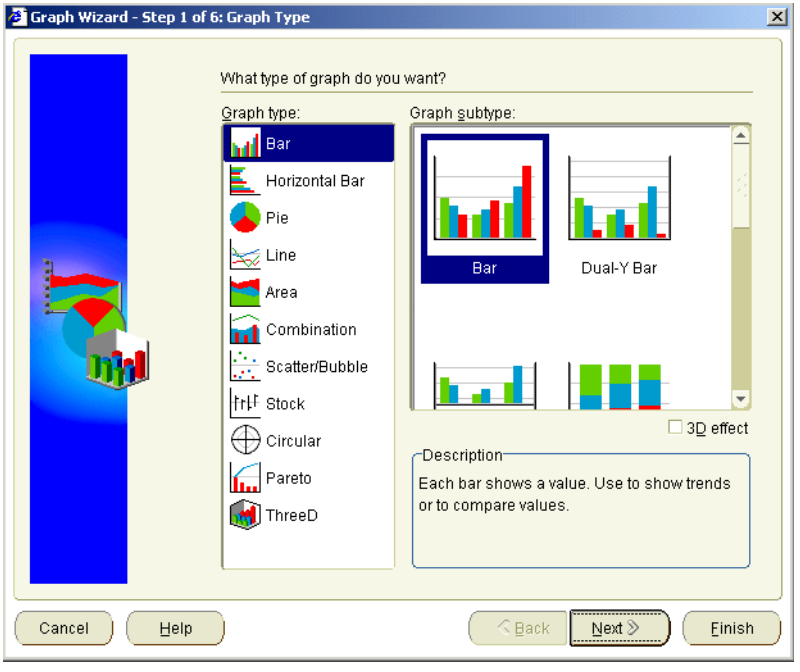
A Discoverer graph is a pictorial representation of worksheet data. For example, you might create a graph to enable you to easily analyze trends in your data.

About using graphs in Discoverer

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

Discoverer provides the Graph Wizard to help you create and edit graphs (see figure below).

Figure 6–1 Discoverer Graph Wizard



The Graph Wizard helps you:

- choose a graph type
- choose the data that you want to represent in a graph

- specify how the graph will look

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 also edit areas of a graph using the Graph toolbar and drop down menus (for more information, see "How to edit a graph").

More about worksheets and graphs

In Discoverer, you create a graph for the items currently displayed on a worksheet. Before you create a graph, make sure that you display the numeric worksheet values that you want to plot on the graph.

Each Discoverer worksheet can have one graph. If you already have a graph in a worksheet and want to create a completely new graph, delete the existing graph (see "How to delete a graph"), then create a new graph (see "How to create a graph").

Alternatively, you can also existing edit graphs (see "How to edit a graph").

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, you must use Discoverer Plus 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 can be viewed in Discoverer Plus, 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 graph and a Discoverer Desktop graph saved with the worksheet.

About saving Discoverer graphs

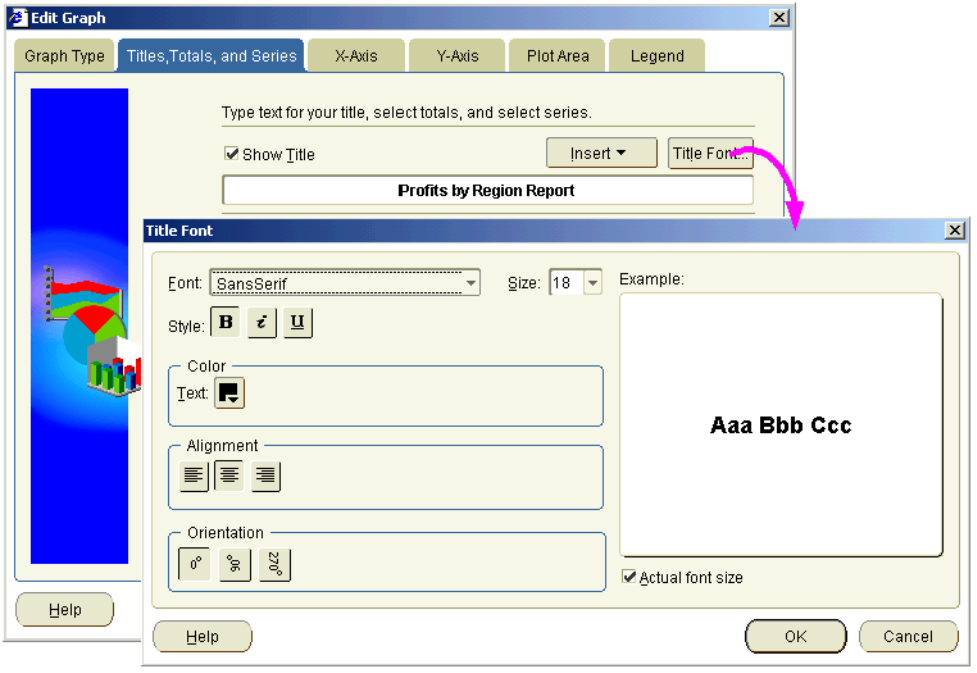
When you save a workbook, Discoverer saves graphs automatically for you as part of the worksheets in the workbook. In other words, you do not have to explicitly save graphs. Any changes you make to the graph are also saved automatically when you save the workbook.

About setting font options

Each page of the Graph Wizard enables you to change the default font options for various graph components. For example, the X-axis title, the X-axis label, and the legend font. You use the "Graph Wizard dialog: Font dialog tab" to set the font style.

The figure below shows how the Title Font button on the "Graph Wizard dialog: Titles, Totals, and Series tab" is used to display the "Graph Wizard dialog: Font dialog tab".

Figure 6–2 The Graph Wizard font dialog

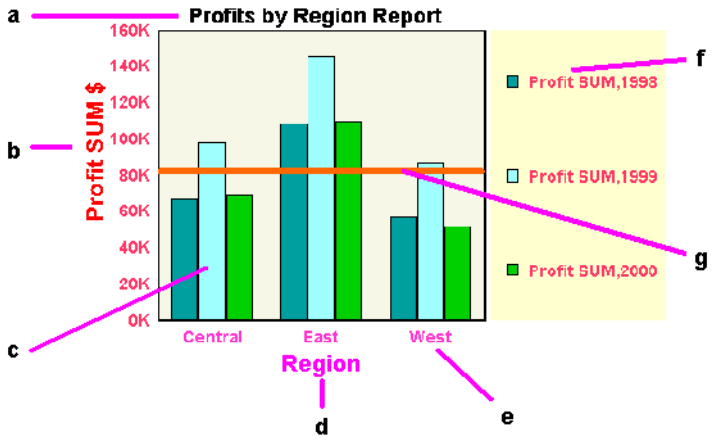


The "Graph Wizard dialog: Font dialog tab" enables you to change the default font styles (e.g. font, font size, font color).

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.

Figure 6–3 Components of a Discoverer graph



Key to figure:

- **a.** The graph title.
- **b.** The Y-axis label.
- **c.** The plot area, showing worksheet data represented on the graph.
- **d.** The X-axis label.
- **e.** Tick label.
- **f.** The graph legend.
- **g.** A reference line, used to emphasize particular data values on a graph.

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

Most graph sub-types have a three-dimensional effect that you can switch on and off as required (using the **3D-Effect** check box).

Note: 3D-Effect should not be confused with three-dimensional graphs, such as 3D-Cube and Surface, which are used to represent multi-dimensional data.

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 name and description
	Area graph - shows trends or changes in data using filled-in areas.

Graph icon	Graph name and description
	Bar graph - compares 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 "Notes about creating dual-Y charts").
	Circular graph - shows directional data and cyclical patterns in data.
	Combination graph - combines bars, lines, and areas.
	Horizontal Bar graph - compares 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 "Notes about creating dual-Y charts").
	Line graph - shows trends or changes in data at even intervals. Data is represented as a line that connects a series of data points.
	Pareto graph - shows trends across groups periodically and cumulatively. Each group is displayed as a column. A plotted line also shows the cumulative value across groups.
	Pie graph - shows data as sections of a circle, similar to slices of a 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 "Notes about creating pie graphs").

Graph icon	Graph name and description
	Scatter / Bubble graph Scatter graph - displays 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. Bubble graph - shows 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 "Notes about creating bubble graphs").
	Stock graph - shows 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 "Notes about creating high-low-close stock graphs").
	ThreeD graph - shows 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. There are four 3D graph sub-types: 3D Bar, 3D Cube, 3D Area, and 3D Surface. 3D graphs are useful for showing trends or to compare values along two dimensions. **Note**: This graph type is not the same as a two dimensional graph with the 3D Effect turned on. The 3D Effect simply adds depth to any graph type.

Notes about creating bubble graphs

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

When you create bubble graphs, follow these guidelines:

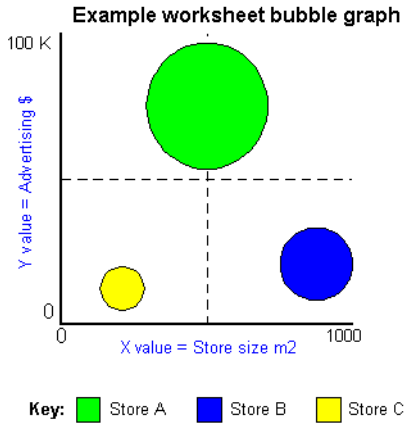
- You need at least three items per bubble:
  - the X item - the bubble's location on the X-axis
  - the Y item - the bubble's location on the Y-axis
  - the Z item - the size of the bubble (in positive numbers)

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

Figure 6–4 Example Discoverer worksheet and bubble graph

Example worksheet configuration

Store	Advertising $	Store size m2	Sales $
Store A	80,000	500	900,000
Store B	20,000	900	500,000
Store C	10,000	100	100,000



For example, you might have the following items on a bubble graph (see figure above):

- 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.

Notes about creating high-low-close stock graphs

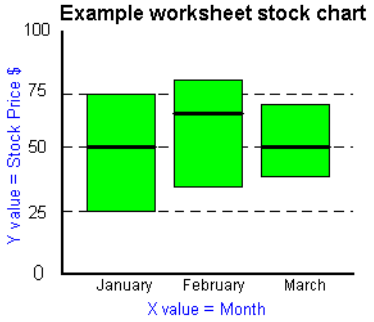
When you create high-low-close stock graphs (sometimes known as stock charts), follow these guidelines:

- You need at least three items in the following order:
  - high price
  - low price
  - closing price

Figure 6–5 Example worksheet and high-low-close stock graph

Example worksheet configuration

January			February			March		
High	Low	Close	High	Low	Close	High	Low	Close
75	25	50	80	35	65	70	40	50



For example, the figure above shows a worksheet configuration for charting a stock price over time (January, February and March). The worksheet data is arranged 'Series by row'.

- Stock values for high, low, and closing prices must appear on the same row or column series as groups of three.
- To display high, low, and closing prices for more than one period, the data must be in multiples of three. For example, three columns for period one, three columns for period two, and so on.
- If a high-low-close stock graph contains more than stock, and prices overlap, some stock values will obscure other stock values.

Notes about creating dual-Y charts

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

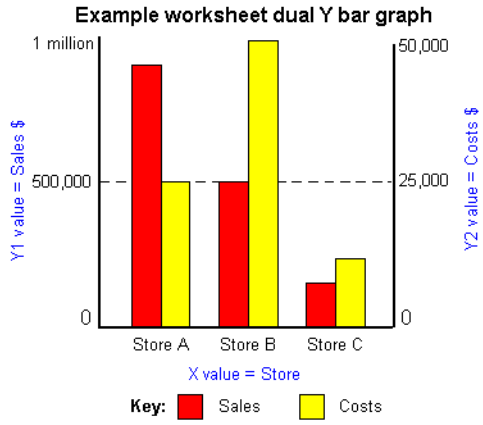
- You can use the dual-Y facility with the following types of graph:
  - bar
  - line
  - area

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

Figure 6–6 Example worksheet and dual Y graph

Example worksheet configuration

Store	Sales $	Costs $
Store A	900,000	25,000
Store B	500,000	50,000
Store C	100,000	10,000



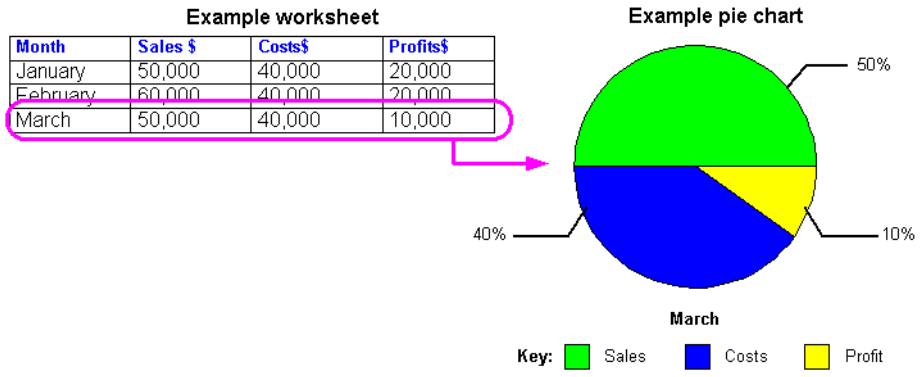
- Dual-Y graphs require at least two items.
- By default, the series are displayed in the following way:
  - series one is displayed on the Y1 axis
  - series two is displayed on the Y2 axis
  - all subsequent series are displayed on the Y1 axis

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.

Notes about creating pie graphs

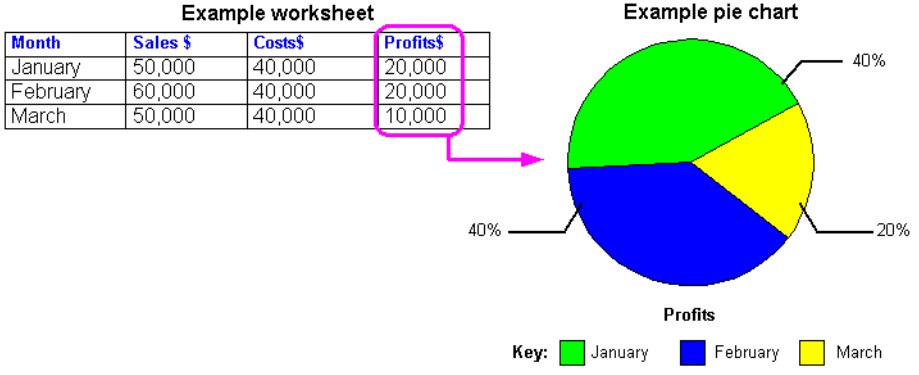
When you create a Pie graph (sometimes called a Pie chart), you choose which row or column you want to represent. The figure below shows how a row of data is represented on a pie graph.

Figure 6–7 Using a worksheet row to create a pie graph



The figure below shows how a column of data is represented on a pie graph.

Figure 6–8 Using a worksheet column to create a pie graph



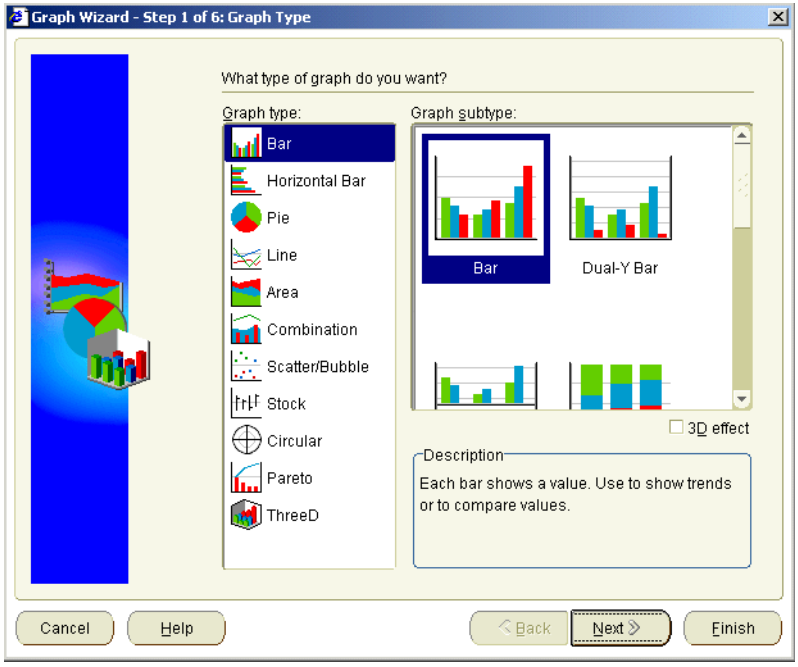
How to create a graph

You create a new graph for a worksheet when you want to display data and trends visually. Discoverer provides the Graph Wizard to help you create a graph of your worksheet data. If at any time you want to use default settings for the remaining steps in the Graph Wizard, simply click the Finish button.

Hint: Before you start, make sure that the worksheet displays the data that you want to plot on the graph.

To create a graph:

1. Choose Graph | New Graph to display the "Graph Wizard dialog: Graph Type tab", and choose a graph style from the list of graph types and graph sub-types.



Note: If the Graph | New Graph option is not available, the worksheet already has a graph (which might be hidden). If you want to create a new graph, do one of the following:

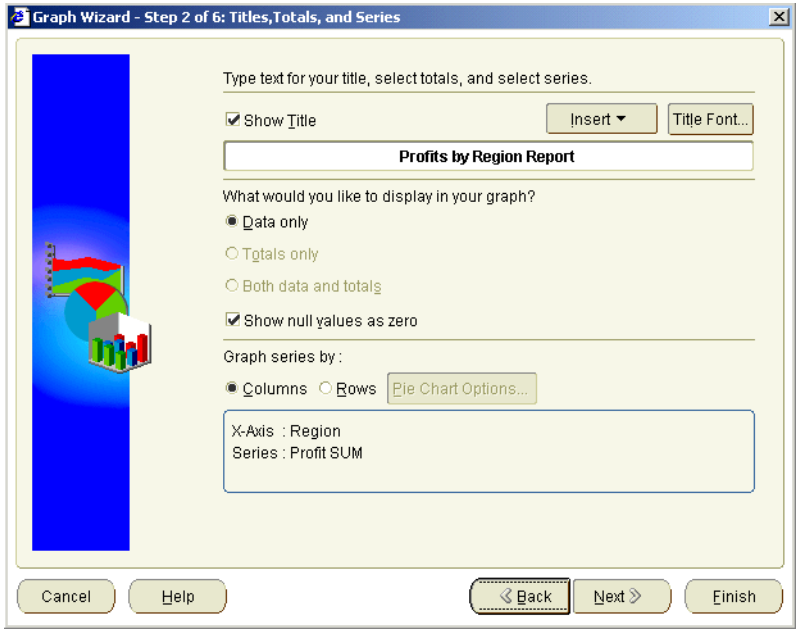
- click Graph | Delete Graph to delete the existing graph, then click Graph | New Graph to create a new graph
- click Graph | Edit Graph to display the Graph Wizard, then change the existing graph to the style you want

For more information about choosing a graph type, see "About graph types available in Discoverer".

2. Click Next to display the "Graph Wizard 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 (i.e. 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, you 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.

3. (optional) To select which column or row to plot on the graph:

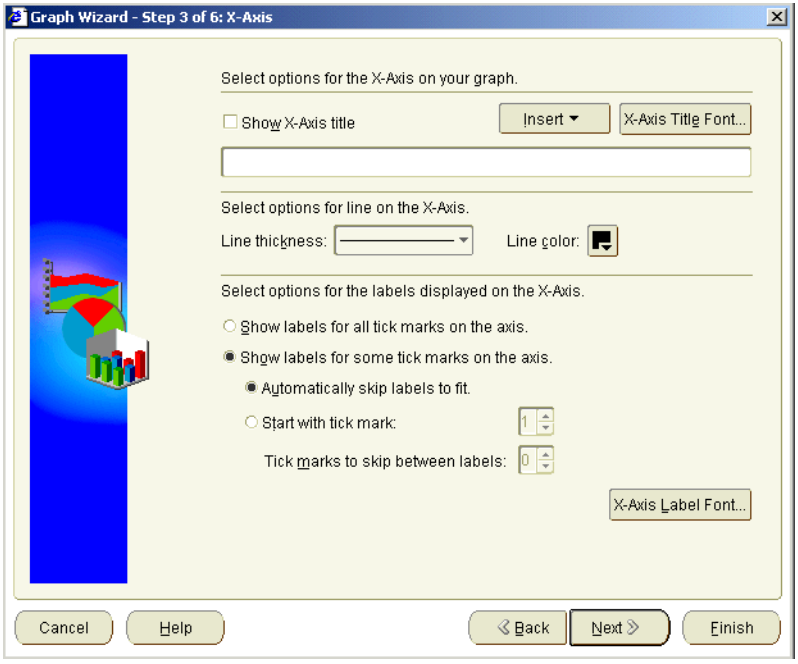
   a. Click Pie Chart Options to display the "Graph Wizard dialog: Pie Chart Options tab (column)" or "Graph Wizard dialog: Pie Chart Options tab (row)".

   b. Select the row or column that you want to graph from the list of items.

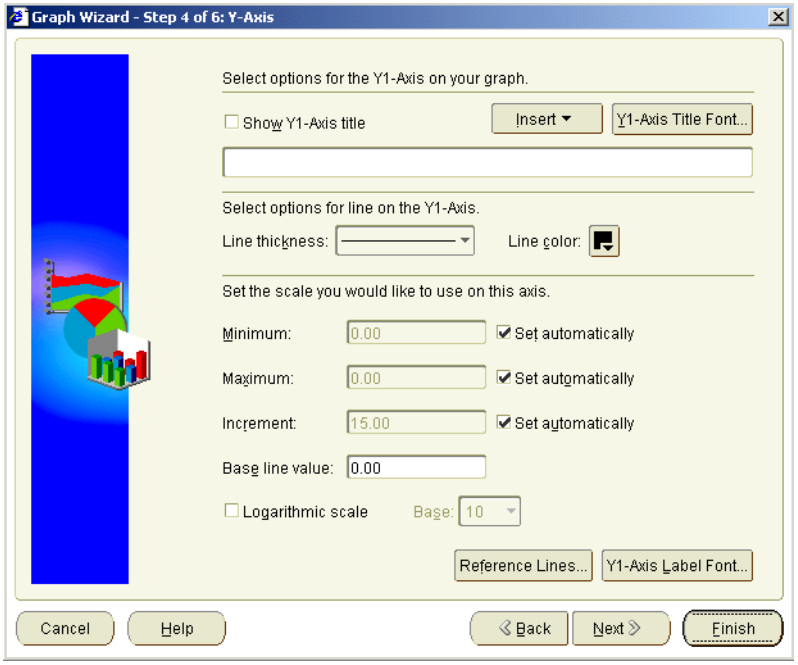
   c. Click OK.

   Note: When you click Next, you go straight to the "Graph Wizard dialog: Plot Area tab". This is because you do not define X or Y axes for pie graphs.

4. Click Next to display the "Graph Wizard dialog: X-Axis tab", where you specify how the X axis is displayed.



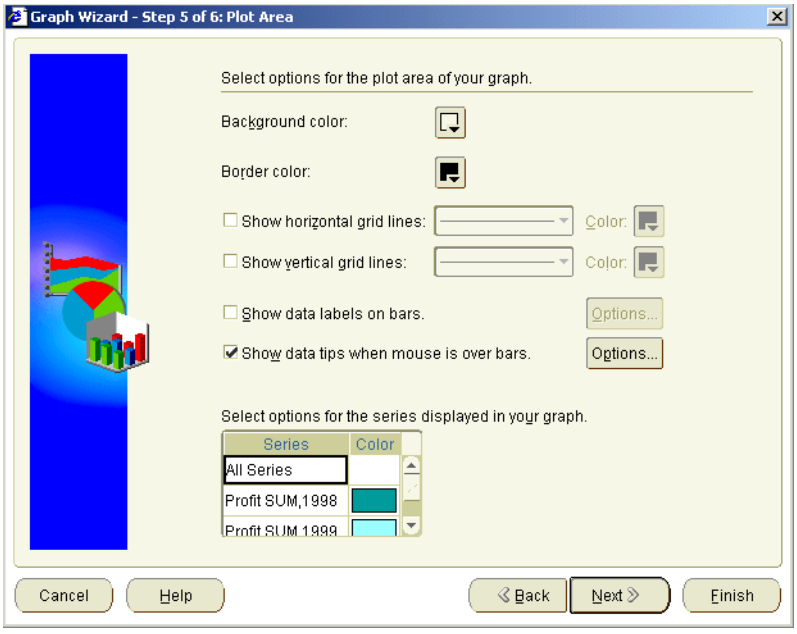
5. Click Next to display the "Graph Wizard dialog: Y-Axis tab", where you specify how the Y axis is displayed.



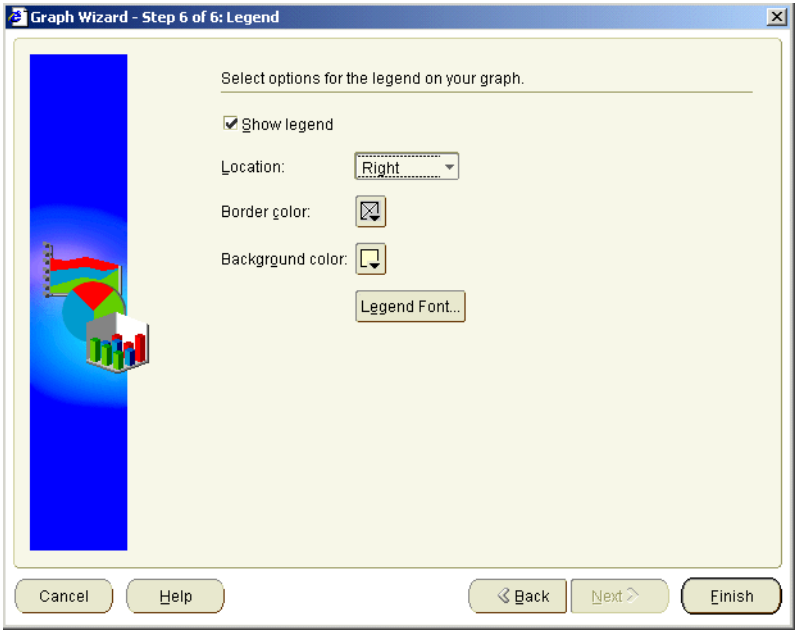
6. (optional) If you are creating a dual-Y graph, click next to display the "Graph Wizard dialog: Y2-Axis tab", where you specify how the Y axis is displayed.

   For more information about creating dual-Y graphs, see "Notes about creating dual-Y charts".

7. Click next to display the "Graph Wizard dialog: Plot Area tab", where you specify the color and style of plotted data.

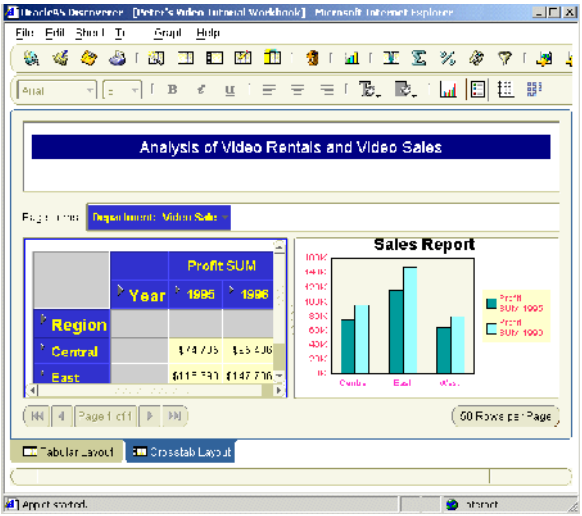


8. Click Next to display the "Graph Wizard dialog: Legend tab", where you specify the graph legend that provides information about how items are represented on the graph.



9. Click the Finish button to save the details and display the graph.

Discoverer displays the graph on the worksheet.



Notes

- To automatically arrange graph components, right-click on the graph to display graph menu options, then choose Auto Layout.
- By default, graphs are displayed at the right-hand side of worksheet data. To change where a graph is displayed, choose Graph | Display Graph and choose a position from the list of options.
- For information about positioning graphs, see "How to change the position of a graph on screen".

How to edit a graph

You edit a graph to change how it is displayed on a worksheet. For example, you might want to change the graph type, change the axis labels, or change the color of plotted items.

Note: If you want to change which items are displayed on a graph, you need to change which items are displayed on the worksheet. To do this, click Sheet | Edit Sheet to display the "Edit Worksheet dialog", then display the "Edit Worksheet dialog: Select Items tab".

To edit a graph:

1. Display the worksheet that contains the graph.

2. Edit the graph using any of the following methods:
   - Choose Graph | Edit Graph to display the "Graph Wizard dialog: Graph Type tab". You can click the tabs along the top of the dialog to do directly to the area that you want to edit.
   - Select the area of the graph that you want to edit, and use options on the graph menu bar to manipulate the graph area (for more information, see Section , "About the Discoverer menu bar and toolbars").
   - Select the area of the graph that you want to edit, right-click to display graph menu options for that area, and use the graph menu options to manipulate the graph area.

     Hint: To automatically arrange the graph components, right-click to display graph menu options, then choose Auto Layout.
3. Click OK to save changes and close the Graph Wizard dialog.

Discoverer updates the graph as specified.

Notes

- To see changes take effect immediately, click Apply at any time. The graph is updated within the Discoverer worksheet area.

How to change the position of a graph on screen

You change a graph's position on screen 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 Graph | Display Graph and choose one of the following menu options:
   - Separate Window - display the graph in a window that floats above the worksheet window. You can move the graph window to any location on your screen by dragging it with the mouse.

     Note: If you close the separate window, choose Graph | Display Graph and choose a display option to re-display the graph.
   - Right of Data - display the graph on the right of the worksheet.
   - Left of Data - display the graph on the left of the worksheet.
   - Above Data - display the graph above the worksheet.

- Below Data - display the graph below the worksheet.
- Hide / Unhide Graph - display the graph or hide the graph. The Hide option does not delete the graph.

Discoverer displays the graph in the position that you specified.

Notes

- When you choose Graph | Display Graph and choose a position from the list of options, you change how the graph is positioned on screen. This does not affect how a worksheet and graph print out. For example, Discoverer always prints graphs on a separate page, after the worksheet data.
- If you use Discoverer Viewer or OracleAS Portal to publish worksheets, Discoverer Viewer and OracleAS Portal display worksheet graphs above or below worksheet data.
- For information about how to delete a graph permanently from a worksheet, see "How to delete a graph".
- By default, the graph is sized to fit inside the graph window. To disable the autolayout option, choose Graph | Fit to window, and clear the check box.
- To automatically arrange the graph components, right-click to display graph menu options, then choose 'Auto Layout'.

How to delete a graph

You delete a graph when you no longer want to use it, and will not require the graph later. For example, you might want to delete a temporary graph that you created to produce a printed report.

To delete a graph:

1. Choose Graph | Delete Graph.

   A warning message appears.

2. Click Yes to delete the graph.

   The graph is removed from the worksheet.

Notes

- If you want to remove a graph without deleting it, choose the Graph | Display Graph | Hide Graph option. You can then display the graph later if required.

Part II

Analyzing Data

This part contains the following chapters:

7

Pivoting data

Pivoting data

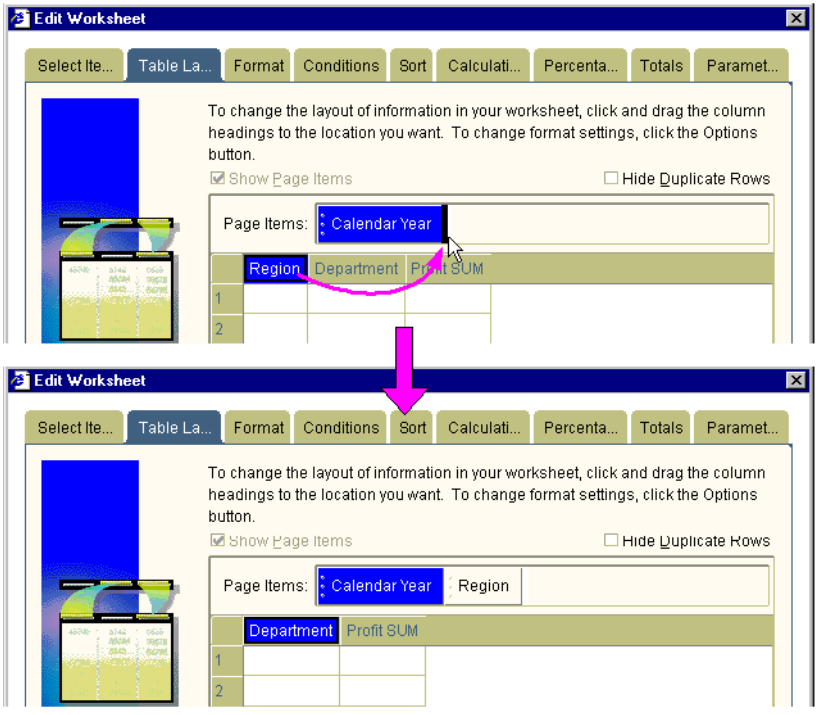
This chapter explains how to use Discoverer's pivoting capabilities to arrange data on worksheets, and contains the following topics:

- "About pivoting worksheet data"
- "About pivoting data on a table worksheet"
- "About pivoting data on a crosstab worksheet"
- "How to pivot data on a table worksheet"
- "How to pivot data on a crosstab worksheet"
- "About unexpected results with pivoting"

About pivoting worksheet data

Pivoting worksheet data is how you rearrange data for more effective analysis. For example, when you move items from one axis to another to see new data relationships, you are pivoting the data. In the figure below, the Region item is moved from the body of a worksheet to the Page Items area. Moving the Region item to the Page Items area enables you to analyze one region at a time.

Figure 7–1 Moving an item from a table worksheet to the Page Items area



Pivoting is a powerful tool enabling you to explore data relationships that might initially be hidden.

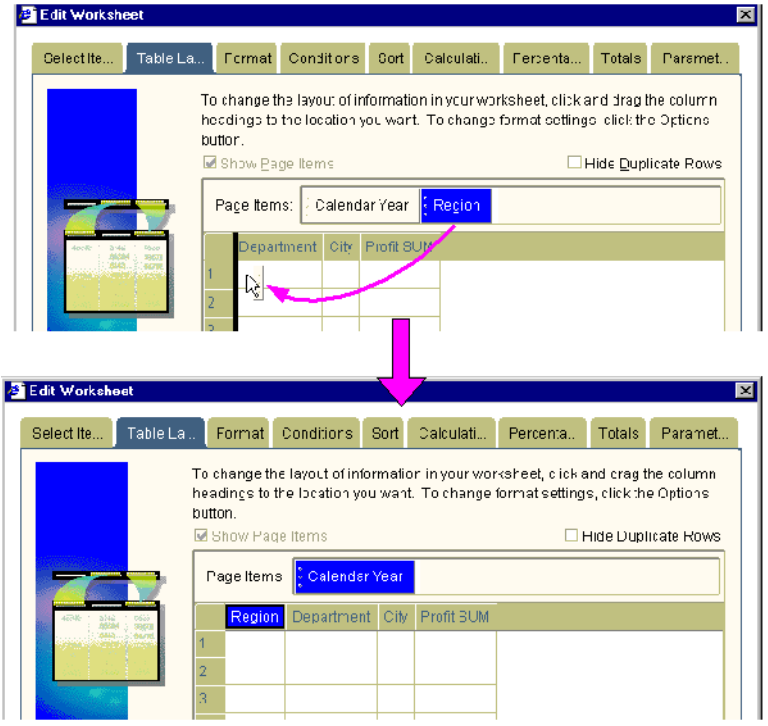
About pivoting data on a table worksheet

Discoverer enables you to pivot items on a table worksheet by:

- moving an item from the body of the worksheet to the Page Items area
- moving an item from the Page Items area to the body of the worksheet
- rearranging items on the body of the worksheet
- rearranging items on the Page Items area

In the figure below, the Region item has been moved from the Page Items area to the body of the worksheet.

Figure 7–2 Moving an item from the Page Items area to the body of the worksheet



About pivoting data on a crosstab worksheet

Discoverer enables you to pivot items on a crosstab worksheet in a similar way to pivoting on a table worksheet. In addition, you can pivot items to and from the left axis.

Because the data relationships on a crosstab depend on the intersection of the rows and columns, pivoting data from one axis to another creates a new set of data relationships.

In addition, pivoting worksheet data can add levels of data to an axis. For example, if the data on the left axis is organized into three levels (e.g. Region, City, and Store Name), pivoting the Year item to the side axis adds a fourth level of data to that axis.

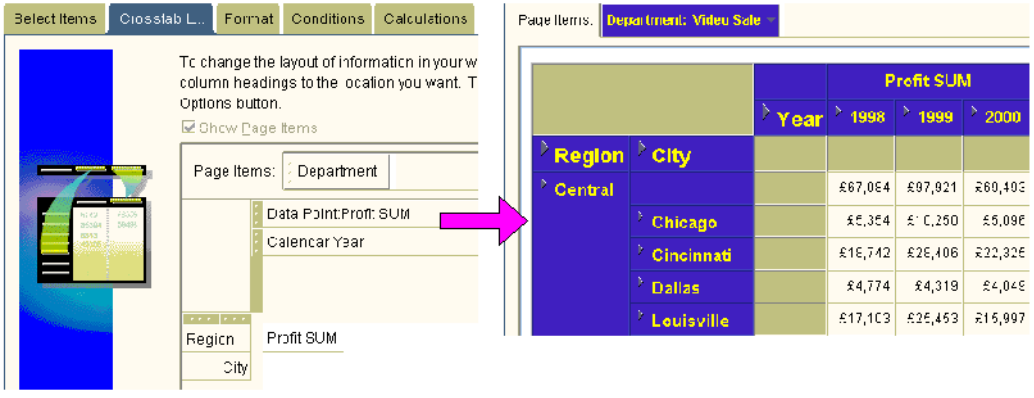
Discoverer enables you to pivot items on a crosstab worksheet by:

- moving an item from the body of the worksheet to the Page Items area
- moving an item from the Page Items area to the body of the worksheet
- rearranging items on the body of the worksheet
- rearranging items on the Page Items area
- rearranging items on the left and top axes
- moving items from the left axis to the top axis
- moving items from the top axis to the left axis

The figure below shows how you might use the Crosstab layout dialog to arrange worksheet data. To begin with, you place:

- the Department item in the Page Items area
- the Profit SUM and Year items on the top axis
- the Region and City items on the left axis

Figure 7–3 Laying out data on a crosstab worksheet



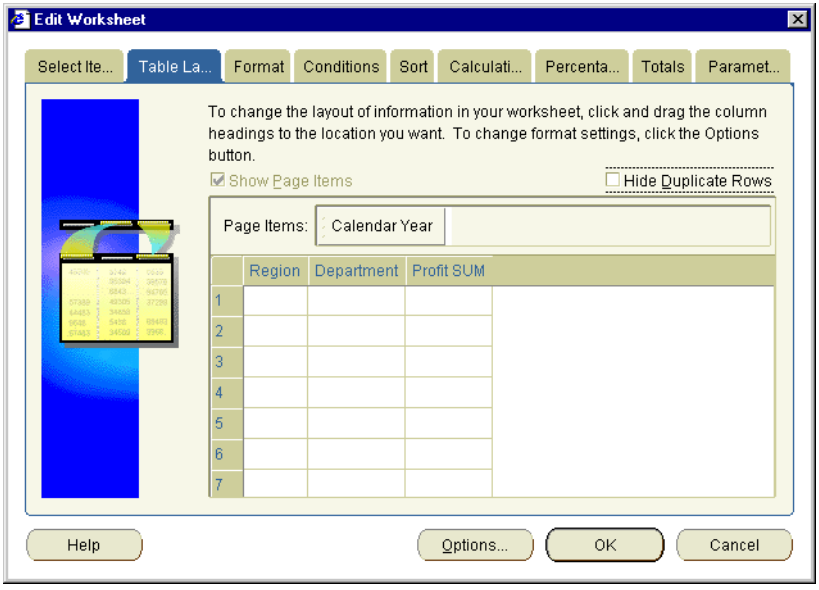
When you run the worksheet, the results are arranged as you specified (see the worksheet in the figure above).

How to pivot data on a table worksheet

You pivot data on a table worksheet to move items to and from the Page Items area, or to rearrange items. For example, you might want to move a Department item to the Page Items area so that you can analyze individual departments.

To pivot data on a table worksheet:

1. Open the table worksheet that you want to analyze.
2. Choose Sheet | Table Layout to display the "Edit Worksheet dialog: Table Layout tab".



The "Edit Worksheet dialog: Table Layout tab" shows the items on the worksheet and their current positions

3. Select the item that you want to pivot.

   You can select an item in the body of the worksheet or the Page Items area.

4. Drag the item to its new location and release the mouse button.

   Hint: When you drag and drop items, a black line shows the item's new position on the worksheet.

5. Click OK to save the details and close the "Edit Worksheet dialog: Table Layout tab".

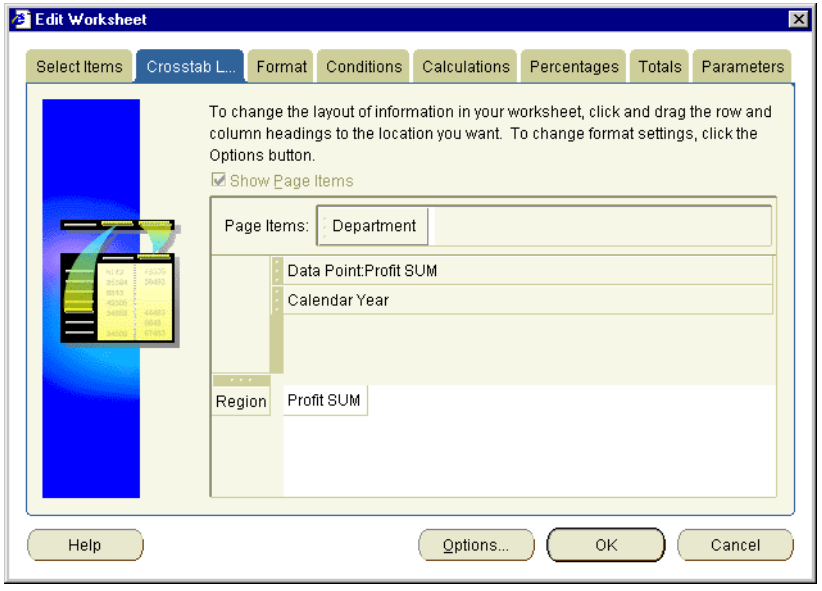
   Discoverer refreshes the worksheet according to the layout options you selected.

How to pivot data on a crosstab worksheet

You typically pivot data on a crosstab worksheet to move items between the top and left axis. You can also move items to and from the Page Items area, and re-arrange items on each axis. For example, you might move an item from the left axis to the top axis to make data easier to analyze.

To pivot data on a crosstab worksheet:

1. Open the crosstab worksheet that you want to analyze.
2. Choose Sheet | Crosstab Layout to display the "Edit Worksheet dialog: Crosstab layout tab".



The "Edit Worksheet dialog: Crosstab layout tab" shows the items on the worksheet and their current positions.

3. Select the item that you want to pivot.

   You can select an item in the body of the worksheet, in the left axis, in the top axis, or in the Page Items area.

4. Drag the item to its new location and release the mouse button.

Hint: When you drag and drop items, a black line shows the item's new position on the worksheet.

5. Click OK to save the details and close the "Edit Worksheet dialog: Crosstab layout tab".

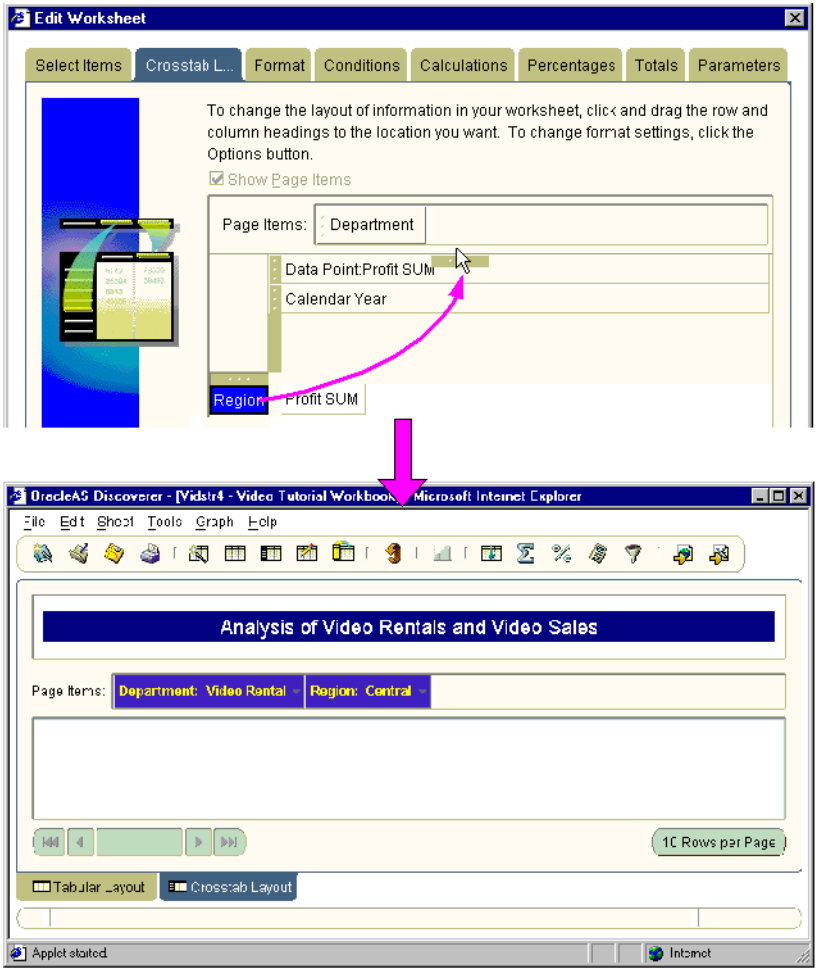
   Discoverer refreshes the worksheet according to the layout options you selected.

About unexpected results with pivoting

Discoverer makes it easy to pivot data on worksheets. However, it is also easy to produce unexpected results.

For example, if you move everything from your left axis on a crosstab worksheet, you can produce a blank worksheet.

Figure 7–4 Pivoting to produce unexpected results



In the figure about, when the Region item is moved to the Page Items area, the resulting worksheet is empty. This is because you must have items on both the left axis and top axis to analyze data on a crosstab worksheet.

8

Using drilling

Using drilling

This chapter explains how to use Discoverer's drilling capabilities to answer typical business questions, and contains the following topics:

About drilling in Discoverer worksheets

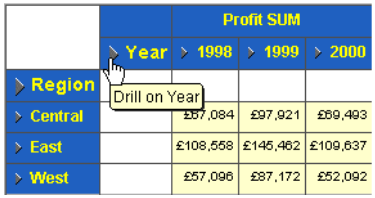
Discoverer's drilling capability enables you to navigate worksheet data quickly and easily. Drilling works as follows:

- You drill down to display data in more detail. For example, you might drill down into a year to look at data for individual months in that year.
- You drill up to display data in less detail. For example, you might drill up from a month item to see a summary for the whole year.

Note: Drilling up is also known as collapsing data, because detail is removed from a worksheet.

- You drill out to display data in another application. For example, you might drill out of a HTML document embedded in a worksheet to view the document in an Internet browser.

Figure 8–1 Discoverer worksheet with drill capability



When to drill

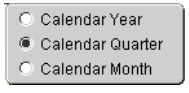
You can drill whenever you see a drill icon on a worksheet. Drill icons are right arrows that appear beside items, or icons for spreadsheets, HTML files, or text files.

In the example below, a year item has the value '2000'. The right arrow next to the value '2000' indicates that you can drill down into that year, typically to see data for months in that year.

Figure 8–2 Discoverer item with a drill icon

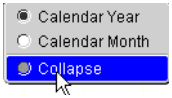
When you click a drill icon, Discoverer displays a list of drill options and indicates the current drill level. In the example below, the current drill level is Calendar Quarter.

Figure 8–3 Discoverer drill options



The display options for the detail drill items contain a Collapse option. This option removes the drill detail from the worksheet. In the example below, choosing Collapse removes drill detail.

Figure 8–4 Discoverer drill options with a Collapse option



Note: Alternatively, to collapse drill detail, click the drill icon on the detail and drill up to a higher level.

You can drill out when you see icons for spreadsheets, HTML files, or text files. In the example below,

Figure 8–5 Drilling out from a Discoverer worksheet to a text file

About drilling into numeric data

When you drill into numeric data, the following rules apply:

- When you drill down, Discoverer breaks down the numeric values at the drill level selected. For example, if you drill into an annual sales figure, you might see the annual sales figure broken down into monthly sales figures.
- When you drill up, Discoverer consolidates numeric values at the drill level selected. For example, if you drill up from monthly sales figures, you might see the monthly sales figures consolidated into an annual sales figure.

Note: When you drill into worksheet that contains analytic functions, you might have to adjust the analytic function formula to work correctly with the new worksheet layout (for more information, see "About analytic functions and drilling into and out of data").

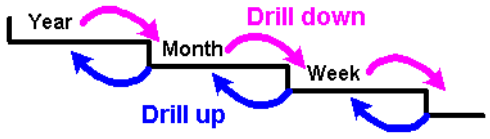
About drill options

When using drilling, you use drill options (also known as a drill path) defined by the Discoverer manager. Drill options define what level of detail you can drill to when drilling up or down in worksheet data.

For example, to enable worksheet users to drill into time-based data, the Discoverer manager might define time-based drill options. In the example below, the drill options enable you to navigate from:

- year to month
- month to week
- week to day

Figure 8–6 Typical Discoverer drill options



How to drill down

You drill down into worksheet data to see more detail. For example, you might:

- drill down into an annual sales figure to see data for individual months in that year.
- drill down into a monthly sales figure into sales figures for each week.

To drill down into worksheet data:

1. Click the drill icon next to the item for which you want to see more detail.

   A drop down menu is displayed showing drill options for that item and indicates the current drill level.

   Note: If there are too many items to display in a drop down list, you choose the drill item from the "Select item to drill dialog".

2. From the drop down menu, select the level of detail that you want below the current drill level.

   Discoverer displays more detailed data on the worksheet.

How to drill up

You drill up to see worksheet data in less detail. For example, you might:

- drill up from individual months to see data for the year.
- drill up to consolidate a weekly sales figures into a monthly sales figure.

To drill up to see worksheet data in less detail:

1. Click the drill icon next to the item for which you want to see less detail.

   A drop down menu is displayed showing drill options for that item and indicates the current drill level.

   Note: If there are too many items to display in a drop down list, you choose the drill item from the "Select item to drill dialog".

2. From the drop down menu, select the level of detail that you want above the current drill level.

   Discoverer removes detail data from the worksheet.

   Note: Alternatively, to drill up, click the icon next to detail data and choose Collapse.

How to drill out

You drill out to see worksheet data displayed in another application. For example, you might:

- click on an Excel spreadsheet item to display the spreadsheet in Microsoft Excel
- click on a HTML item to display the HTML page in an Internet browser

To drill out:

1. Click the drill out icon on the worksheet.

   For example, the icon might be a spreadsheet icon, a HTML file icon, or a text file icon (for more information, see "When to drill").

2. When prompted, do one of the following:

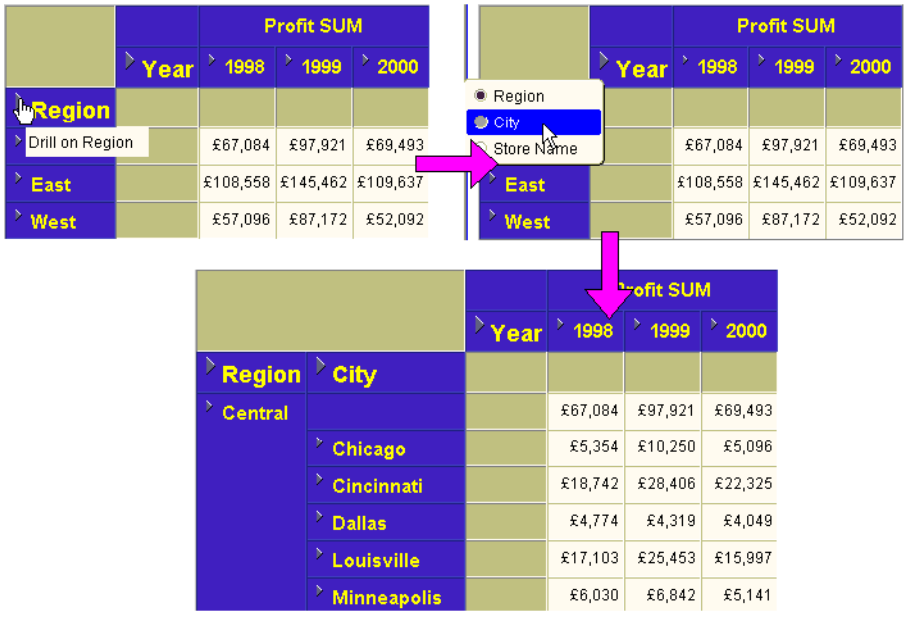
   - open the file from its current location
   - save the file to a local area - for example, a network drive

   If you choose to open the file, Discoverer starts up the associated application and displays the file.

Examples of drilling

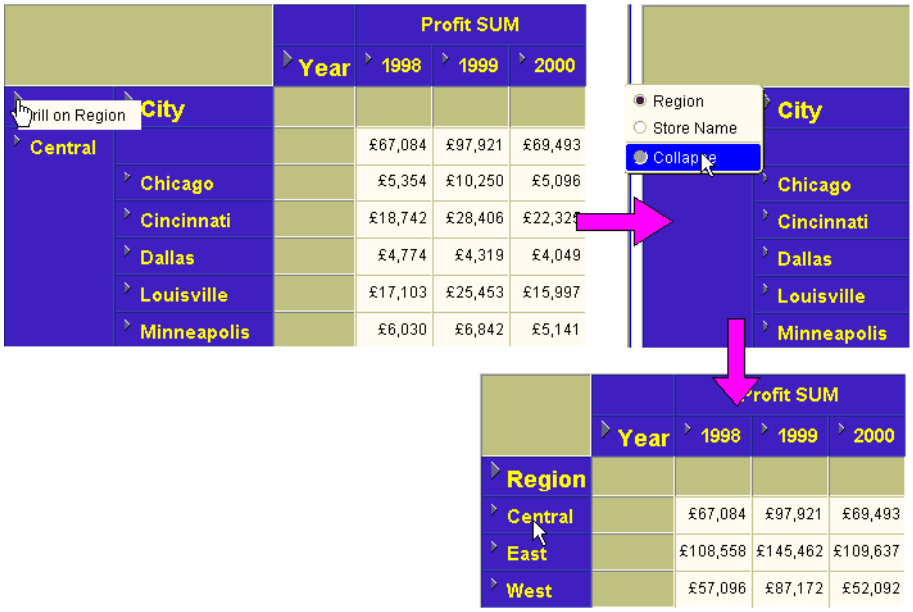
Example 1: In this example, the Region drill icon is selected, then City is selected from the drill options to display city data for each region. If you select the drill icon next to one of the regions (Central, East, or West), you would only drill down on that region.

Figure 8–7 Drilling into a worksheet to display more detail



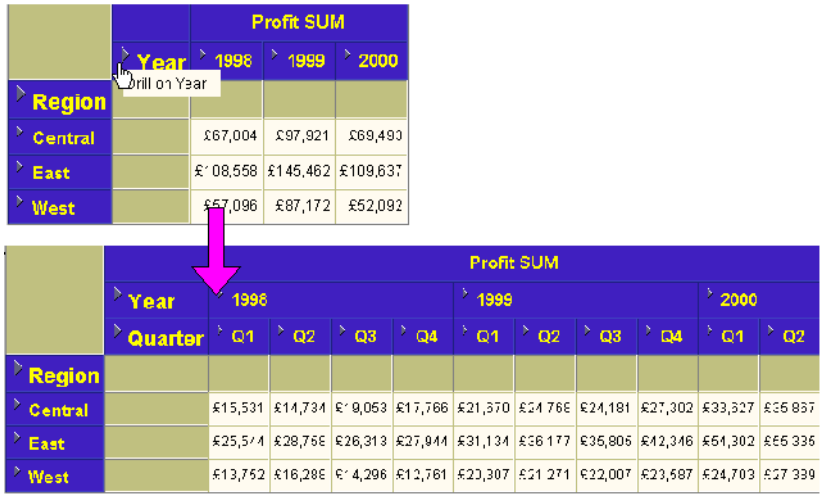
Example 2: In this example, the drill icon next to the value 'Region' is selected to display the drill menu. Then, the Collapse option is selected to remove the city detail data (i.e. Chicago, Cincinnati, Dallas) from the worksheet.

Figure 8–8 Drilling up to display less detail



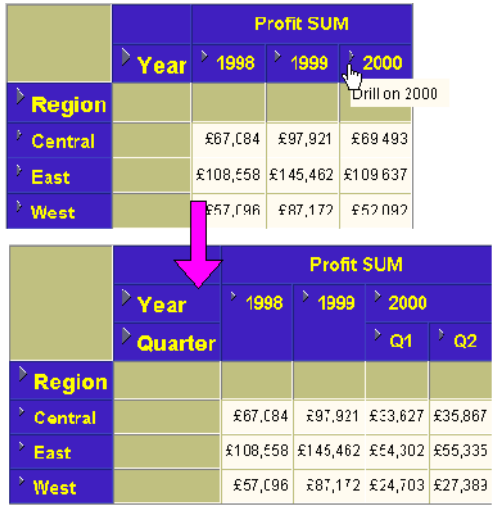
Example 3: You can drill down on the whole worksheet or selectively for particular areas of a worksheet. In this example, drilling on Year down to Quarter displays more detailed data for all Years (1998, 1999, and 2000).

Figure 8–9 Drilling into a whole worksheet



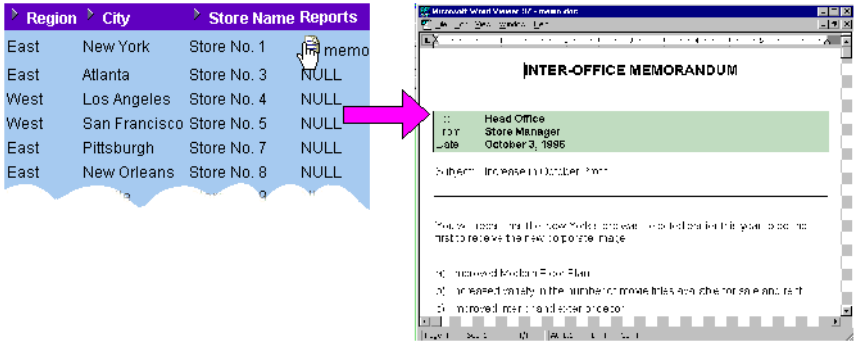
Example 4: In this example, drilling on 2000 down to Quarter displays more detailed data for the year 2000, but not 1998 or 1999.

Figure 8–10 Drilling selectively into particular area



Example 5: In this example, a text report is stored in the database. Clicking the document icon displays the report in an external application, such as Microsoft Word or a text editor.

Figure 8–11 Drilling out to see a text document



9

Using parameters

Using parameters

This chapter explains how to use Discoverer parameters to answer typical business questions, and contains the following topics:

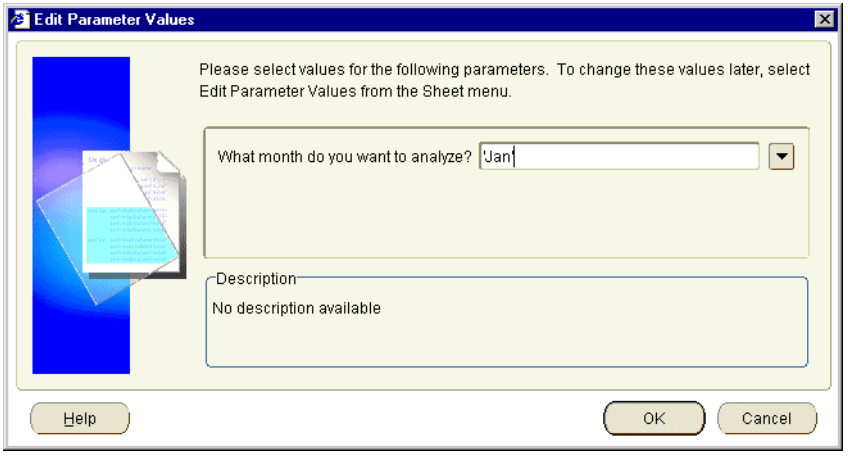
- "What are parameters?"
- "What are the benefits of using parameters?"
- "About using parameters"
- "About creating parameters"
- "About using parameters to collect dynamic user input"
- "How to set parameters"
- "How to activate parameters"
- "How to deactivate parameters"
- "How to create parameters"
- "How to edit parameters"
- "How to delete parameters"
- "Examples of parameters"

What are parameters?

Parameters are workbook items that allow Discoverer users to analyze worksheets by entering dynamic input values (see figure below). Input values are typically used to:

- provide input to conditions that are used to filter worksheets - for example, when a workbook or worksheet is opened or refreshed, the parameter is used to first ask the worksheet user 'What month do you want to analyze?'. A worksheet user can choose to look at data for the month of January only.
- provide input to calculations - for example, a worksheet user can enter the value '3' when prompted, which is then used to divide data into three bands using a predefined calculation containing a banding function (see "About using parameters to collect dynamic user input")

Figure 9–1 Edit Parameter Value dialog used to set parameters



What are the benefits of using parameters?

The main benefits of using parameters are:

- Worksheet data can be analyzed using dynamic user input.
- Workbooks can be targeted easily to specific groups of users.
- Worksheets open more quickly because the amount of data on a worksheet is minimized.
- If several Discoverer users are using a worksheet, each user can open the worksheet and display only the data that they are interested in. This enables users to customize worksheets to match their needs.

About using parameters

When opening or refreshing a workbook or worksheet with active parameters, the "Edit Parameter Values dialog" is displayed so that you can enter parameter values.

- You can change the parameter value at any time by choosing Sheet | Refresh Sheet and entering a different parameter value (or choose Sheet | Edit Parameter Value).
- Parameters that are part of an active condition are automatically activated.
- If you do not need to use parameters, you can deactivate them (see "How to deactivate parameters")
- You can create your own parameters (see "How to create parameters").

About creating parameters

When creating parameters, the following points apply:

- You can create parameters at two levels:
  - Workbook level - here, the parameter applies to all worksheets in a workbook. Changes to the parameter in any worksheet apply to all worksheets in the workbook that use the same parameter.
  - Worksheet level - here, the parameter applies to the current worksheet only.
- When you create a parameter for filtering worksheets, you typically create a condition also. The **Create condition** check box is selected by default on the "New Parameter dialog".
- When a condition is created with a parameter, you can deactivate the parameter by deactivating the condition. Deleting the condition deletes the parameter and vice versa.
- If you select the **Create Condition** check box in the "New Parameter dialog", a new condition is created and activated. Therefore, the parameter is also activated.

About using parameters to collect dynamic user input

Sometimes you want worksheet users to enter a dynamic value, typically for use in calculations. For example, to enter a value to specify the number of bands in which to group data (for more information, see "Examples of parameters").

To collect dynamic user input, do the following:

- Create a new parameter, and choose the following:
  - choose <NONE> from the **Which item do you want to base your parameter on?** drop down list (for more information, see "New Parameter dialog")
  - clear the **Let other users select multiple values** check box

    Note: If a Discoverer end user enters more than one parameter value, only the first parameter value is used.

  Notice that you cannot activate the parameter. Before it can be activated, a parameter not based on a worksheet item must be used in a calculation or condition.
- Create a calculation and insert the parameter name as an argument.

  For example, if you create a parameter called Band Value for use in a sales banding function, you might create a calculation called Banded Sales based on the following function:

  ```
  NTILE(:Band Value) OVER(ORDER BY SUM(Sales))
  ```

  Notice that the Band Value parameter is prefixed with a colon ':' to indicate that it is a parameter value (e.g. `:Band Value`).

  When the worksheet is opened or refreshed, the worksheet user is prompted to enter a banding value. If they enter the parameter value '3', the Sales SUM values on the worksheet are grouped into three bands.

  For an example of a parameter being used in a calculation, see "Example: Calculate hypothetical rank".

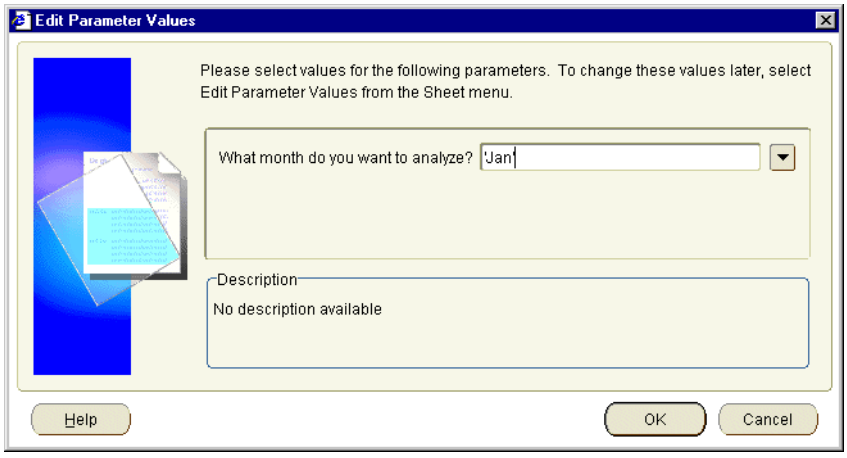
How to set parameters

When you open or refresh a worksheet that contains active parameters, you must enter parameter values to set the parameters. If default values are defined, you might also accept default values. The values entered are typically used to filter the data displayed on the worksheet, or are used to provide dynamic input to calculations.

To set parameters:

1. Open a worksheet.

If the worksheet has active parameters, these are displayed automatically by the "Edit Parameter Values dialog". If defined, a default value is displayed in the text field next to each parameter.



2. Enter a value for each parameter by doing one of the following:

- Type in a value as prompted.
- (optional) Accept the default value, if a default value is defined.
- (optional) Click the down arrow next to the field and select a value from the drop down list of values next to each parameter (where available).

  If the list of values in the drop down list is too long to display on screen, the "Select Value dialog" or "Select Values dialog" is displayed. These dialogs enable you to search for and select the values that you want to use. For more information, see "Using lists of values (LOVs)".

3. Click OK to close the dialog and display the worksheet.

The worksheet is updated according to the parameter values selected. For example, if the parameter value Central is used to filter the worksheet data on Region, the worksheet displays only data for the Central region 2000 (see figure below).

Figure 9–2 A worksheet filtered by a parameter value

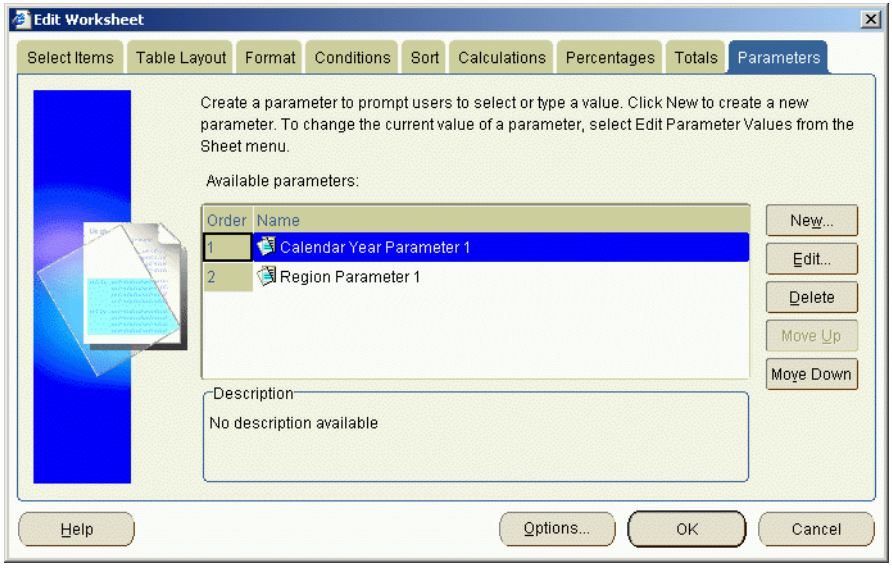
How to activate parameters

You activate parameters when you want Discoverer users to be prompted to enter parameter values when they open or refresh worksheets. For example, to choose how to filter worksheet data.

Parameters are activated by association. In other words, if parameters are included in active conditions or calculations, the parameters become active. When you activate parameters, they remain active until they are deactivated (see "How to deactivate parameters").

To activate parameters:

1. Open the worksheet containing the parameter.
2. To see which parameters are available, choose Tools | Parameters to display the "Edit Worksheet dialog: Parameters tab".



The Parameters tab shows parameters available to the worksheet. The check box beside each item indicates whether it is activated.

3. Activate the condition or calculation that includes the parameter:
   - If the parameter is included in a condition, display the Conditions tab and select the check box next to the condition containing the parameter, then click OK to close the dialog.
   - If the parameter is included in a calculation, display the Calculation tab and select the check box next to the calculation containing the parameter, then click OK to close the dialog.
4. If the "Edit Parameter Values dialog" is displayed, enter parameter values as prompted, then click OK.

   The worksheet is updated according to parameter values entered.

Notes

- To update the workbook or worksheet with a different parameter value, choose Sheet | Refresh Sheet to display the "Edit Worksheet dialog: Parameters tab" and enter a new value.

- On the "Edit Worksheet dialog: Parameters tab", although the check boxes show the status of the parameters, the check boxes are grayed out. This is because you cannot activate and deactivate parameters by selecting and de-selecting check boxes. You must modify the condition or calculation using a parameter to affect the parameter status.

How to deactivate parameters

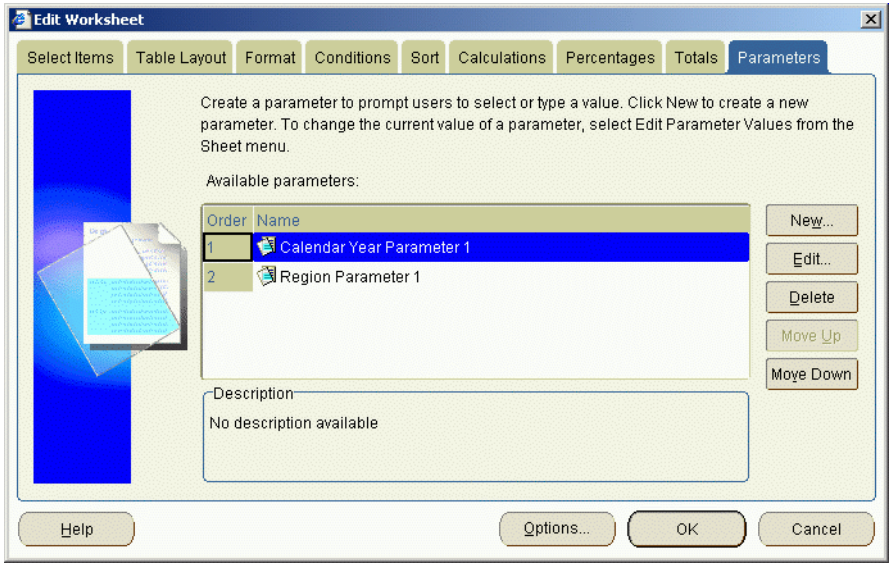
You deactivate parameters when you do not want Discoverer users to be prompted to enter parameter values when they open or refresh workbooks or worksheets.

Parameters become deactivated when they are not included in active conditions or calculations.

Note: If you want to disable the parameter permanently, delete the parameter (see "How to delete parameters").

To deactivate parameters:

1. Open the worksheet containing the parameter that you want to deactivate.
2. To see which parameters are available, choose Tools | Parameters to display the "Edit Worksheet dialog: Parameters tab".



The Parameters tab shows parameters available to the worksheet. The check box beside each item indicates whether it is activated.

3. Deactivate the condition or calculation that includes the parameter:
   - If the parameter is included in a condition, display the Conditions tab and clear the check box next to the condition containing the parameter, then click OK to close the dialog.
   - If the parameter is included in a calculation, display the Calculation tab and clear the check box next to the calculation containing the parameter, then click OK to close the dialog.
4. (optional) If the worksheet has active parameters, enter parameter values as prompted in the "Edit Parameter Values dialog".
5. Click OK.

   The worksheet is updated according to parameter values entered.

Notes

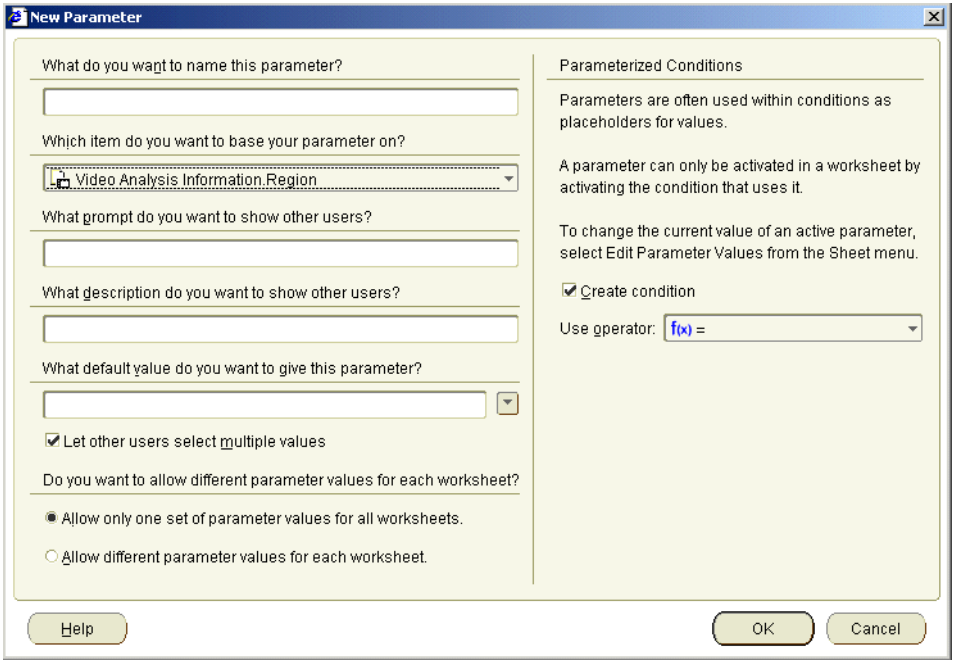
- To update the workbook or worksheet with a different parameter value, choose Sheet | Refresh Sheet to display the "Edit Worksheet dialog: Parameters tab" and enter a new value.
- On the "Edit Worksheet dialog: Parameters tab", although the check boxes show the status of the parameters, the check boxes are grayed out. This is because you cannot activate and deactivate parameters by selecting and de-selecting check boxes. You must modify the condition or calculation using a parameter to affect the parameter status.

How to create parameters

You create parameters to enable Discoverer users to enter input values when a worksheet is opened or refreshed. For example, to provide dynamic input to a condition or calculation.

To create a parameter:

1. Open the Discoverer workbook containing the worksheet to which you want apply a parameter.
2. Choose Tools | Parameters to display the "Edit Worksheet dialog: Parameters tab".
3. Click New to display the "New Parameter dialog".



4. Enter a parameter name into the **What do you want to name this Parameter?** field. If you do not enter a name, Discoverer creates a default Parameter name for you.
5. Choose which item you want to base the parameter on from the **Which item do you want to base your parameter on?** list, as follows:
   - If you want to use the parameter to filter worksheets, select the item that you want to filter on. Make sure that the **Create Condition** check box is selected so that a condition is automatically created to filter the worksheets using the item selected. For example, to filter a worksheet on calendar month, you might choose Month here.
   - If you want to use the parameter to use the parameter to provide input to a calculation, select the <NONE> option. For example, to enable worksheet users to choose how much percentage increase they want to display on a worksheet (for more information, see "About using parameters to collect dynamic user input".

6. (optional) Enter an instruction or question into the **What prompt do you want to show to other users?** field. This prompt is displayed to Discoverer users when they open or refresh the worksheet, and tells them what value to enter.
7. (optional) Enter a brief description into the **What description do you want to show to other users?** field. This text is displayed on the Edit Parameter Values dialog and helps users decide what parameter value to enter.
8. (optional) If required, enter a default value in the **What default value do you want to give this Parameter?** field. Here, you can either:
   - Type a default value directly into the field.
   - If a list of values is available for this value, click the drop down arrow and select a parameter value from the list.

   If the list of values in the drop down list is too long to display on screen, the "Select Value dialog" or "Select Values dialog" is displayed. These dialogs enable you to search for and select the values that you want to use. For more information, see "Using lists of values (LOVs)".
9. Select the **Let other users select multiple values** check box if you want worksheet users to be able to select multiple parameter values for the Parameter. For example, if a parameter is used to filter a worksheet on year, a user might want to look at 2001 and 2002.
10. (optional) Select the **Create Condition** check box to use the parameter to filter worksheets. Clear the **Create Condition** check box to use the parameter to provide input to a calculation.

    When you select the **Create Condition** check box you create a condition based on the parameter. Select an operator for the condition from the **Use operator** drop down list. For example, =, <, >.

    This enables you to filter worksheets according to arbitrary parameter values. For example, if you create a parameter on year called **Choose Year** and select the > operator, a condition is created: `Year > :Choose Year`. The `:Choose Year` value is the value entered by the worksheet user.
11. Click OK to save the details and display the "Edit Worksheet dialog: Parameters tab".

    If you created a parameter to filter the worksheet, the check box next to the parameter is selected, which means that the parameter is active.
12. Click OK to close the Edit Worksheet dialog and return to the worksheet.

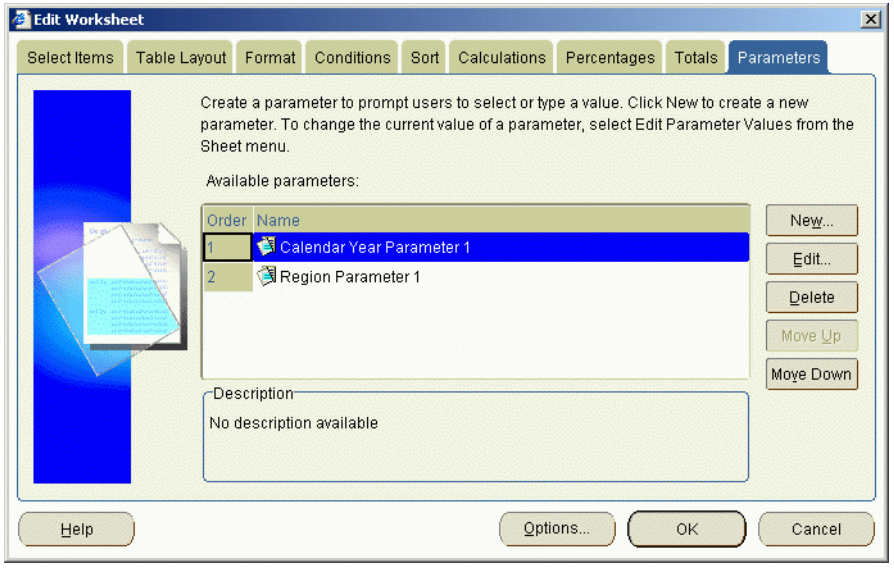
If the new parameter is active, enter parameter values at the "Edit Parameter Values dialog". The worksheet is updated according to parameter values entered (see "How to set parameters").

How to edit parameters

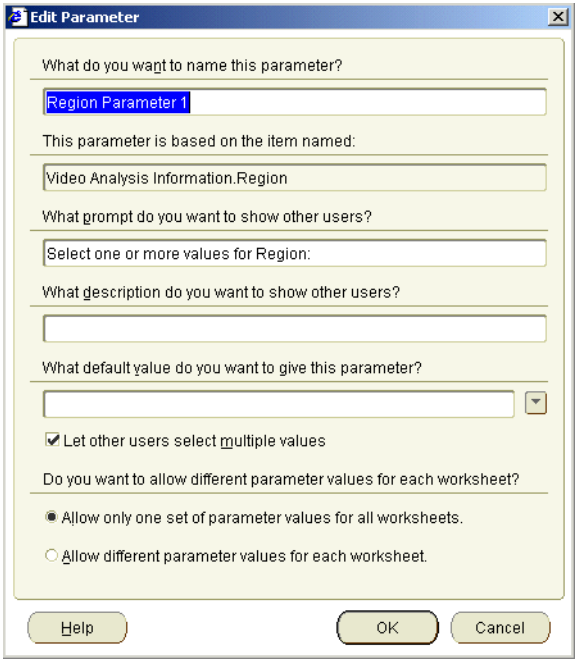
You edit parameters to change the way that they behave. For example, to change the default parameter value, or change the prompt displayed to Discoverer users when they enter parameter values.

To edit a parameter:

1. Display the worksheet that contains the parameter that you want to edit.
2. Choose Tools | Parameters to display the "Edit Worksheet dialog: Parameters tab".



3. Select the parameter that you want to edit from the **Available Parameters** list.
4. Click Edit to display the "Edit Parameter dialog".



5. Make changes to the parameter as required.
6. Click OK to save changes and return to the Parameters tab.
7. Click OK to close the Parameters tab and return to the worksheet.

   If parameters are active, enter parameter values at the "Edit Parameter Values dialog". The worksheet is updated according to parameter values entered (see "How to set parameters").

Notes

- When you are editing a parameter used in a condition, you cannot use the "Edit Parameter dialog" to change the condition settings. You can only edit conditions created for parameters using the "Edit Worksheet dialog: Conditions tab".

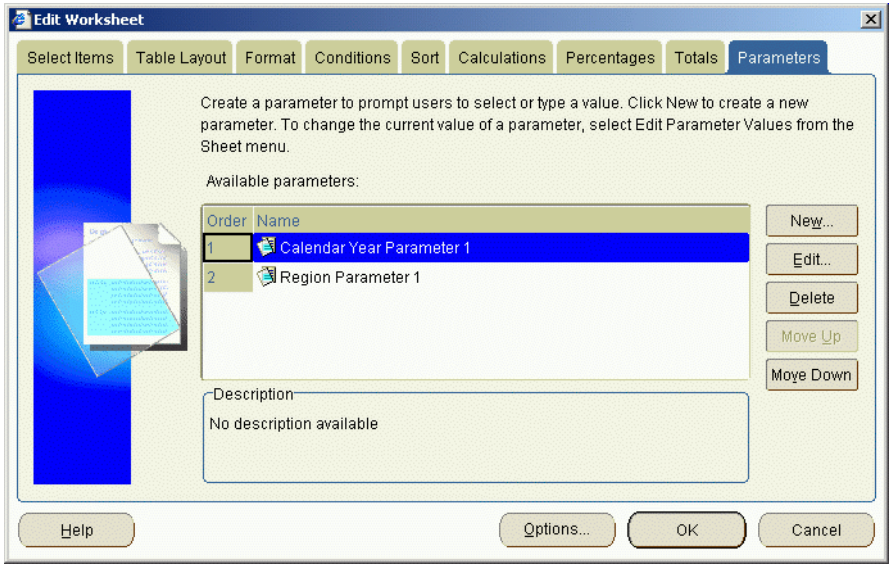
How to delete parameters

You delete a parameter when you no longer want to use it, and want to remove it permanently from the worksheet.

Note: If you only want to disable the parameter temporarily, deactivate the parameter (see "How to deactivate parameters").

To delete a parameter:

1. Display the worksheet that contains the parameter that you want to remove.
2. Choose Tools | Parameters to display the "Edit Worksheet dialog: Parameters tab".



3. Select the parameter that you want to remove from the **Available Parameters** list.
4. Click Delete to remove the parameter from the worksheet, and click Yes at the confirmation dialog.
5. Click OK to close the Edit Worksheet and return to the worksheet.

   When you open this workbook again, or refresh the worksheet, Discoverer will not prompt you to enter a parameter value for this parameter.

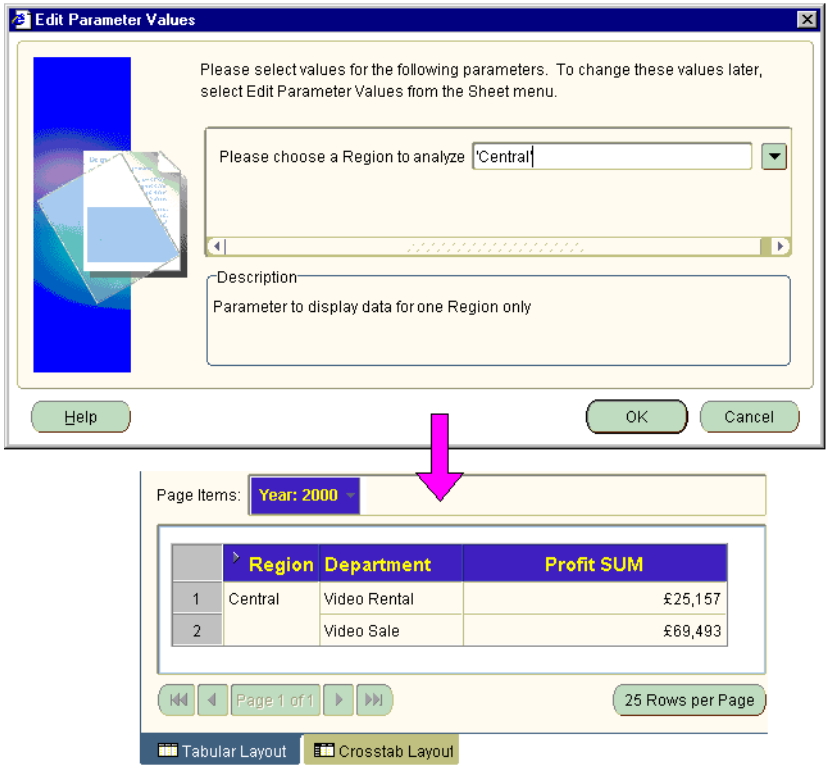
Notes

- If the parameter that you delete was included in conditions or calculations, those conditions and calculations are also deleted.

Examples of parameters

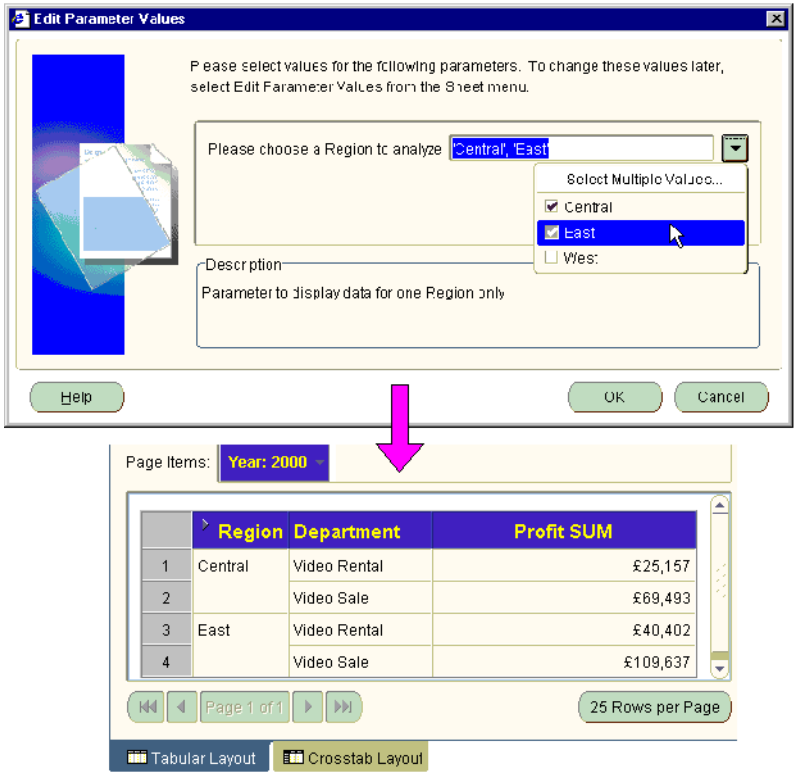
Example 1: In this example a parameter is used to filter a worksheet. For example, you might want worksheet users to be able to select which region's data they want to analyze. In the figure below, the value Central is entered in the Edit Parameter Values dialog. This displays only data for the Central region on the worksheet.

Figure 9–3 A parameter value being used to filter a worksheet



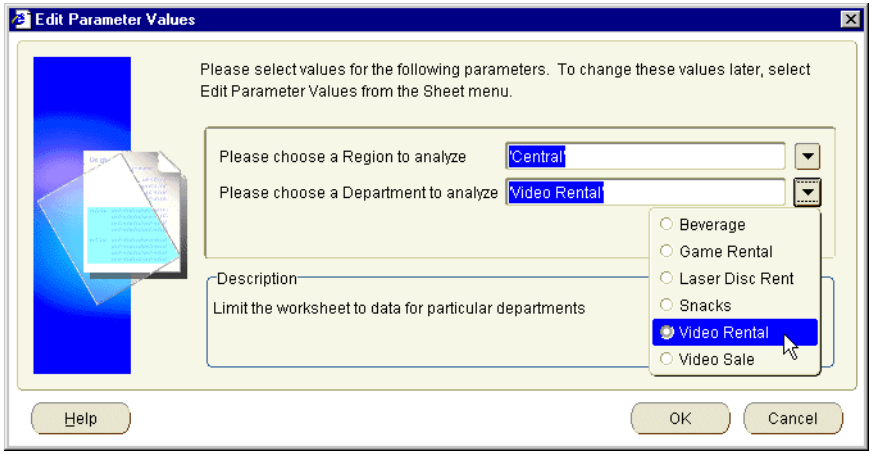
Example 2: In this example a parameter that enables multiple values to be specified is used to filter a worksheet. For example, you might want worksheet users to be able to select which region's data they want to analyze. In the figure below, the values Central and East are entered at the Edit Parameter Values dialog. This displays only data for the Central and East region on the worksheet.

Figure 9–4 A parameter enabling multiple values being used to filter a worksheet



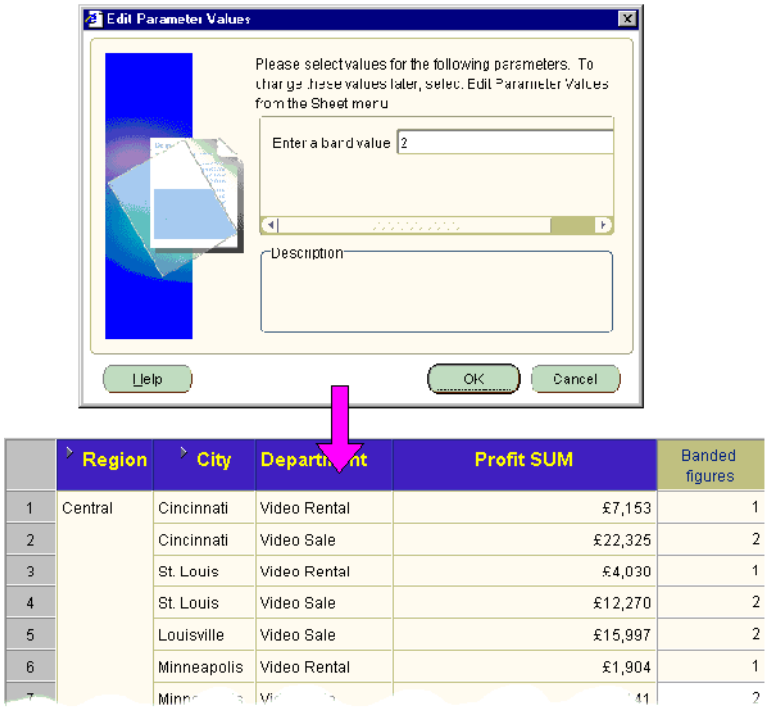
Example 3: This example shows how you can use more than one parameter to filter a worksheet. For example, you might want worksheet users to be able to select which region and which department's data they want to analyze. In the figure below, the values Central (Region) and Video Rental (Department) are selected.

Figure 9–5 A worksheet with more than one parameter defined



Example 4: This example shows how you can use a parameter to collect dynamic user input. For example, you might want worksheet users to be able to select how many bands worksheet data is arranged into.When the value '2' is entered, the Profit SUM figures are placed into two bands.

Figure 9–6 A parameter used to provide dynamic input to a banding calculation



10

Using conditions

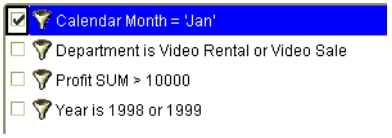
Using conditions

This chapter explains how to use Discoverer conditions to answer typical business questions. For example, which product items sell more than 10,000 each week? This section contains the following topics:

What are conditions?

Conditions are worksheet items that enable you to choose what data to display on worksheets. Conditions filter out data that you are not interested in, enabling you to concentrate on data that you want to analyze. For example, in the figure below, a condition is being used that only displays January data (i.e. where Calendar Month = 'Jan').

Figure 10–1 Worksheet conditions in Discoverer



You create conditions by specifying condition statements against which to match worksheet data. Discoverer uses conditions as follows:

- data that matches your condition statements is displayed
- data that does not match your condition statements is not displayed

Conditions are categorized as follows:

- single conditions - contain a single condition statement
- multiple conditions - contain two or more condition statements in a single condition item (for more information, see "What are multiple conditions?")
- nested conditions - contain condition statements that are defined within other condition statements (for more information, see "What are nested conditions?")

What are multiple conditions?

Multiple conditions comprise more than one condition statement in a single condition item. For example, you might want to only display data for the year 2000 where the profits are greater than $900,000.

Note: You might also create two single conditions here to achieve the same result. For more information, see "About applying more than one condition".

What are nested conditions?

Nested conditions comprise condition statements contained within the definition of other condition statements. Nested conditions work as follows:

- You can group multiple condition statements. Conditions consisting of multiple statements are connected using the logical AND and OR operators.
- You can also nest statements, so that one statement is contained within the definition of another statement.

For example, you might want to find data for the year 2000, where either the Region equals Eastern and Profits are greater than $900,000, or where the Region equals Northern and Profits are greater than $500,000.

About using conditions

Worksheets can contain conditions defined by you, by the Discoverer manager, or by other Discoverer users. Conditions work as follows:

- If you have the privileges to edit a worksheet, you select which conditions to apply to the worksheet.
- When you create a condition, the condition is available to all worksheets in the workbook. You apply the condition to individual worksheets.
- If none of the existing conditions filter the data exactly as you want, you can create your own conditions and apply them to the worksheet.
- To apply conditions more flexibly, you can use parameters to give workbook users a choice of what data to display on a worksheet (see "Using parameters").
- Conditions created when a parameter is added to a worksheet are automatically selected when the parameter is turned on, and automatically deselected when the parameter is turned off.

About applying more than one condition

Applying more than one single condition at the same time can have the same effect as creating a multiple condition. This can keep your condition statements short and make them easier to understand by other Discoverer users. Single condition statements also enable you to selectively apply individual condition statements.

For example, you apply the following two single conditions:

- Year = 2001
- Sales SUM > $100,000

This has the same effect as one multiple condition containing two condition statements:

- Year = 2001 AND Sales SUM > $100,000

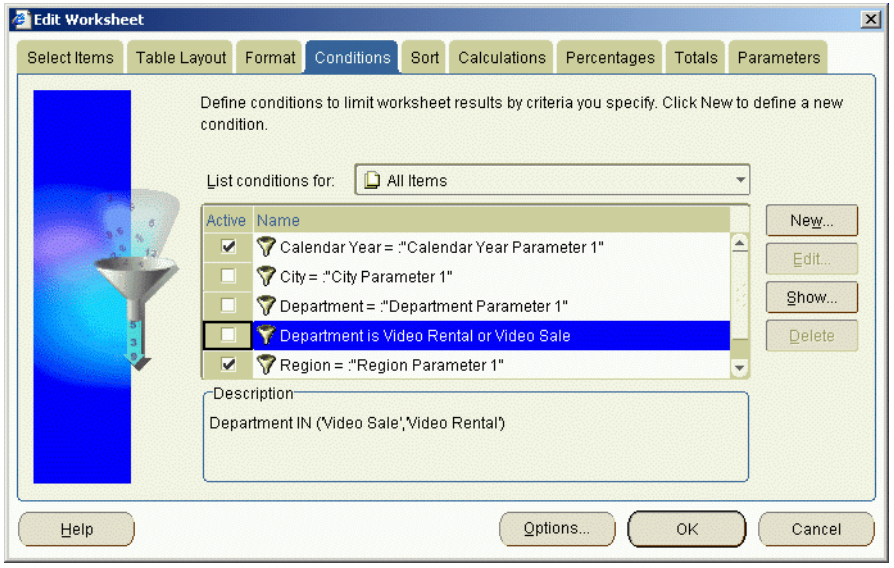
Note: When filtering certain types of data, using a multiple condition produces different results from using more than one single condition. For example, when using analytic functions (see "About analytic functions and sequencing").

How to turn conditions on

You turn conditions on when you want to filter worksheet data according to the condition statement. For example, to turn on the condition Year = 2001 to display only data for the year 2001.

To turn a condition on:

1. Choose Tools | Conditions to display the "Edit Worksheet dialog: Conditions tab".



The Conditions tab lists conditions available to the worksheet. The check box beside each item indicates whether the condition is turned on.

2. Select the check box next to conditions that you want to turn on.

   You can turn on more than one condition at a time.

3. Click OK.

Discoverer displays the data that meets the condition(s) that you have turned on.

Notes

- If you turn on more than one condition at the same time, this can have the same effect as applying a single multiple condition (see "About applying more than one condition").
- If you select two (or more) conditions that conflict, a warning appears. For example, the two Conditions “Year = 2000” and “Year = 2001 or 2002” conflict. This is because the first condition filters out data that does not apply to 2000, and the second condition tries to display 2001 and 2002 data at the same time.

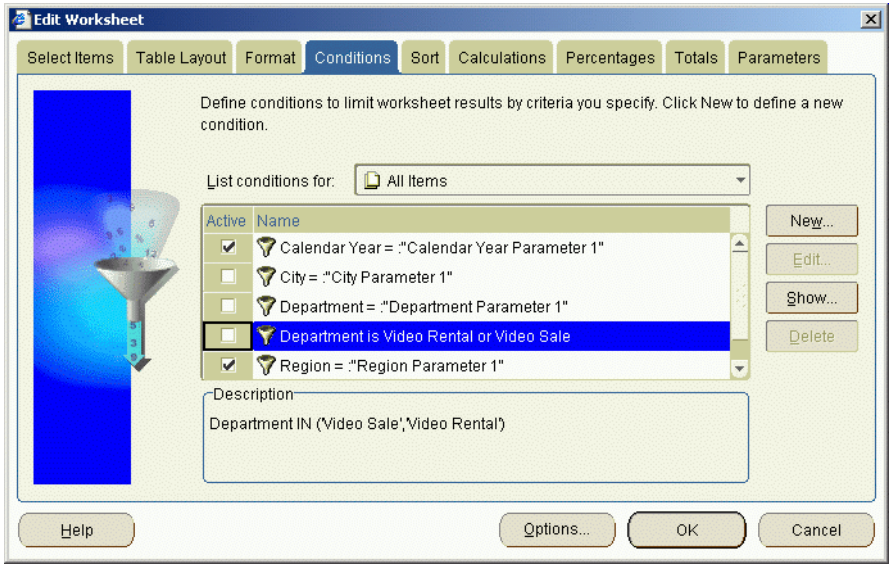
How to turn conditions off

You turn conditions off when you no longer want to filter the worksheet with a condition. If you need to filter the data later using the condition, you can always turn the condition back on. For example, you might turn off the condition Year = 2001 to display data for all years available.

Note: Do not click the Delete button to turn off a condition. The Delete button permanently removes the condition from your workbook (see "How to delete conditions").

To turn a condition off:

1. Choose Tools | Conditions to display the "Edit Worksheet dialog: Conditions tab".



The Conditions tab lists conditions available to the worksheet. The check box beside each item indicates whether it is turned on.

2. Clear the check box next to conditions that you want to turn off.
3. Click OK.

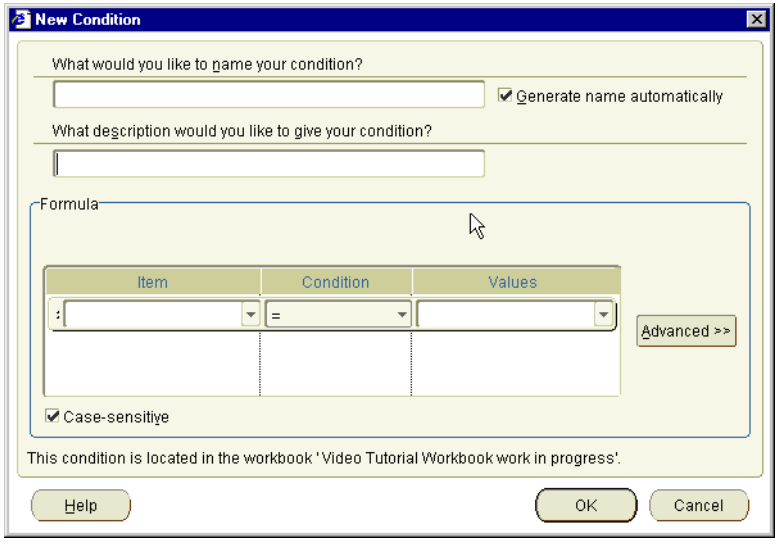
Discoverer displays data that meets any conditions that are still turned on.

How to create single conditions

You create single conditions when you want to filter worksheet data in a new way using a single condition statement. For example, to display data for the year 2001, you might create the condition 'Calendar year = 2001'.

To create a single condition:

1. Choose Tools | Conditions to display the "Edit Worksheet dialog: Conditions tab".
2. Click New to display the "New Condition dialog".



3. In the **What do you want to name this condition** field, specify a name for the condition.

   Hint: If you want Discoverer to create a condition name for you from the conditions statements that you enter, select the **Generate name automatically** check box.

4. (Optional) Use the **What description do you want to give your condition** field to enter additional information about the condition. For example, hints and tips about when to use the condition. This information is displayed to workbook users to help them select which conditions to use.

5. Use the **Formula** area to define the condition statements:

   a. Use the **Item** drop down list to choose what item you want to filter the data on.

   For example, you might choose Year to display data for a particular year.

   Hint: The **Item** drop down list shows the items available to the worksheet that you can use in the condition. You can use items that are not currently displayed on the worksheet to filter the worksheet data.

   b. Use the **Condition** drop down list to choose how to match data against the item.

For example, you might select '>' here to filter data where the value is greater than a certain number.

c. Use the **Values** field to define what data you want to match against.

For example, you might enter 2001 here to look only at data for the year 2001.

If a list of values is defined for the item, you can also select from items and values in the drop down list, which might contain items and values made available to you by the Discoverer manager. For more information, see "Using lists of values (LOVs)".

6. If you want to match upper and lower case text data exactly, select the **Case sensitive** check box.
7. Click OK to save the details and close the dialog.

   The new condition appears in the Conditions dialog and is turned on.
8. Click OK to close the Conditions dialog and return the worksheet.

Discoverer filters the worksheet to display only data that matches the condition. Data that does not match the condition is not displayed.

Notes

- When entering values into the **Values** field, you can enter multiple values when the condition operator is one of the following types:
  - = (equals)
  - <> (not equals)
  - IN
  - NOT IN

  For more information about what values you can enter in the **Values** field, see "Using lists of values (LOVs)".

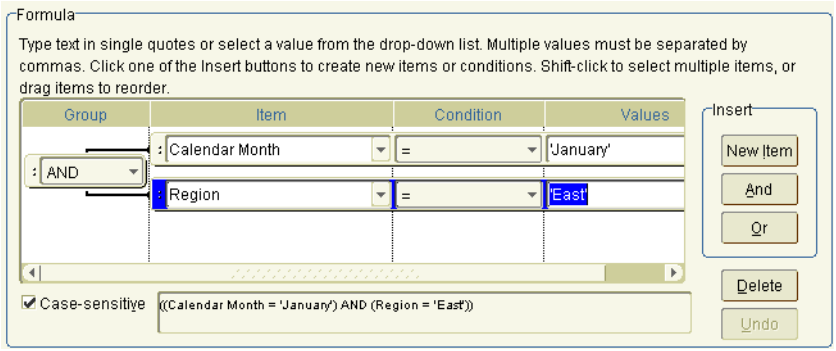
How to create multiple conditions

You use a multiple condition to display only data that matches multiple condition statements that you cannot display using a single condition. For example, to display data for the year 2000 that also relates to the Eastern region.

To create a multiple condition:

1. Open the worksheet that you want to analyze.
2. Choose Tools | Conditions to display the "Edit Worksheet dialog: Conditions tab".
3. Click New to display the "New Condition dialog".
4. Create a single condition (for more information, see "How to create single conditions").
5. Click Advanced.

   Discoverer adds **Insert** buttons for New Item, And and Or. You use these buttons to create the advanced condition.



6. To build a multiple condition, do one or more of the following:
   - Click New Item in the **Insert** box to insert a new condition statement line to the condition.

     By default, the new item is grouped with a logical AND, which means that data must match all condition statements contained within the AND group.
   - Click And in the **Insert** box to insert a new condition statement line to the condition. Using 'AND' narrows a search to display only items that match all criteria.
   - Click Or in the **Insert** box to insert a new condition statement line to the condition. Using 'OR' widens a search to display items that match any of the criteria.

Hint: To change the way that condition statements are grouped, click the buttons in the **Group** column to display a drop down list of options (e.g. AND, OR, NOT AND, or NOT OR).

7. When you have finished, click OK to save the multiple condition and close the dialog.

   The new condition appears in the Conditions dialog and is turned on.

8. Click OK to close the Conditions dialog and return the worksheet.

Discoverer filters the worksheet to display only data that matches the condition. Data that does not match the condition is not displayed.

Notes

- To create a multiple condition, you might also add condition statements to an existing single condition.

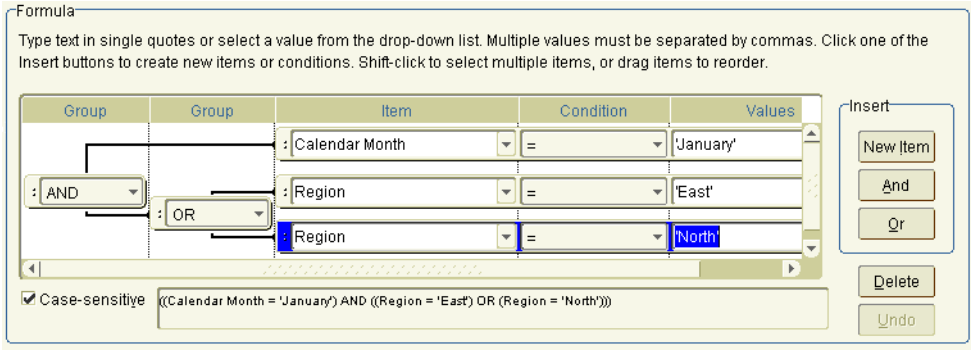
How to create nested conditions

You use nested conditions to display only data that matches a specific set of condition statements that you cannot apply in a single or multiple condition.

To create a nested condition:

1. Open the worksheet that you want to analyze.
2. Create a multiple condition (see "How to create multiple conditions").
3. In the New Condition dialog, click Advanced.

   Discoverer adds Insert buttons for New Item, And and Or. You use these buttons to create the nested conditions.



4. Use the grouping button (AND, OR, NOT AND, or NOT OR) to add a new condition statement line under the currently selected Group.
5. Enter the condition statement details.
6. When you have finished, click OK to save the nested condition and close the dialog.

   The new condition appears in the Conditions dialog and is turned on.
7. Click OK to close the Conditions dialog and return to the worksheet.

Discoverer filters the worksheet to display only data that matches the condition. Data that does not match the condition is not displayed.

Notes

- To create a nested condition, you might also edit an existing single or multiple condition.

How to edit conditions

You edit conditions when you want to change the way that they filter data. For example, you might have a condition that displays sales people who generate more than $100,000 worth of sales. You might want to change this to more than $150,000 worth of sales.

To edit a condition:

1. Choose Tools | Conditions to display the "Edit Worksheet dialog: Conditions tab".
2. Select the condition that you want to change from the Conditions list.
3. Click Edit to display the "Edit Condition dialog".
4. Edit the condition details as required.
5. Click OK to save the details and close the "Edit Condition dialog".
6. Click OK to close the Conditions dialog and return to the worksheet.

If the condition is active, Discoverer filters the worksheet to display only data that matches the condition (for more information, see "How to turn conditions on").

Notes

- You cannot edit conditions created by the Discoverer manager. Only Discoverer managers can edit conditions that they have created. Therefore:
  - The Edit button next to conditions created by the Discoverer manager is greyed out.
  - The Show button next to conditions created by the Discoverer manager is greyed in.

How to delete conditions

You delete a condition when you no longer want to use it, and you want to remove it permanently from a workbook. For example, you might have created a temporary condition to produce an ad hoc report and now want to remove the condition from the workbook.

Note: If you want to disable the condition without deleting the condition permanently, you can turn the condition off (see "How to turn conditions off").

To delete a condition:

1. Choose Tools | Conditions to display the "Edit Worksheet dialog: Conditions tab".
2. Select the condition that you want to delete from the Conditions list.
3. Click Delete.
4. Click OK to close the Conditions dialog and return to the worksheet.

If the deleted condition was previously active, Discoverer removes the condition and displays data that was previously not displayed.

Notes

- You cannot delete conditions created by the Discoverer manager. Only Discoverer managers can delete conditions that they have created.

Notes on how Discoverer applies conditions to roll-ups

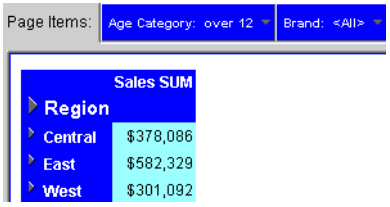
When a worksheet has page items, Discoverer applies conditions to underlying sub-totals. Discoverer does not apply conditions to roll-ups.

The following example illustrates how this affects Discoverer worksheets.

Example of how Discoverer applies conditions to roll-ups

In this example, a worksheet contains sales totals for regions (see figure below).

Figure 10–2 The example worksheet containing aggregated totals for regions



Notice that the Brand item is displayed in the Page Items area. The Sales SUM values are roll-ups of underlying Brand sub-totals for each region (see figure below).

Figure 10–3 The example worksheet showing underlying Brand sub-totals

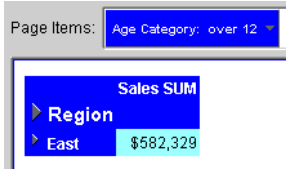
For example, Astro is $4,553, and Big Studios is $71,661. The largest sub-total is Wolf ($133,154).

Now imagine that you apply the condition Sales SUM > 400,000 to the worksheet.

The result is that Discoverer returns no rows, because none of the underlying Brand sub-totals are greater than $400,000.

If you want to apply the condition Sales SUM > 400,000 to the roll-ups displayed on the worksheet, you must remove the Brand item from the worksheet. Discoverer will then return the East region row (see figure below).

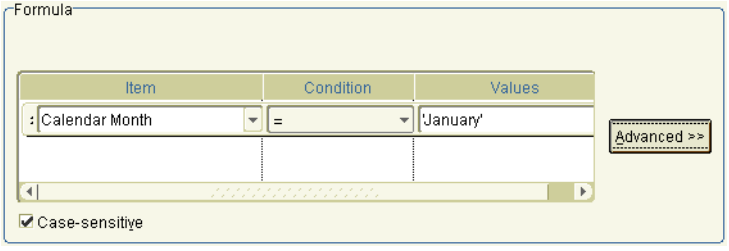
Figure 10–4 The example worksheet with the Brand item removed and the condition Sales SUM > 400,000 applied



Examples of conditions

Example 1: In this example, you want to display only data for the month of January.

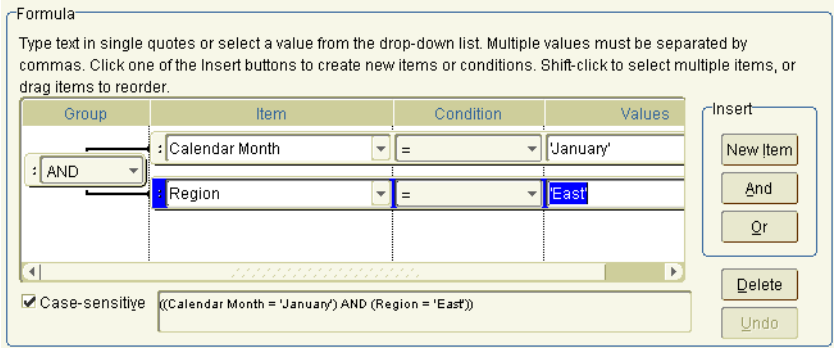
Figure 10–5 A single condition to return data for the month of January



In the figure above, a single condition statement is defined (Calendar Month = January).

Example 2: In this example, you want to display only data for the month of January and the East region.

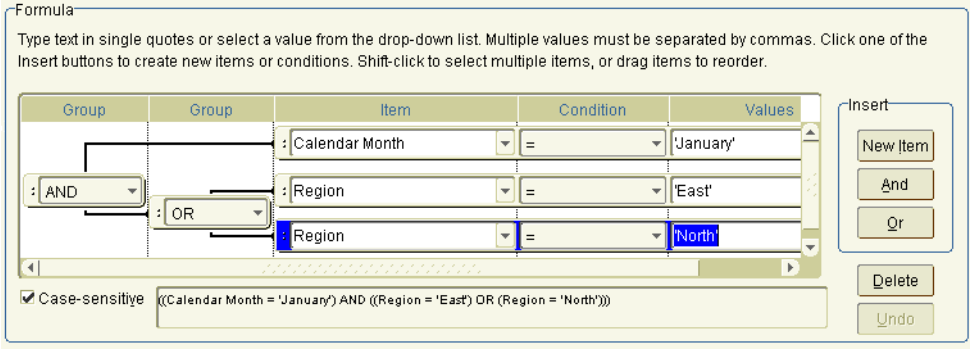
Figure 10–6 A multiple condition to return data for the month of January for the East region



In the figure above, a multiple condition statement is defined (Calendar Month = January AND Region = East).

Example 3: In this example, you want to display only data for the month of January, and data for the East region or data for the North region.

Figure 10–7 A nested condition to return data for the month of January and the East region or the North region



In the figure above, a nested condition is created (Calendar Year = 2001 AND Region = East OR Region = North).

Notes

- The **Case sensitive** check box is selected in these examples, which means that text data must match exactly. For example, when **Case sensitive** is selected for a condition statement 'Region = East', data would not be displayed where the Region equalled 'EAST' or 'east'.

When the **Case sensitive** check box is not selected, the worksheet query might take longer to run.

11

Using totals

Using totals

This chapter explains how to use Discoverer totals to answer typical business questions. For example, what is the total sales figure for January? This section contains the following topics:

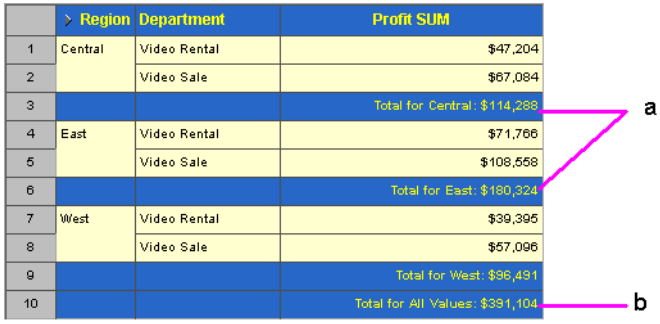
See also:

- "What are totals?"
- "About totals on crosstab worksheets"
- "About totals in worksheets"
- "About SUM and Cell SUM"
- "When to use SUM instead of Cell SUM"
- "When to use Cell SUM instead of SUM"
- "About migrating workbook totals to OracleAS Discoverer"
- "How to display or hide totals"
- "How to create totals"
- "How to edit totals"
- "How to delete totals"
- "Examples of totals"

What are totals?

Totals are worksheet items that enable you to quickly and easily summarize rows and columns. For example, to calculate the sum of a column of profit figures, or calculate the average of a row of sales figures. You can then use the totals to analyze the worksheet data.

Figure 11–1 A Discoverer worksheet with totals



	Region	Department	Profit SUM
1	Central	Video Rental	$47,204
2		Video Sale	$67,084
3			Total for Central: $114,288
4	East	Video Rental	$71,766
5		Video Sale	$108,558
6			Total for East: $180,324
7	West	Video Rental	$39,395
8		Video Sale	$57,096
9			Total for West: $96,491
10			Total for All Values: $391,104

Key to figure:

a. Sub totals defined on Profit SUM for each region

b. A grand total defined on Profit SUM for all regions

You use Discoverer totals to calculate:

- the result of applying a calculation to totals (the SUM - for more information, see "When to use SUM instead of Cell SUM")
- the result of adding values (the Cell SUM - for more information, see "When to use Cell SUM instead of SUM")
- the number of values (the Count)
- the lowest of the values (the Minimum)
- the highest of the values (the Maximum)
- the square root of the variance (the Standard Deviation)
- the amount of variance in a set of values (the Variance)

About totals on crosstab worksheets

When creating totals, note that table worksheets and crosstab worksheets have the following differences:

- On table worksheets you apply grand totals to columns. Here, you position totals at the bottom of a column.
- On crosstab worksheets you can apply grand totals to either columns or rows. Here, you position totals either at the bottom of a column or on the right hand side of a row.

About totals in worksheets

When a worksheet contains totals, you can:

- display the totals (or turn the totals on)
- hide the totals (or turn the totals off)

About SUM and Cell SUM

When you create totals in Discoverer, you can select one of two functions to calculate the sum of a column or row that contains a calculation:

- SUM (Discoverer default) - use this to apply the calculation to the total
- Cell SUM - use this to apply the calculation to individual values, then add the calculated values. In other words, you simply add up values in the column or row

When to use SUM instead of Cell SUM

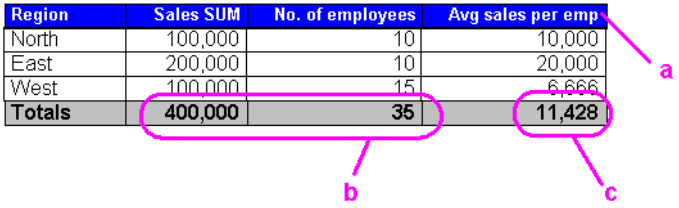
You typically use SUM rather than Cell SUM when you add items containing:

- analytic functions (e.g. Rank and NTILE)
- aggregated (sum total) items (e.g. AVG and VARIANCE)

Example - using SUM to calculate the average sales per employee

In this example, you use SUM to calculate an overall average sales figure per employee by region.

Figure 11–2 Using SUM to calculate the average sales per employee



Key to figure:

a. The calculation item **Avg sales per emp,** contains the calculation Sales SUM / No. of employees. For example, the value for the East region is 20,000 (i.e. 200,000 / 10).

b. In the **Sales SUM** and **No. of employees** columns, the Totals values contain the sums of the two columns.

c. In the column **Avg sales per emp,** the Totals value is calculated as 11,428 (i.e. 400,000 / 35).

In the figure above, the worksheet contains four items, including the calculation item Avg sales per emp. When you calculate the total for the Avg sales per emp item, you want to apply the calculation to the totals for the Sales SUM and No. of employees items. In other words, the intended total value for the Avg sales per emp item is 11,428 (i.e. 400,000 / 35).

Note: If you used Cell SUM in this example, you would sum the Avg sales per emp item column. This would result in the unintended total value 36,666 (i.e. 10,000 + 20,000 + 6,666).

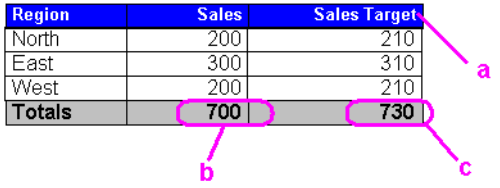
When to use Cell SUM instead of SUM

You typically use Cell SUM rather than SUM when you simply want to add a row or column of values.

Example - using Cell SUM to calculate an increase in sales

In this example, you use Cell SUM to calculate an overall total sales target for individual sales targets (i.e. an increase of ten units).

Figure 11–3 Using Cell SUM to calculate an increase in sales



Key to figure:

a. The calculation item **Sales Target,** contains the calculation Sales + 10. For example, the value for the North region is 210 (i.e. 200 + 10).

b. In the **Sales** column, the Totals value is the sum of the Sales column.

c. In the **Sales Target** column, the Totals value is the sum of the Sales Target column 730 (210 + 310 + 210).

In the figure above, the worksheet contains three items, including the calculation item Sales Target. When you calculate a total for the Sales Target item, you want to sum the values in the column. In other words, the intended total value for the Sales Target item is 730 (210+310+210).

Note: If you used SUM in this example, you would apply the calculation to the total for the Sales column. This would result in the unintended total value 710 (700+10).

About migrating workbook totals to OracleAS Discoverer

If you migrate workbooks containing totals from Discoverer 4*i* to OracleAS Discoverer, you might want to:

- check that the total values are consistent with how total values were calculated in Discoverer 4*i*
- where necessary, change totals in workbooks from SUM to Cell SUM or from Cell SUM to SUM

How to display or hide totals

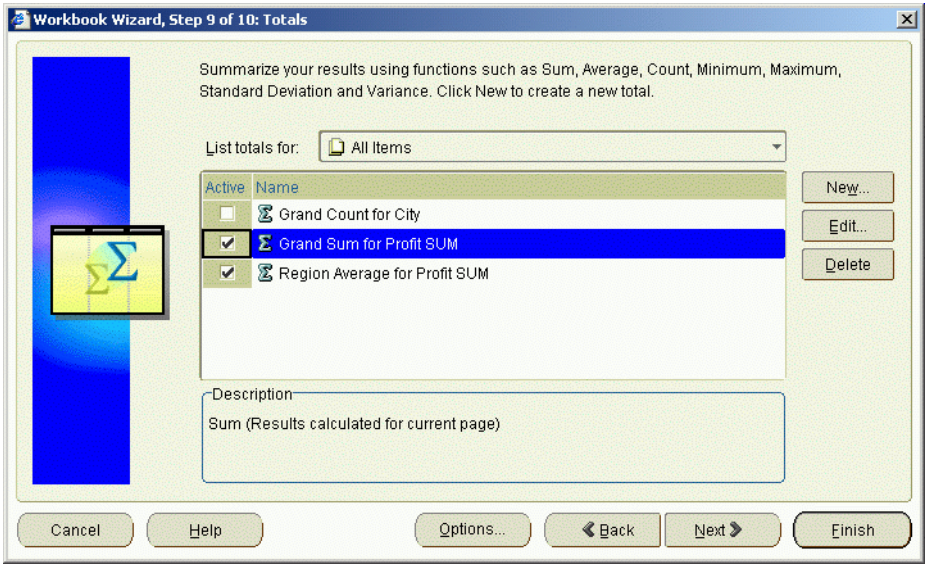
If a worksheet contains totals, you can display or hide the totals, as follows:

- You display totals on a worksheet when you want to use them to analyze worksheet data.

- You hide totals on a worksheet when you do not need to use them to analyze worksheet data.

To display or hide totals:

1. Display the worksheet that you want to analyze.
2. Choose Tools | Totals to display the "Edit Worksheet dialog: Totals tab".



The "Edit Worksheet dialog: Totals tab" lists totals available to the worksheet. The check box beside each item indicates whether it is displayed on the worksheet. Only selected totals are currently displayed on the worksheet.

3. Use the **View Totals for** drop down list to change which totals you display in the list below.

   For example, choose **Active Only** to display totals currently displayed on the worksheet.

4. To display or hide totals:
   - Select the check box next to each total that you want to display.
   - Clear the check box next to each total that you want to hide.

Hint: To help you decide which totals to display, use the **Description** field. The **Description** field shows any additional information that exists about the currently highlighted total.

5. Click OK to close the Totals tab and display the worksheet.

Discoverer refreshes the worksheet according to the options selected.

Notes

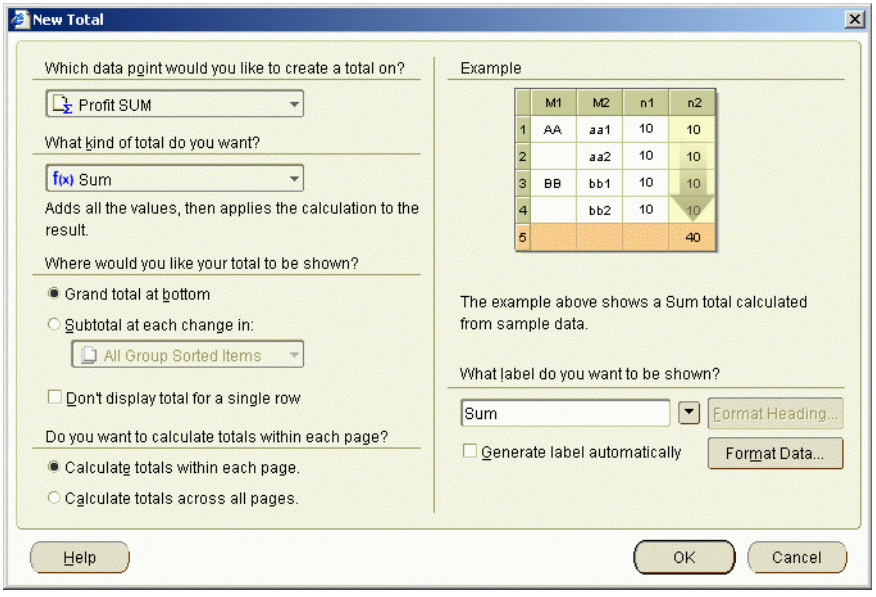
- To remove a total from the worksheet permanently, you delete the total (for more information, see "How to delete totals").

How to create totals

You create totals to analyze a worksheet in a new way. For example, to calculate a sum for a list of sales figures, or to find the average of a list of profit figures.

To create a total on a table worksheet or crosstab worksheet:

1. Choose Tools | Totals to display the "Edit Worksheet dialog: Totals tab".
2. Click the New button to display the New Totals dialog (see "New Total dialog").



3. Under **Which data point would you like to create a total on?**, select the item that you want to summarize from the drop down list.

   Note: You can also create totals for all numeric items on the worksheet by selecting **All Data Points** from the drop-down list.

4. Under **What kind of total do you want?**, select a total type from the drop down list.

   For example, choose Sum to add the values, or choose Average to calculate a mean.

5. Under **Where would you like your total to be shown?**, choose where you want to display the total.

   For example, select the **Grand total at bottom** radio button to calculate a grand total for a column and place it after the last row of the table.

   Note: Positioning options are different depending on the type of worksheet, as follows:

   - on table worksheets, you can position the total at the bottom of the worksheet
   - on crosstab worksheets, you can position the total at the bottom of the worksheet or on the right of a worksheet

6. If you select the **Subtotal at each change in** radio button, select the item on which to group the data from the drop down list.

   For example, if you sort the data by region you might want to see profits by region. If so, select region as the data item and Discoverer will display the total profit for each region on a separate line.

7. Under **What label do you want to be shown?**, do one of the following:

   - type in a label for the total
   - use the drop down list to insert variable values into the label.

   Note: Select the **Generate label automatically?** check box if you want Discoverer to generate a label for you.

8. Click OK to save the details and close the dialog.

   The new total appears in the Totals dialog and is turned on ready to be applied to the data.

9. Click OK to close the Totals dialog and return to the worksheet.

Discoverer calculates the total and displays it on the worksheet.

Notes

- You can change the format of totals on a worksheet using Sheet | Format to display the "Edit Worksheet dialog: Format tab". Then, select the total from the item list and choose Format Heading or Format Data.

How to edit totals

You edit totals when you want to change the way that they behave. For example, to change where a total is displayed on the worksheet.

To edit a total:

1. Choose Tools | Totals to display the "Edit Worksheet dialog: Totals tab".
2. Select the total that you want to edit from the totals list.
3. Click Edit to display the Edit Totals dialog (see "Edit Total dialog").
4. Edit the total details as required.
5. Click OK to save the details and close the Edit Total dialog.
6. Click OK to close the "Edit Worksheet dialog: Totals tab" and return to the worksheet.

The total is updated as specified.

Notes

- You can change the format of totals on a worksheet using Sheet | Format to display the "Edit Worksheet dialog: Format tab". Then, select the total from the item list and choose Format Heading or Format Data.

How to delete totals

You delete totals when you no longer want to use them, and want to remove them permanently from a worksheet. For example, you might have created a temporary total to produce an ad hoc report and now want to remove this total from the worksheet.

Note: If you want to remove the total from the worksheet without deleting it permanently, you can hide the total (see "How to display or hide totals").

To delete a total:

1. Choose Tools | Totals to display the "Edit Worksheet dialog: Totals tab".
2. Select the total that you want to delete from the Totals list.
3. Click Delete.

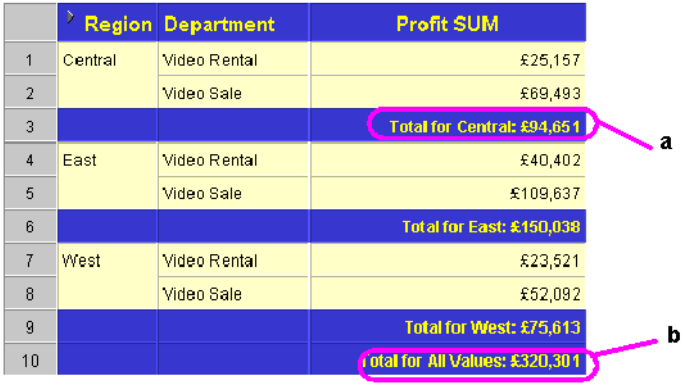
   The total that you selected is removed from the Totals list.
4. Click OK to close the Totals dialog and return to the worksheet.

Discoverer removes the total that you deleted from the worksheet.

Examples of totals

Example 1: In this example, the worksheet contains profit values for regions. You want to display a sub-total for each region, and a grand total for all regions.

Figure 11–4 Displaying a total on a table worksheet



	Region	Department	Profit SUM
1	Central	Video Rental	£25,157
2		Video Sale	£69,493
3			Total for Central: £94,651
4	East	Video Rental	£40,402
5		Video Sale	£109,637
6			Total for East: £150,038
7	West	Video Rental	£23,521
8		Video Sale	£52,092
9			Total for West: £75,613
10			Total for All Values: £320,301

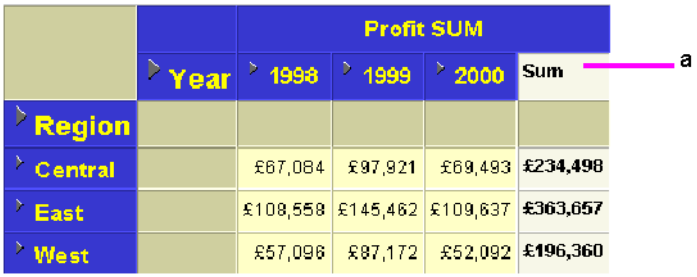
Key to figure:

a. a sub-total for each region (Total for Central: £94,651)

b. a grand total for all regions (Total for All Values: £320,301)

Example 2: In this example, a crosstab worksheet contains profit values for regions in different years. You want to display a profit total of all three years for each region.

Figure 11–5 Displaying a total on a crosstab worksheet

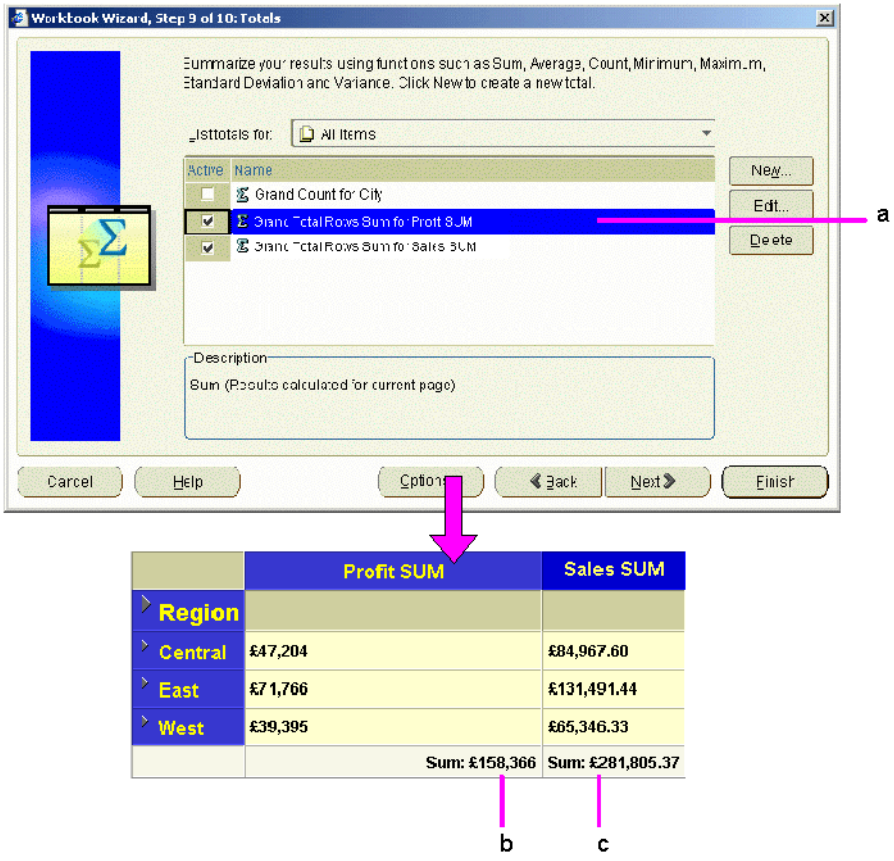


Key to figure:

a. A total item named 'Sum' on rows, which calculates a total for each Region. For example, the total for the Central region is $234,498.

Example 3: In this example, the worksheet contains profit and sales values for each quarter in the Central region. You want to display a total profit figure and a total sales figure.

Figure 11–6 Displaying two totals on a crosstab worksheet



Key to figure:

a. Two totals are selected for display, as follows:

- the **Grand Total Rows Sum for Profit SUM** total adds the Profit SUM column

- the **Grand Total Rows Sum for Sales SUM** total adds the Sales SUM column

b. The **Grand Total Rows Sum for Profit SUM** total on the crosstab worksheet.

c. The **Grand Total Rows Sum for Sales SUM** total on the crosstab worksheet.

Notice that the two totals are displayed on the same row. When a crosstab has multiple totals displayed, Discoverer automatically puts them on the same row.

12

Using percentages

Using percentages

This chapter explains how to use Discoverer percentages to answer typical business questions. For example, what is the sales total for January as a percentage of the annual sales total? This chapter contains the following topics:

What are percentages?

Percentages are worksheet items that enable you to quickly and easily calculate percentages of rows and columns. For example, to calculate monthly profit figures as a percentage of the annual profit figure.

The figure below shows a worksheet containing a percentage item called 'Percentage of annual profit'. From this column you can see that the Video Rental department in the Central region contributed 8% of the annual profit total (i.e. $25,157).

Figure 12–1 A Discoverer worksheet with a percentage item (Percentage of annual profit)

	Region	Department	Profit SUM	Percentage of annual profit
1	Central	Video Rental	$25,157	8%
2		Video Sale	$69,493	22%
3	East	Video Rental	$40,402	13%
4		Video Sale	$109,637	34%
5	West	Video Rental	$23,521	7%
6		Video Sale	$52,092	16%

Notes

- You can also use Discoverer totals or calculations to calculate percentages (for more information, see "How to create totals" and "How to create calculations").
- When you have defined percentages, you can use them in worksheets just like other items. For example, you can display or hide percentages on worksheets.

How to display or hide percentages

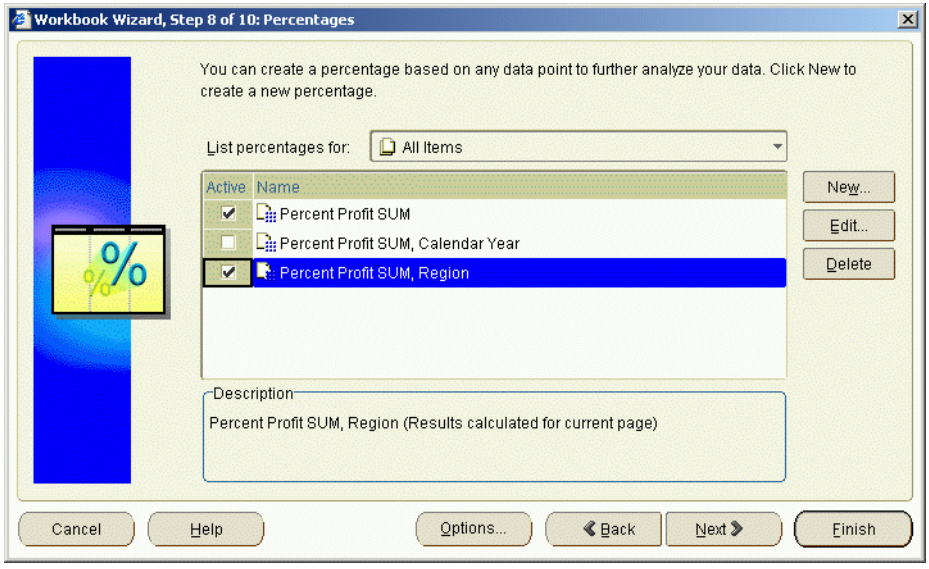
If a worksheet contains existing percentages (e.g. percentages created by other Discoverer users, or created by the Discoverer manager) you can display or hide the percentages on the worksheet.

You display or hide the percentages as follows:

- display percentages on a worksheet to use them to analyze worksheet data
- hide percentages on a worksheet to not use them to analyze worksheet data

To display or hide a percentage:

1. Choose Tools | Percentages to display the "Edit Worksheet dialog: Percentages tab".



The Percentages tab shows percentages available to the worksheet. The check box beside each item indicates whether it is displayed on the worksheet. Only selected percentages are currently displayed on the worksheet.

2. Use the **List percentages for** drop down list to change which percentages you display in the list below.

   For example, choose the Active Only option to display percentages currently displayed on the worksheet.

3. To display or hide percentages:

   - Select the check box next to each percentage that you want to display.
   - Clear the check box next to each percentage that you want to hide.

   Hint: To help you decide which percentages to display, use the **Description** field. The **Description** field shows any additional information that exists about the currently highlighted percentage.

4. Click OK to close the Percentages tab and return to the worksheet.

Discoverer refreshes the worksheet according to the options selected.

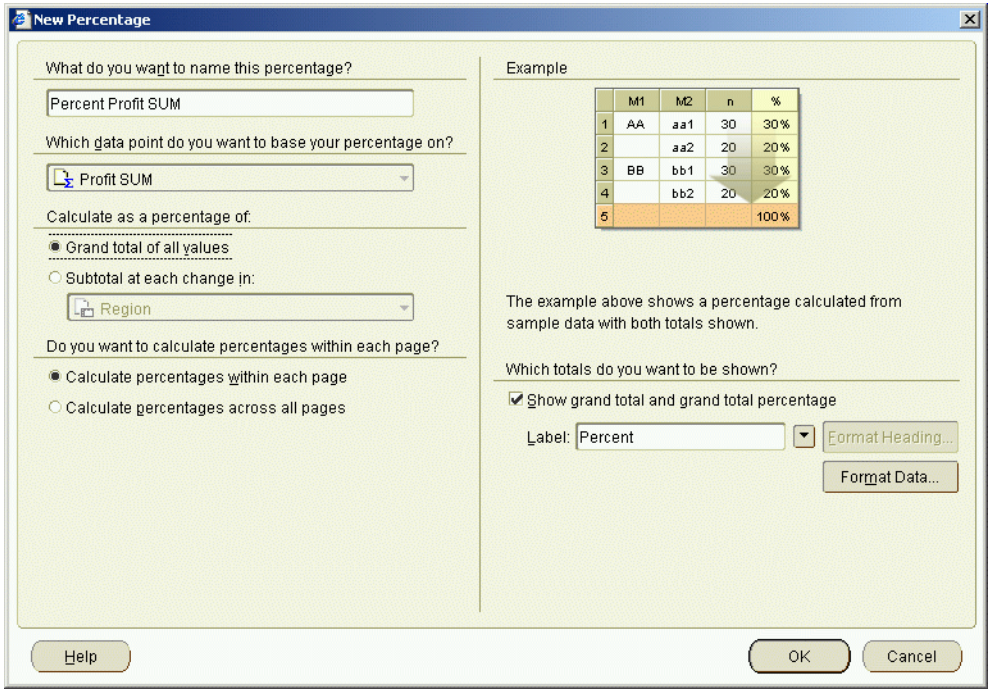
How to create percentages

You create percentage items to analyze a worksheet in a new way. For example, you might want to display monthly sales figures as a percentage of the annual sales figures.

Worksheets can also contain percentages created by other Discoverer users, or created by the Discoverer manager.

To create a percentage:

1. Choose Tools | Percentages to display the "Edit Worksheet dialog: Percentages tab".
2. Click New to display the "New Percentage dialog".



Discoverer creates a default percentage name for you based on the first numeric item on the worksheet (i.e. sorted alphabetically) prefixed with 'Percent'. For example, 'Percent Profit SUM'.

3. (optional) If you want to change the default name of the new percentage, enter the name in the **What do you want to name this percentage?** field.
4. Use the **Which data point do you want to base your percentage on?** drop down list to specify which item to create a percentage for.

   The drop down list displays numeric items currently displayed on the worksheet. If there is only one numeric item on the worksheet, this item is selected by default.
5. Use the **Calculate as a percentage of** radio buttons to choose where to display the percentage, as follows:

   - Select the **Grand total of all values** radio button to calculate the values as a percentage of the whole column.
   - Select the **Subtotal at each change in** radio button, then choose the item on which to group the data from the drop down list below.

     For example, if the worksheet data is grouped by region, select region here to calculate a percentage sub-total for each region.
6. Use the **Do you want to calculate percentages within each page?** radio buttons to choose whether to calculate percentages for each page, or for all pages.
7. Use the **Which totals do you want to be shown?** check boxes to specify how you display grand totals and subtotals.

   The options available depend on whether you have selected the **Grand total of all values** radio button, or the **Subtotal at each change in** radio button.

   - (optional) If you selected the **Grand total of all values** radio button, select the **Show grand total and grand total percentage** check box to calculate total values at the bottom of the worksheet.

     You can also specify a label for the total, and click Format Heading and Format Data to specify how it looks on the worksheet.
   - (optional) If you selected the **Subtotal at each change in** radio button, select the **Show subtotal and subtotal percentage** check box to calculate subtotal values for each data sub-group.
   - (optional) If you selected the **Subtotal at each change in** radio button, select the **Show the percentage of the grand total for each subtotal** option to display the sub-group total as a percentage of the total value for all groups.
8. Click OK to save the details and display the Percentages dialog.

9. Click OK to close the Percentages dialog and return to the worksheet.

Discoverer calculates the percentages and displays them on the worksheet.

Notes

- If you use the **Show the percentage of the grand total for each subtotal** option, the grand total value includes all items displayed on the worksheet and also items in the page items area (if any). In other words, the subtotal percentages might not add up to 100% unless you display all page items on the worksheet.

How to edit percentages

You edit percentages to change the way that they behave. For example, you might want to change a grand total percentage to a subtotal and grand total percentage.

To edit a percentage:

1. Choose Tools | Percentages to display the "Edit Worksheet dialog: Percentages tab".
2. Select the percentage that you want to edit from list of percentages.
3. Click Edit to display the "Edit Percentage dialog".
4. Edit the percentage details as required.
5. Click OK to save the changes and close the Edit Percentage dialog.
6. Click OK to close the Edit Percentage dialog and display the worksheet.

   Discoverer refreshes the worksheet to reflect changes to the percentage.

How to delete percentages

You delete a percentage when you no longer want to use it, and want to permanently remove it from a workbook. For example, you might have created a temporary percentage to produce an ad hoc report and now want to remove the percentage from the workbook.

To delete a percentage:

1. Choose Tools | Percentages to display the "Edit Worksheet dialog: Percentages tab".
2. Select the percentage that you want to delete from the list of percentages.

3. Click Delete.

   The percentage that you deleted is removed from the list of percentages.

4. Click OK to close the Percentages dialog and display the worksheet.

If the deleted percentage was previously displayed on the worksheet, Discoverer removes the percentage information from the worksheet display pane.

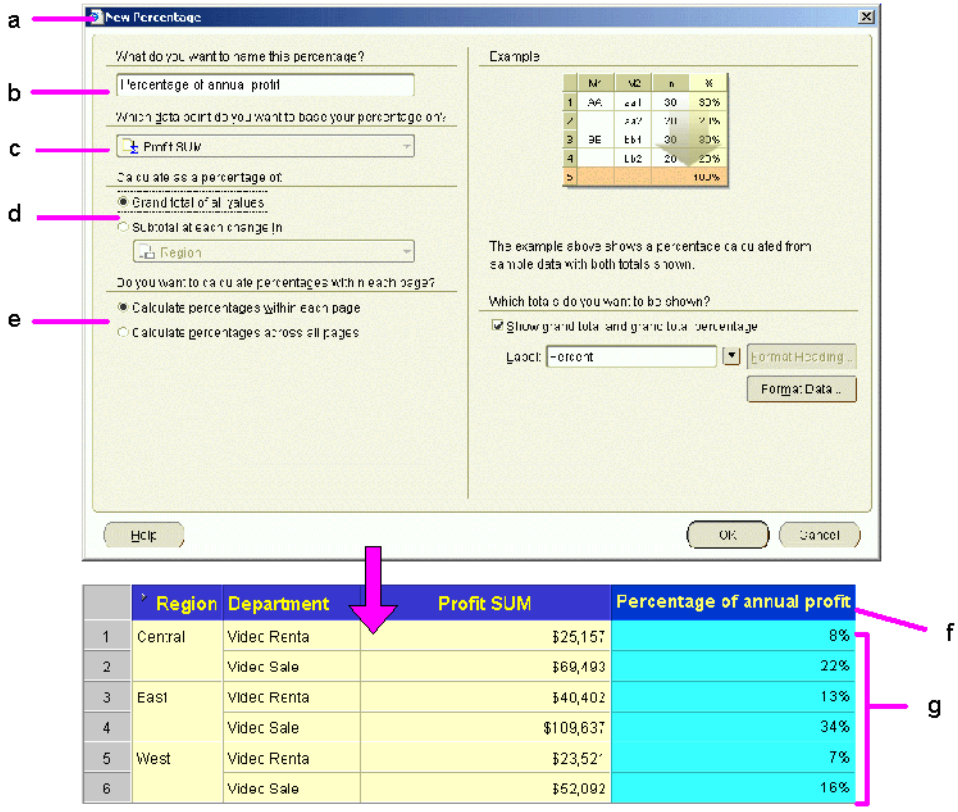
Notes

- To remove a percentage from the worksheet without deleting the percentage permanently, you can hide the percentage (for more information, see "How to display or hide percentages").
- If the deleted percentage was used to sort a worksheet, the sorting is removed and the items revert to the default order.

Example of percentages

Example 1: This example shows how to use the New Percentage dialog to create a new percentage, and how the percentage is displayed on a worksheet. In the figure below, you calculate the profit sum for each region and department as a percentage of total profit.

Figure 12–2 A Discoverer percentage on a table worksheet



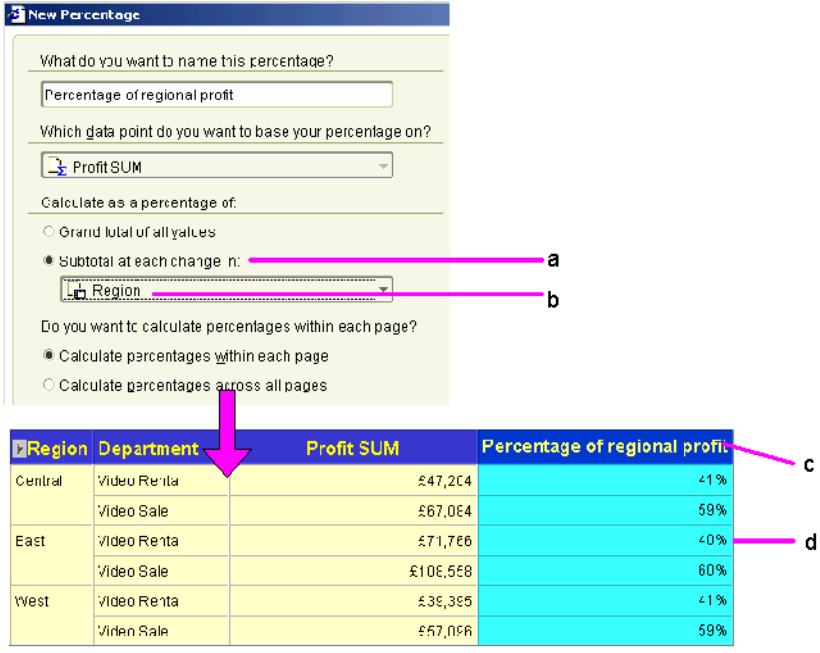
Key to figure:

- **a.** The New Percentage dialog.
- **b.** The name of the percentage item.
- **c.** The item (column) on which the percentage is based.
- **d.** The percentage type.
- **e.** The scope of the percentage item. You can create percentages for the each page item, or all page items.
- **f.** The percentage item (Percentage of annual profit) as it appears on the worksheet.

g. The percentage values calculated by Discoverer. For example, using the new percentage item you can see that the Video Rental department in the Central region generated 12% of total profit (i.e. $47,204).

Example 2: This example shows how to use the Edit Percentage dialog to produce percentage subtotals. In the figure below, you calculate a subtotal percentage value for each region. In other words, what percentage of profit does each department contribute to the region total.

Figure 12–3 A percentage based on a grouped total



Region	Department	Profit SUM	Percentage of regional profit
Central	Video Rental	£47,204	41%
	Video Sale	£67,084	59%
East	Video Rental	£71,766	40%
	Video Sale	£108,558	60%
West	Video Rental	£38,385	41%
	Video Sale	£57,096	59%

Key to figure:

a. The **Subtotal at each change in** option calculates the value as a percentage of all values in a sub-group. The groups are defined by a change in value in this item.

b. In this case, the value Region is selected, which calculates a percentage sub-total for each region.

c. The percentage item (Percentage of regional profit) as it appears on the worksheet.

d. For example, the Video Rental department in the Central region contributes 41% of the total profit for the Central region (i.e. $47,204). Notice that the percentages for each region add up to 100%.

13

Sorting data

Sorting data

This chapter explains how to use Discoverer's sorting capabilities such as alphabetical, numeric, and group sorting. This section contains the following topics:

What is sorting?

Sorting is the process of arranging data into meaningful order so that you can analyze it more effectively. For example, you might want to order sales data by calendar month so that you can produce a graph of sales performance. You can use Discoverer to sort data as follows:

- sort text data into alphabetical order
- sort numeric data into numerical order

- group sort data to many levels, for example, you can sort on City within Month within Year

Sorting worksheet data also makes it easier to analyze. For example, you might want to sort sales data from most profitable sales to least profitable sales to show the relative position of your company's best selling products.

Discoverer offers great flexibility when sorting data within data. You can do this to many different levels. For example, you can sort by City within Region.

Note: Discoverer sorts data according to the alphabetical or numeric sequence most appropriate for the local language. For more information about choosing a language when you start Discoverer, contact the Discoverer manager.

About sorting on table worksheets

On table worksheets, you can sort columns individually or in groups. For example, the figure below shows a worksheet sorted on one item (Region) in the order low to high (i.e. A to Z).

Figure 13–1 A table worksheet sorted on Region

	Region	Department	Profit SUM
1	Central	Video Rental	$47,204
2		Video Sale	$67,084
3	East	Video Rental	$71,766
4		Video Sale	$108,558
5	West	Video Rental	$39,395
6		Video Sale	$57,096

The figure below shows a table worksheet sorted on two items, City within Region in the order low to high (i.e. A to Z).

Figure 13–2 A table worksheet sorted on City within Region

	Region	City	Department	Profit SUM
1	Central	Chicago	Video Rental	$3,333
2		Chicago	Video Sale	$5,354
3		Cincinnati	Video Rental	$12,587
4		Cincinnati	Video Sale	$18,742
5		Dallas	Video Rental	$3,547
6		Dallas	Video Sale	$4,774
7		Louisville	Video Rental	$12,664
8		Louisville	Video Sale	$17,103
9		Minneapolis	Video Rental	$3,562
10		Minneapolis	Video Sale	$6,030
11		Nashville	Video Sale	$3,571
12		Nashville	Video Rental	$3,884
13		St. Louis	Video Rental	$7,627
14		St. Louis	Video Sale	$11,511

For more examples on sorting in Discoverer, see "Examples of sorting".

About sorting on crosstab worksheets

On crosstab worksheets, you can sort by either of the following:

- by columns (on the vertical axis)
- by rows (on the horizontal axis)

By default, Discoverer sorts data on a crosstab automatically as follows:

- text data is sorted alphabetically from A-Z (language dependent)
- numeric data is sorted from lowest to highest

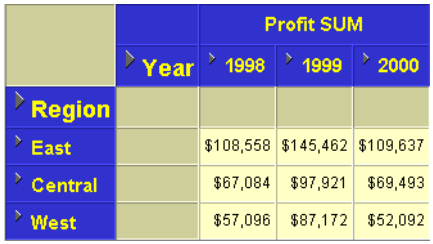
Because the location of data on a crosstab worksheet determines the relationship of one data item to another, sorting on a crosstab worksheet is different to sorting on a table worksheet. When you sort on a crosstab worksheet, you typically want to maintain data relationships while rearranging the data.

Whichever way you sort (i.e. by column or row) Discoverer automatically maintains data relationships.

Note: On crosstab worksheets, you can remove additional sorts that you have added to the worksheet but you cannot remove the original default sort.

The figure below shows a crosstab worksheet sorted on Profit SUM in the order high to low (i.e. A to Z).

Figure 13–3 A crosstab worksheet sorted on Profit SUM (high to low)



		Profit SUM		
	Year	1998	1999	2000
Region				
East		$108,558	$145,462	$109,637
Central		$67,084	$97,921	$69,493
West		$57,096	$87,172	$52,092

Note: In the example above, the worksheet is sorted on Region by default. This default sort cannot be removed.

For more examples on sorting in Discoverer, see "Examples of sorting".

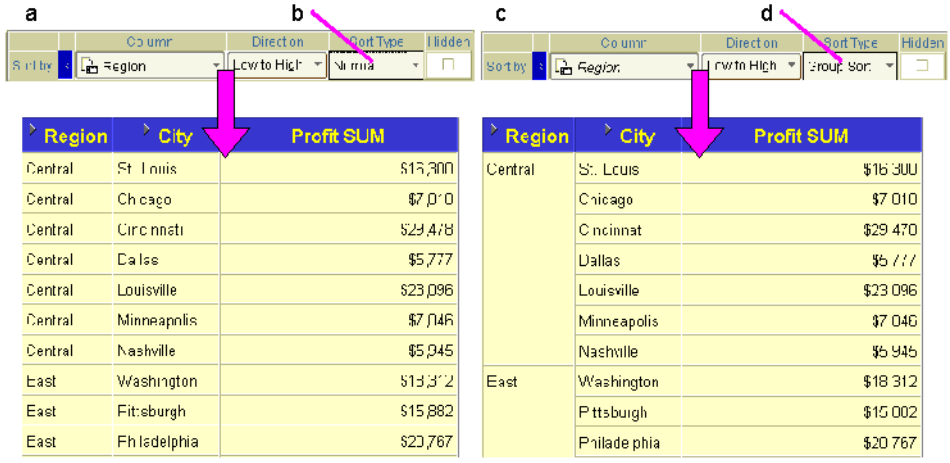
What is group sorting?

Group sorting is a facility available on table worksheets that removes repeated values to make reports easier to analyze. Group sorting has the following effects:

- The group name is displayed only once at the start of a group.
- Repeated group name values are removed from the worksheet.
- Group sorts take precedence over non-group sorts. If you have more than one item in the sort list, the item with the Group Sort option selected automatically becomes the first item in the sort list.

In figure below, the worksheet on the left has group sort on Region turned off (i.e. the **Sort Type** setting is Normal). The worksheet on the right has the group sort on Region turned on (i.e. the **Sort Type** setting is Group Sort). Notice that the repeated regions are removed when group sort is turned on.

Figure 13–4 Using the Group Sort option



Key to figure:

a. The Sort dialog and worksheet before group sort is turned on.

b. The **Group** field set to none.

c. The Sort dialog and worksheet after group sort is turned on.

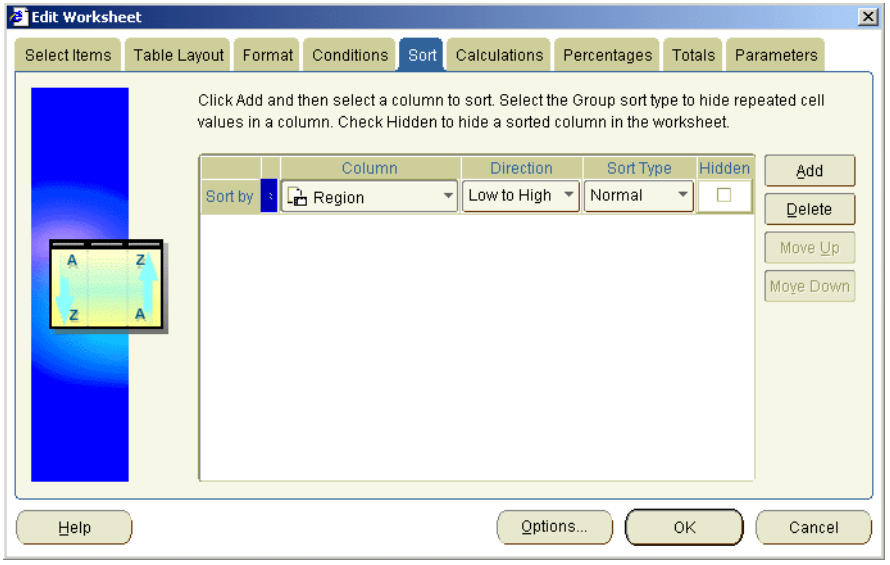
d. The **Group** field set to Group Sort.

How to sort data on a table worksheet

You sort worksheet data to arrange it for more effective analysis. For example, you might want to sort a list of sales figures numerically so that you analyze the relative standing of sales people.

To sort data on a table worksheet:

1. Display the worksheet that you want to sort.
2. Choose Tools | Sort to display the "Edit Worksheet dialog: Sort tab".



The Sort Table dialog displays current sort options in a sort list.

3. Click Add to add a new row to the sort list and specify sorting options as required.

   Hint: You can also:

   - remove a sort item by selecting an item in the sort list and clicking Delete
   - rearrange the precedence of sort items by selecting an item in the sort list and clicking either Move Up or Move Down

4. Click OK to save the details and close the Sort dialog.

   Discoverer refreshes the worksheet according to the sort options that you select.

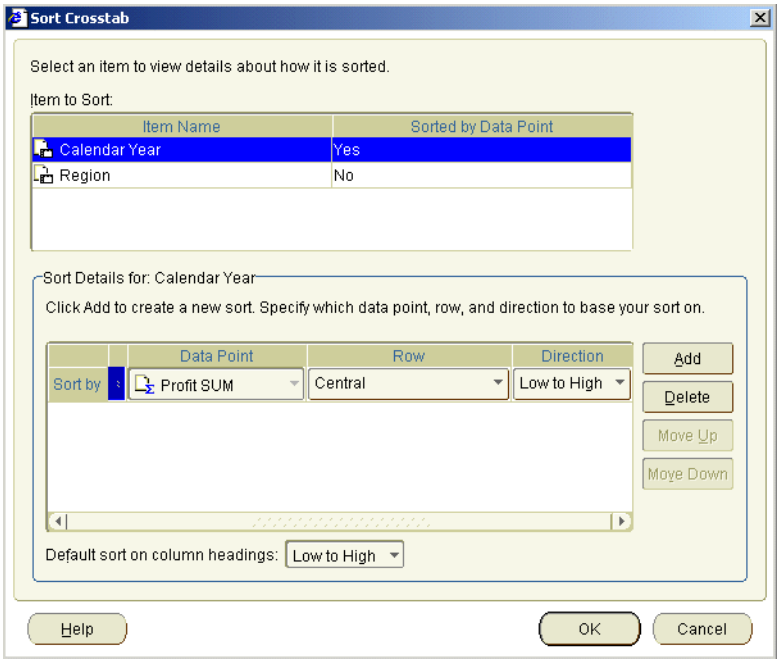
How to sort data on a crosstab worksheet

You sort a crosstab when you want to change the default sort order that is automatically applied to crosstab worksheets (for more information, see "About sorting on crosstab worksheets").

To sort data on a crosstab worksheet:

1. Display the worksheet that you want to sort.

2. Choose Tools | Sort to display the "Sort Crosstab dialog".



3. Select the item that you want to sort from the **Item to Sort** list.

   The **Sort Details for: <*worksheet item*>** table below shows which data point items are used to sort the selected item.

4. Click Add to add a new row to the **Sort Details for** table and specify sorting options as required.

   Hint: You can also:

   - remove a sort item by selecting an item in the **Sort Details for** table and clicking Delete
   - rearrange the precedence of sort items by selecting an item in the **Sort Details for** table and clicking either Move Up or Move Down

5. Click OK to save the details and close the Sort dialog.

   Discoverer refreshes the worksheet according to the sort options that you select.

How to change how worksheet data is sorted

You can change the sort order of worksheet data at any time. For example, to reverse the sort order, hide the sorted column, or change a sort into a group sort.

To edit a sort:

1. Display the worksheet that you want to sort.
2. Choose Tools | Sort to display the Sort dialog (see "Edit Worksheet dialog: Sort tab" or "Sort Crosstab dialog".

   The Sort dialog displays current sort options in a sort list.
3. Edit the sort list as required.
4. Click OK to save the details and close the Sort dialog.

   Discoverer refreshes the worksheet according to the sort options that you select.

How to remove sorting from a worksheet

When you no longer want to sort a worksheet, you can remove the sort(s) from the worksheet. For example, you might have created a temporary sort to produce an ad hoc report that you now want to remove.

Table worksheets and crosstab worksheets behave differently, as follows:

- On table worksheets, you can remove all sorts to display data in the order in which it is stored in the database.
- On crosstab worksheets, you can remove additional sorts that you have added to the worksheet but you cannot remove the original default sort.

Note: Crosstab worksheets are group sorted automatically (for more information, see "About sorting on crosstab worksheets").

To delete a sort:

1. Display the sorted worksheet that you want to edit.
2. Choose Tools | Sort to display the Sort dialog (see "Edit Worksheet dialog: Sort tab" or "Sort Crosstab dialog".

   The Sort dialog displays current sort options in a sort list.
3. Select the item that you want to remove.
4. Click Delete to remove it from the sort list.

Note: On crosstab worksheets, you cannot remove the original default sort (see "About sorting on crosstab worksheets").

5. Click OK to save the details and close the Sort dialog.

   Discoverer refreshes the worksheet according to the sort options that you select.

Examples of sorting

Example 1: This example shows how to use the Sort Crosstab dialog to sort a crosstab worksheet horizontally. In this example, you want to sort data on Profit SUM down the column for the 1999 year. In the figure below, Region (on the left axis) is selected in the **Item to Sort** list. Profit SUM is selected in the **Data Point** list and 1999 is selected in the **Column** list.

Figure 13–5 A crosstab worksheet sorted vertically

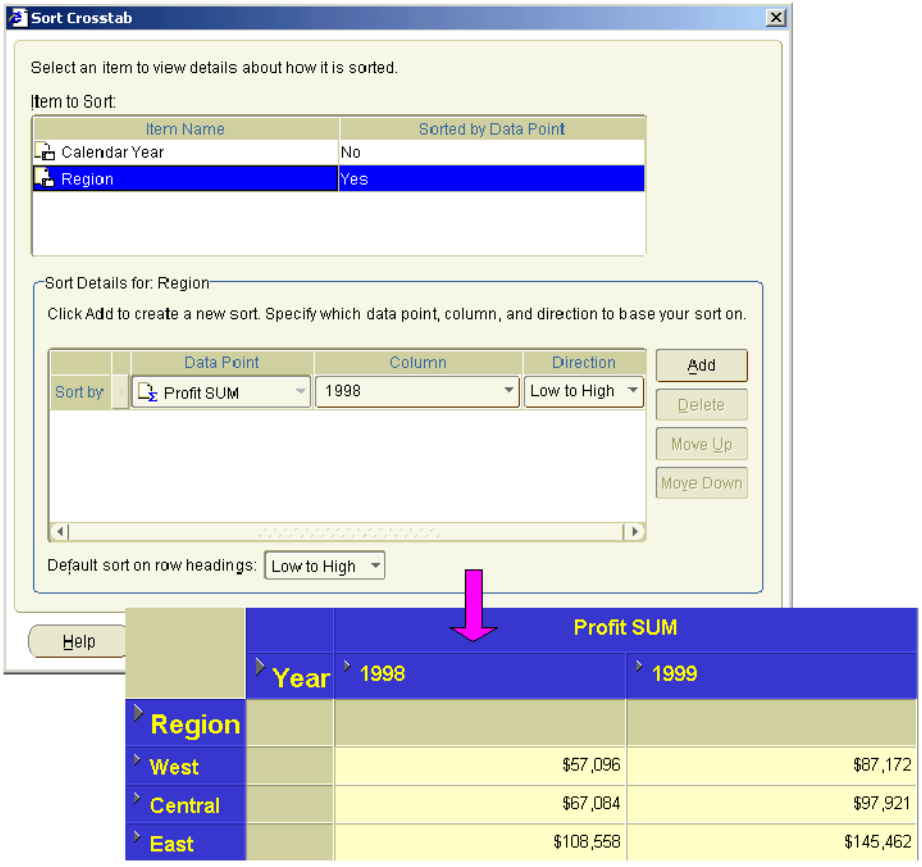
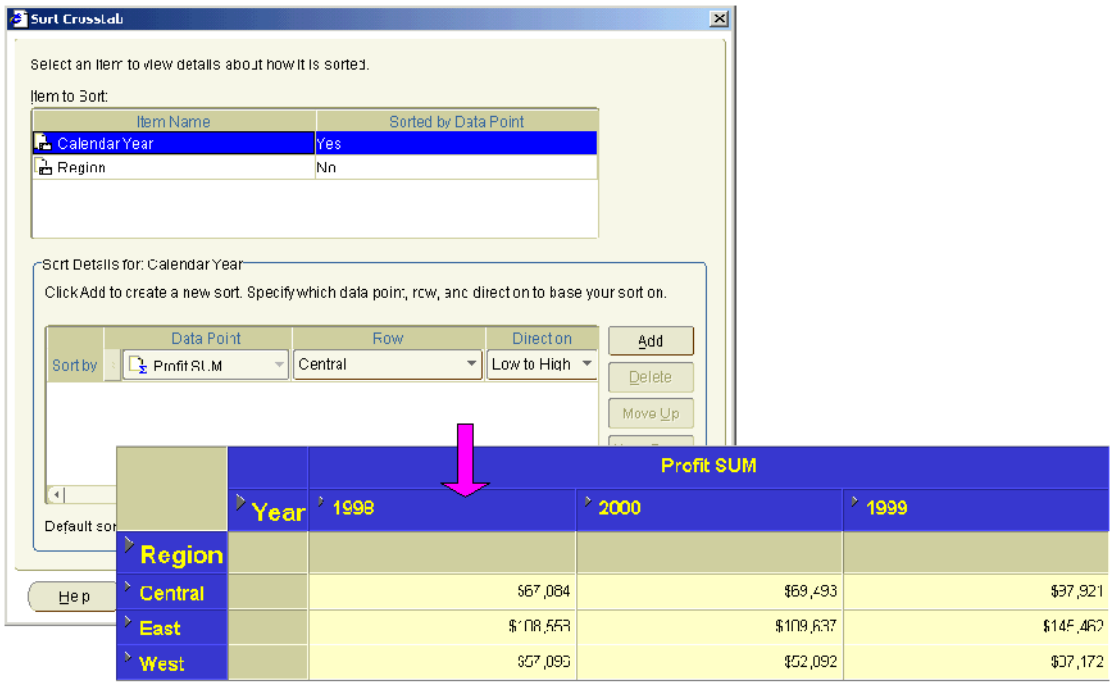


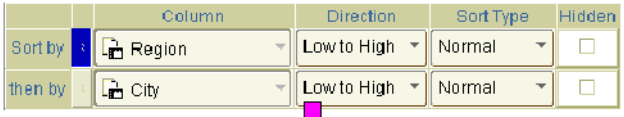
Figure 13–6 A crosstab worksheet sorted horizontally

Example 2: This example shows how to use the Sort Crosstab dialog to sort a crosstab worksheet horizontally. In this example, you want to sort data on Profit SUM along the row for the Central region. In the figure below, Calendar Year (on the top axis) is selected in the **Item to Sort** list. Profit SUM is selected in the **Data Point** list and Central is selected in the **Row** list.



Example 3: This example shows how to use the Sort dialog to sort on one item within another item. In the figure below, you want to sort on City within Region. To specify Region as the primary sort, you place Region in the **Sort by** row of the sort table. To specify City as the secondary sort, you place City in the **Then by** row of the sort table. You can add further levels of sorting as required.

Figure 13–7 A table worksheet with two levels of sorting



Region	City	Profit SUM
Central	Chicago	$7,010
Central	Cincinnati	$29,478
Central	Dallas	$5,777
Central	Louisville	$23,096
Central	Minneapolis	$7,046
Central	Nashville	$5,945
Central	St. Louis	$16,300
East	Atlanta	$8,940
East	Boston	$14,050
East	Miami	$4,347

14

Using calculations

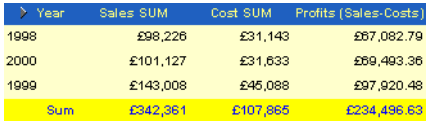
Using calculations

This chapter explains how to use Discoverer calculations to answer typical business questions. For example, what are my top three selling products? This chapter contains the following topics:

What are calculations?

Calculations are worksheet items based on formulas or expressions (e.g. mathematical formulas, or text handling functions). You use calculations to provide additional analysis to worksheets. In the figure below, the worksheet contains the calculation 'Profit (Sales-Costs)', which calculates the value of sales (i.e. the Sales SUM item) minus the value of costs (i.e. the Cost SUM item).

Figure 14–1 A Discoverer worksheet containing a calculation (Profit (Sales-Costs))



Year	Sales SUM	Cost SUM	Profits (Sales-Costs)
1998	£98,226	£31,143	£67,082.79
2000	£101,127	£31,633	£69,493.36
1999	£143,008	£45,088	£97,920.48
Sum	£342,361	£107,865	£234,496.63

For example:

- to calculate a 25% increase in sales, you might create a calculation item with the following formula:

  ```
  Sales SUM * 1.25
  ```

- to convert the City item into upper-case letters, you might create a calculation item with the following formula:

  ```
  UPPER(City)
  ```

- to calculate the league table position (i.e. using a Rank function) of values in descending order, you might create a calculation item with the following formula:

  ```
  RANK() OVER(ORDER BY Sales SUM DESC)
  ```

  Advanced functions such as Rank are known as analytic functions. For more information about analytic functions, see "What are analytic functions?".

  Note: Discoverer provides easy-to-use templates for the most popular analytic functions (for more information, see "What analytic function templates are available in Discoverer").

When you have defined calculations, you can use them in worksheets just like other worksheet items. For example, you can:

- pivot calculations to the page axis
- include calculations in condition statements to filter worksheet data
- display or hide calculations on worksheets
- reuse calculations within other calculations

Notes

- Oracle Discoverer supports all functions that are supported by the version of the Oracle database being used. For example, analytic functions are supported by Oracle 8.1.7 (or later) Enterprise Edition databases. In other words, you have

access to hundreds of pre-defined functions that you can use to support all of your business intelligence requirements.

- You might want to create a calculation to concatenate two (or more) items. To concatenate items, insert ||CHR(10)|| between items. For example, to create a new worksheet column containing the Calendar Year item and the Department item, create a calculation as follows:

  Calendar Year||CHR(10)||Department

  Worksheets containing this item will display Calendar Year and Department in a single column. For example:

  2002 Sales Department

About using calculations

Calculations can be created by the Discoverer manager or Discoverer users. When a worksheet contains calculations, you can:

- display the calculations (or turn the calculations on)
- hide the calculations (or turn the calculations off)

Calculations are displayed as new columns on worksheets. Calculations can be used in other calculations. Discoverer enables you to use a comprehensive range of pre-defined functions for use in worksheet calculations. Discoverer also provides easy-to-use templates for the most popular analytic functions (for more information, see "What analytic function templates are available in Discoverer" and "Examples of using row-based and time-based intervals").

What are analytic functions?

Analytic functions are advanced mathematical and statistical calculations that you can use to analyze data and make business decisions. For example, these functions can answer questions such as:

- what are my best selling products?
- how do current sales compare with last year's sales?
- what is the average sales transaction amount in the region with the largest number of sales transactions per year?

Note: Analytic functions are a subset of the SQL functions available in the Oracle database.

In the example below, the Rank Sales item contains an analytic function that calculates the league table position of Cities according to sales performance. Using the Rank Sales column, you can see that New York is ranked number 1 with total sales of $85,974.23.

Figure 14–2 Worksheet containing the Rank Sales calculation

Year	Region	City	Sales SUM	Rank Sales
2000	East	New York	$85,974.23	1
2000	Central	Cincinnati	$48,371.47	2
2000	West	San Francisco	$40,516.78	3
2000	West	Seattle	$37,436.28	4
2000	Central	Louisville	$36,526.55	5
2000	East	Washington	$35,569.79	6
2000	East	Philadelphia	$27,143.73	7
2000	Central	St. Louis	$23,670.97	8
2000	East	Pittsburgh	$22,961.40	9
2000	East	Atlanta	$21,577.62	10
2000	East	Boston	$20,358.90	11
2000	West	Denver	$20	

You can create analytic functions in the following ways:

- using an easy-to-use template to help you build the function (for more information, see "How to create a new calculation using an analytic function template")

  Note: Discoverer provides easy-to-use templates for the most popular analytic functions (for more information, see "What analytic function templates are available in Discoverer").

- creating a worksheet calculation and entering an analytic function as the formula text (for more information, see "How to create calculations")

What analytic function templates are available in Discoverer

Discoverer Plus provides easy-to-use templates for the most popular analytic functions. These templates enable you to perform complex business intelligence analysis quickly and easily.

Note: For examples of analytic functions created using templates, see "Examples of using row-based and time-based intervals".

Discoverer provides templates for the following types of analysis:

- Band by rank - creates a number of bands (e.g. quartiles) and places each value into one of the bands according to its league table position (for more information, see "Band by Rank dialog")
- Band by value - creates a number of bands (sometimes referred to as buckets) and places each value into one of the bands according to the value (for more information, see "Band by Value dialog")
- Difference - typically calculates the change in values across time (for more information, see "Difference dialog")
- Following value - returns the value that is a specified number of rows or a specified time period after each value (for more information, see "Following Value dialog")
- Group total - aggregates values within a group (for more information, see "Group Total dialog")
- Moving total - calculates a total for the specified number of rows or a specified time period before each value (for more information, see "Moving Total dialog")
- Percent contribution - calculates the ratio of a value to the sum of a set of values (for more information, see "Percent Contribution dialog")
- Percent difference - typically calculates the change in values across time as a percentage (for more information, see "Percent Difference dialog")
- Percent rank - calculates the relative position of a value in a group of values (for more information, see "Percent Rank dialog")
- Percent running contribution - can be used in 80-20 analysis (for more information, see "Percent Running Contribution dialog")
- Preceding value - returns the value that is a specified number of rows or a specified time period before each value (for more information, see "Preceding Value dialog")
- Rank - calculates the league table position of values (for more information, see "Rank dialog")
- Running total - calculates the total from the value at the start of the group to each value (for more information, see "Running Total dialog")

Notes

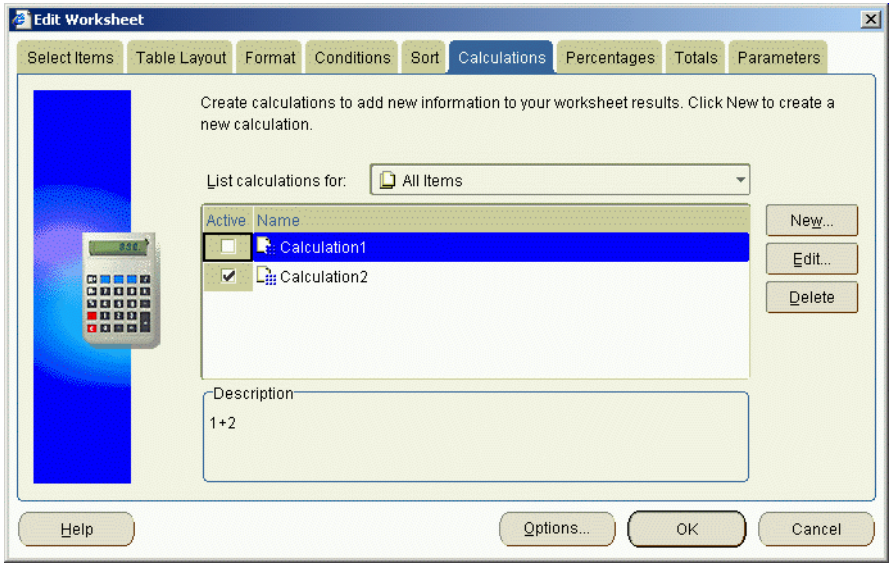
- When you use an analytic function template, you populate the **Calculation** field with the SQL statement for the analytic function formula. You can manually edit the SQL statement at any time in the **Calculation** field.
- For more information about analytic functions, see "What are analytic functions?".
- For more information about how to create analytic functions using templates, see "How to create a new calculation using an analytic function template".

How to display or hide worksheet calculations

When a worksheet contains calculations, you can display or hide the calculations. You display calculations on a worksheet when you want to use them to analyze worksheet data. You hide calculations on a worksheet when you do not need to use them to analyze worksheet data. For example, you might display a calculation when you export a worksheet.

To display or hide calculations:

1. Display the worksheet that you want to analyze.
2. Choose Tools | Calculations to display the "Edit Worksheet dialog: Calculations tab".



The "Edit Worksheet dialog: Calculations tab" shows calculations available to the worksheet. The check box beside each item indicates whether it is displayed on the worksheet.

3. Use the **View Calculations for** drop down list to change which calculations you display in the list below.

   For example, choose Active Only to display those calculations that are currently displayed on the worksheet.

4. Display or hide calculations as required, by:

   - selecting the check box next to each item that you want to display
   - clearing the check box next to each item that you want to hide

5. Click OK to close dialog and return to the worksheet.

Discoverer displays and hides the calculations that you specified.

Notes

- If you want to remove a calculation item from the worksheet permanently, delete the calculation (see "How to delete calculations").

How to create calculations

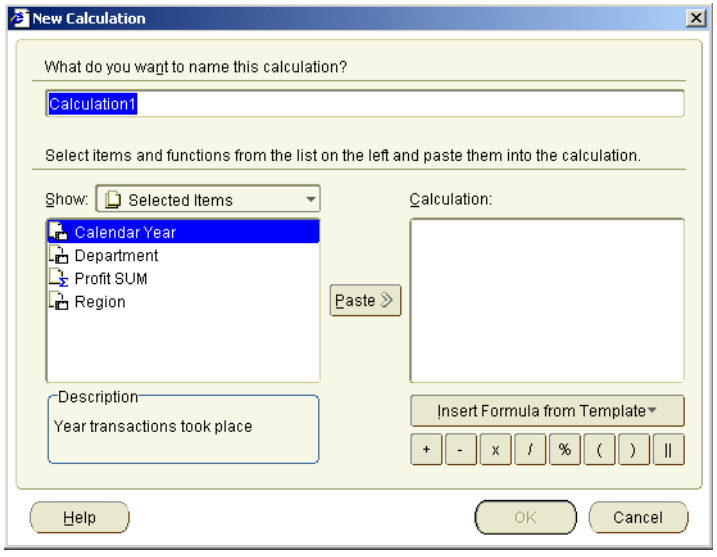
You create calculations to analyze a worksheet in a new way. For example:

- to calculate a 25% increase in sales
- to calculate the rank of sales figures

Note: Discoverer provides easy-to-use templates for the most popular analytic functions (for more information, see "What analytic function templates are available in Discoverer").

To create a calculation:

1. Open the worksheet that you want to analyze.
2. Choose Tools | Calculations to display the "Edit Worksheet dialog: Calculations tab".
3. Click New to display the "New Calculation dialog".



4. Enter a name for the calculation in the **What do you want to name this calculation?** field.

   Hint: Use a short descriptive name, which will be displayed on the worksheet.

5. Enter the calculation formula in the **Calculation** field.

If you are familiar with calculation syntax, you can type the formula in the **Calculation** field.

Note: If you type a formula in the **Calculation** field, you must prefix the formula with an equals sign (i.e. =).

If you prefer, you can build the calculation in stages using any of the following methods:

- To add an item from the business area to the calculation, choose Selected Items or Available Items from the **Show** drop down list, select an item from the item list below, then click Paste to copy the item into the **Calculation** field.
- To add a function to the calculation, choose Functions from the **Show** drop down list, select a function from the list below, then click Paste to copy the function into the **Calculation** field.
- To add existing calculations to the calculation, choose Calculations from the **Show** drop down list, select a calculation from the list below, then click Paste to copy the calculation into the **Calculation** field.
- To include a mathematical operator in the calculation, click the appropriate operator button below the **Calculation** field.

  Hint: Before pasting items in the **Calculation** field, position the cursor in the **Calculation** field to where you want to insert the item.
- To use an analytic function template to create the formula, click Insert Formula from Template to display a pop-up list of templates and choose a template (for more information about using analytic function templates, see "How to create a new calculation using an analytic function template").

Note: Calculations follow the standard Oracle calculation syntax. For a full description of this syntax, see the *Oracle9i SQL Language Reference Manual.*

6. Click OK to save the calculation and display the "Edit Worksheet dialog: Calculations tab".

   Discoverer displays the calculation that you created in the calculation list.

7. Click OK to close the dialog and display the worksheet.

   Discoverer displays the new calculation as a column on the worksheet.

Notes

- For examples of the most commonly used functions, see "Discoverer calculation examples".
- When using the **Show** drop down list to display items:
  - use the Selected option to restrict the list to items in the worksheet
  - use the Available option to display all items in the business area

  For a full list of **Show** options, see "New Calculation dialog".
- If you have copied calculation text into memory from another application (for example, an e-mail message), click inside the **Calculation** field, right click the mouse and choose Edit | Paste to copy the text into the **Calculation** field.
- If a calculation contains a syntax error, Discoverer displays an error message. You must correct syntax errors before you can save the calculation.
- For more information about adding parameters to calculations, see "About using parameters to collect dynamic user input".

How to create a new calculation using an analytic function template

Discoverer provides easy-to-use templates for the most popular analytic functions (for more information, see "What analytic function templates are available in Discoverer"). You use templates to build analytic functions that help you analyze data in powerful ways and make business decisions quickly and easily. For example, you might want to calculate the league table position (i.e. rank) of sales outlets based on sales.

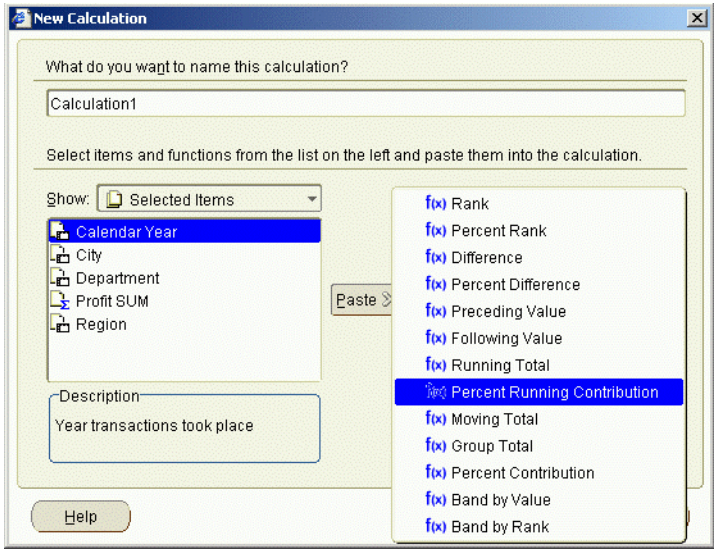
You use a template to create an analytic function formula, which is inserted into the definition of a new or existing Discoverer calculation.

To create a new calculation using an analytic function template:

1. Open the worksheet that you want to analyze.
2. Choose Tools | Calculations to display the "Edit Worksheet dialog: Calculations tab".
3. Click New to display the "New Calculation dialog".
4. Enter a name for the calculation in the **What do you want to name this calculation?** field.

   Hint: Use a short descriptive name, which will be displayed on the worksheet.

5. Click Insert Formula from Template to display a pop-up list of pre-defined templates.

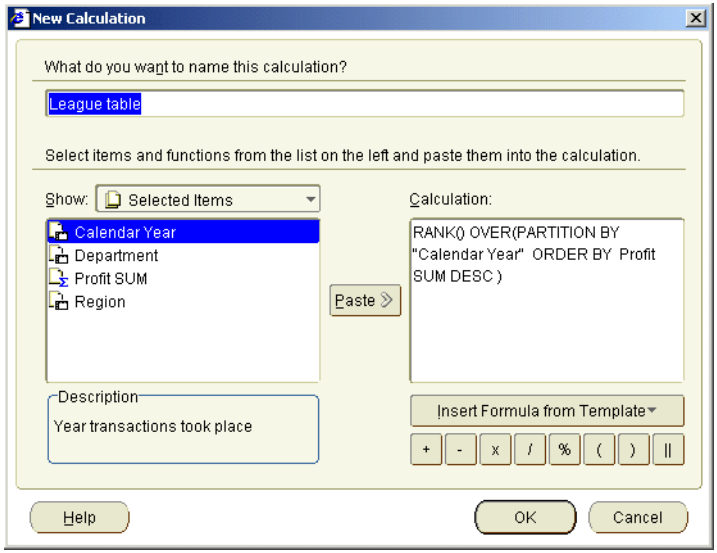


6. Choose a template from the pop-up list to display a template dialog for the selected analytic function.
7. Use the template to define the analytic function.

   For example, if you choose the Rank template, you will use the "Rank dialog" to create the formula.

   The underlying SQL statement for the analytic function formula is displayed in the **Calculation** field at the bottom of the template.
8. Click OK to save the analytic function and close the analytic function template.

   The SQL statement for the analytic function that you created is transferred to the **Calculation** field. You might want to modify the SQL statement for the analytic function (e.g. by adding more ORDER BY clauses) or by inserting another function into the **Calculation** field.



The **Calculation** field displays the underlying SQL statement for the analytic function that you defined.

Note: You can subsequently modify the calculation (e.g. to add more PARTITION BY clauses) in any of the following ways:

- by manually editing the formula in the Calculation field
- by first deleting the formula in the Calculation field, then clicking Insert Formula from Template and recreating the formula
- by clicking Insert Formula from Template and appending a new formula to the existing formula in the Calculation field

  Note: If you have more than one functions in the Calculation field, you must associate the functions (e.g. using + or -).

9. Click OK to save the calculation and close the dialog.

   Discoverer displays the calculation that you created in the calculation list.

10. Click OK to close the dialog and display the worksheet.

    Discoverer displays the new calculation as a column on the worksheet.

Notes

- For more information about analytic functions, see "What are analytic functions?" and "Examples of using row-based and time-based intervals".
- If you want to use parameter values in analytic functions to collect dynamic input, you must manually prefix the item name with ':' (i.e. colon) character into the **Calculation** field (for more information, see "About using parameters to collect dynamic user input").

  For example, you might create a Band by rank formula based on the Profit SUM item (e.g. NTILE(4) OVER (ORDER BY Profit SUM DESC). If you want end users to select the number of bands at runtime, you might create a worksheet parameter called Band number. To use the Band number in the Band by rank formula you must manually change the formula to:

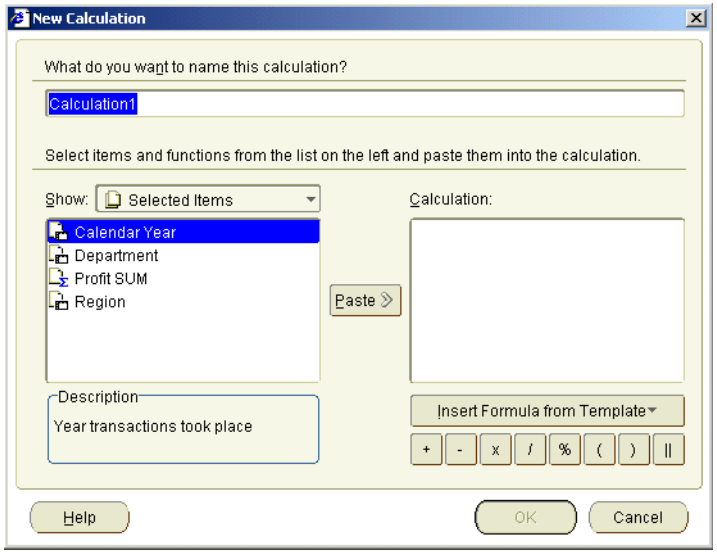
  NTILE(:Band number) OVER (ORDER BY Profit SUM DESC)
- Analytic functions follow the standard Oracle function syntax. For a full description of this syntax, see the *Oracle9i SQL Reference Manual.*

How to edit calculations

You edit calculations to change the way that they behave. For example, to change a percentage increase calculation from 25% to 30%.

To edit a calculation:

1. Open the worksheet that you want to analyze.
2. Choose Tools | Calculations to display the "Edit Worksheet dialog: Calculations tab".
3. Select the calculation that you want to edit in the calculation list.
4. Click Edit to display the "Edit Calculation dialog".



5. Change the calculation as required.

   For example:

   - change the name of the calculation
   - add or remove items, functions, or operators from the calculation text in the **Calculation** field

6. Modify the calculation (e.g. to add more PARTITION BY clauses) in any of the following ways:

   - by manually editing the formula in the Calculation field
   - by first deleting the formula in the Calculation field, then clicking Insert Formula from Template and recreating the formula
   - by clicking Insert Formula from Template and appending a new formula to the existing formula in the Calculation field

     Note: If you have more than one functions in the Calculation field, you must associate the functions (e.g. using + or -).

7. Click OK to save the changes and close the dialog.
8. Click OK to close the dialog and display the worksheet.

Discoverer updates the calculation as specified.

Notes

- You cannot edit calculations created by the Discoverer manager. Only the Discoverer manager can edit calculations that they have created. If you want to use a similar calculation, do the following:
  1. Create a new calculation.
  2. Cut and paste the calculation text from the Discoverer manager's calculation into the new calculation.
  3. Modify the calculation formula as required.
- If a calculation contains a syntax error, Discoverer displays an error message. You must correct syntax errors before you can save the calculation.

How to delete calculations

You delete a calculation when you no longer need it and want to remove it permanently from a worksheet. For example, you might have created a temporary calculation to answer a question from a colleague. After printing the report, you want to remove the calculation from the worksheet.

To delete a calculation:

1. Open the worksheet that contains the calculation that you want to remove.
2. Choose Tools | Calculations to display the "Edit Worksheet dialog: Calculations tab".
3. Select the calculation that you want to remove from the calculation list.
4. Click Delete.
5. Click OK to return to the worksheet.

Discoverer removes the calculation that you specified.

Notes

- If you want to remove a calculation from a worksheet without deleting it permanently, you can hide the calculation (see "How to display or hide worksheet calculations").
- You cannot delete calculations created by the Discoverer manager. Only the Discoverer manager can delete calculations that they have created.

- If you delete a calculation that is used in other calculations, all of the dependent calculations are also deleted.

Examples of calculations

For examples of different types of calculation, refer to:

- "Simple calculation examples"
- "Oracle8i analytic function examples"
- "Oracle9i analytic function examples"
- "Examples of using row-based and time-based intervals"

Part III

Sharing results with others

This part covers Discoverer's printing and export features. These features enable you to share Discoverer worksheet data with other Discoverer users electronically on the web, or using printed reports.

For example, your manager requests a very important detailed report in half an hour!

- Using Discoverer, you might generate a report, save it in HTML format, and e-mail it to your manager.
- Alternatively, you might create a worksheet that your manager can access instantly using Discoverer Viewer on the other side of the world.

You can also export data in many other formats, such as Microsoft Excel and plain text.

This part contains the following chapters:

15

Printing worksheets and graphs

Printing worksheets and graphs

This chapter explains how to print worksheets and graphs in Discoverer, and contains the following topics:

- "About sharing Discoverer results with other users"
- "About the Print Wizard"
- "About printing worksheets and graphs"
- "About printing worksheets that contain page items"
- "About printing options and scaling"
- "How to print Discoverer data"
- "How to print Discoverer data to PDF files"

About sharing Discoverer results with other users

Discoverer makes it easy to share data between Discoverer and other application formats. Having used Discoverer to identify and analyze information, you will often want to share your results with other users.

You can share your Discoverer results in a number of ways:

- by printing reports on paper or in PDF (Portable Document Format) format (for more information, see "About the Print Wizard")
- by giving other Discoverer users access to your workbooks (for more information, see "About sharing workbooks")

- by exporting data in a number of different application formats (for more information, see "Exporting data to other applications")
- by exporting data to Oracle Reports format (for more information, see "About exporting worksheets to Oracle Reports")
- by publishing information on your company's intranet using Oracle Portal (For more information, see the *Oracle Discoverer Administrator Administration Guide* or Oracle Portal documentation)

About the Print Wizard

Discoverer provides the Print Wizard to help you print worksheets and graphs. For example, you might want to mail a printed copy of a Discoverer report to a client. Or, if you have Adobe Acrobat installed, you might want to create an Acrobat Portable Document Format (PDF) file that you can e-mail to other colleagues.

You can print a worksheet:

- by printing it to a printer
- by printing it to a PDF file

Note: To print to PDF format, you must have Adobe Acrobat installed on your machine.

In Discoverer, you print items currently displayed on the worksheet, as follows:

- if you want to print items that are not currently displayed, make sure that you display the items on the worksheet before you start
- if you do not want to print items displayed on the worksheet, make sure that you remove the items from the worksheet before you start

Note: If you print a worksheet that contains parameters, you are prompted to enter parameter values. For example, you might be prompted to choose which year's data you want to print.

What you see on screen prints out the same way on paper (or PDF format) including worksheet data, headings, and graphs.

You can print:

- single worksheets
- all worksheets in a workbook
- the graph associated with a worksheet

Discoverer can print reports in both portrait and landscape orientation.

Notes

- When you print a worksheet with a graph in Discoverer Plus, the worksheet and graph print on separate pages. To print a worksheet and its graph on the same page, you might:
  - use the 'Printable Page' link in Discoverer Viewer
  - use Discoverer Portlet Provider to display multiple worksheets and graphs as portlets on a single portal page, and print the Portal page (for more information about Discoverer Portlet Provider, see "Publishing workbooks to OracleAS Portal"
  - export the worksheet and graph to an external application (e.g. HTML, Microsoft Excel) and print the page

About printing worksheets and graphs

Worksheets and their graphs print sequentially. In other words, each graph prints immediately after its worksheet.

Graphs always print on a single sheet of paper. Within the boundaries of that sheet of paper, you can choose to print the graph at different sizes. You can:

- print the graph the same size that you see on screen
- resize the graph to fill the entire sheet of paper
- resize the graph to any size smaller than the sheet of paper

If what you see on screen is too large to fit on a single sheet of paper, the Print Wizard automatically resizes the graph to fit on the sheet.

About printing worksheets that contain page items

When you print a worksheet that contains page items, you print exactly what you see on the screen. In other words, you print data for the currently selected page item.

To print other combinations of page items, first pivot the page items and then print the modified worksheet.

About printing options and scaling

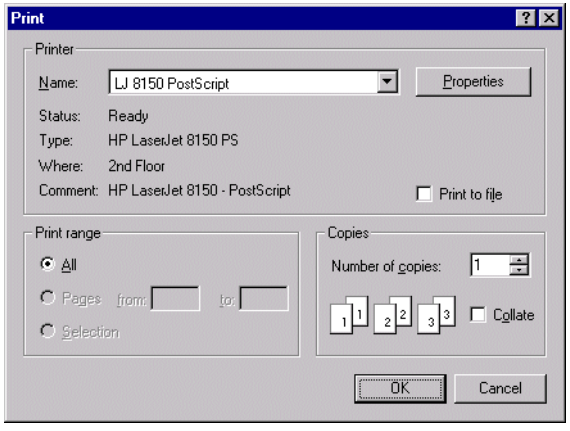
Depending on what printer type you are using, you can also use the Windows Print dialog to configure how worksheets print. For example, you can change the paper layout, paper size, text colors, and resolution.

If you are printing to a postscript printer, you can also change the scaling options for the printed worksheet. This enables you to change the number of rows that are printed on one page.

For example, you might have a report that is one and a half printed pages long that you want to print on one printed page only. Here, you might change the scaling option from 100% to 50% so that the report fits on one printed page.

To change the scaling options for a postscript printer, click Properties in the Print dialog and change the scaling (see figure below).

Figure 15–1 Windows Print dialog



How to print Discoverer data

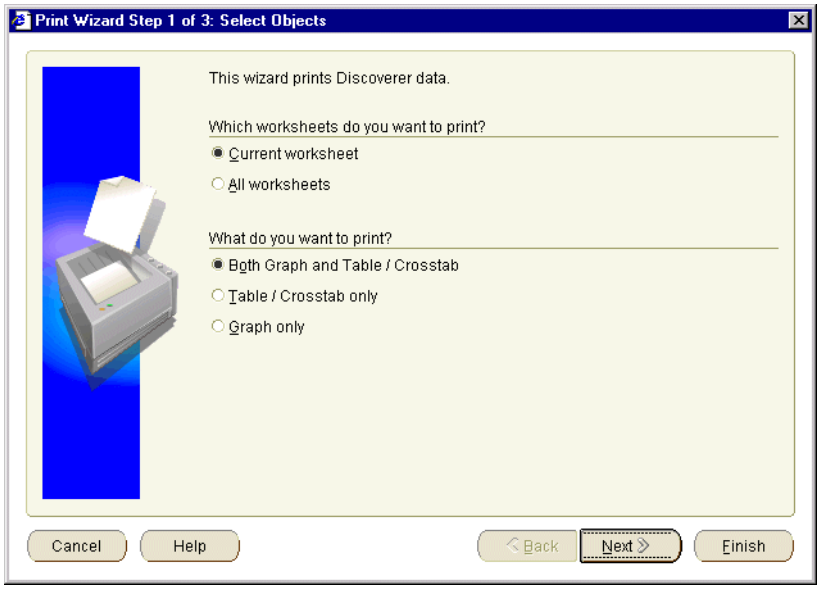
Discoverer enables you to print individual worksheets in a workbook, or an entire workbook.

To print Discoverer data:

1. Open the workbook and worksheet that you want to print.
2. If the worksheet contains page items, make sure that the worksheet displays the combination of page items that you want.

For example, to print data for the year 2000 and the West region, the worksheet must display this data before you print.

3. Choose File | Print to display the "Print Wizard dialog: Select Objects tab".

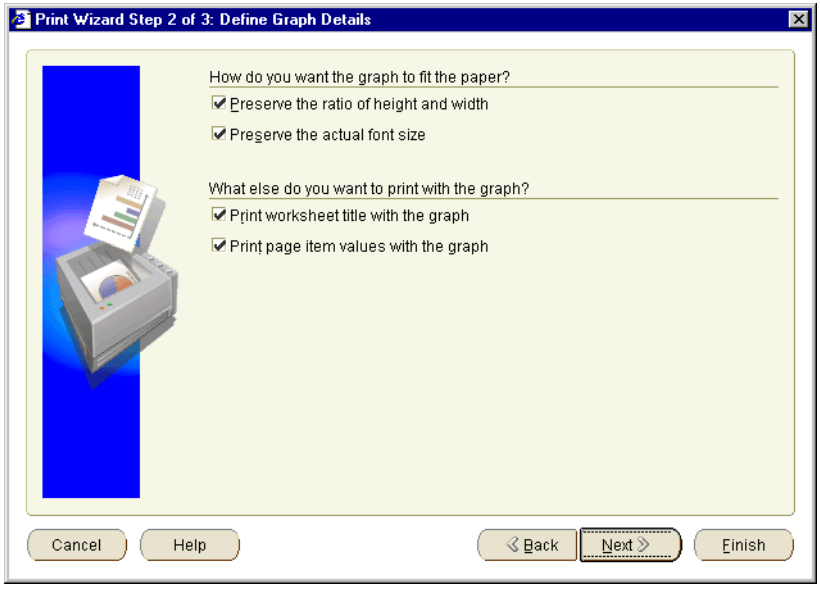


4. Use the "Print Wizard dialog: Select Objects tab" to specify which parts of the workbook to print.

   For example, you might want to print only the current worksheet and its graph, or you might want to print all worksheets in the workbook.

   Hint: If you print all the worksheets in a workbook, make sure that each worksheet currently displays the combination of page items that you want.

5. If you are printing graphs, use the "Print Wizard dialog: Define Graph tab" to specify graph options.

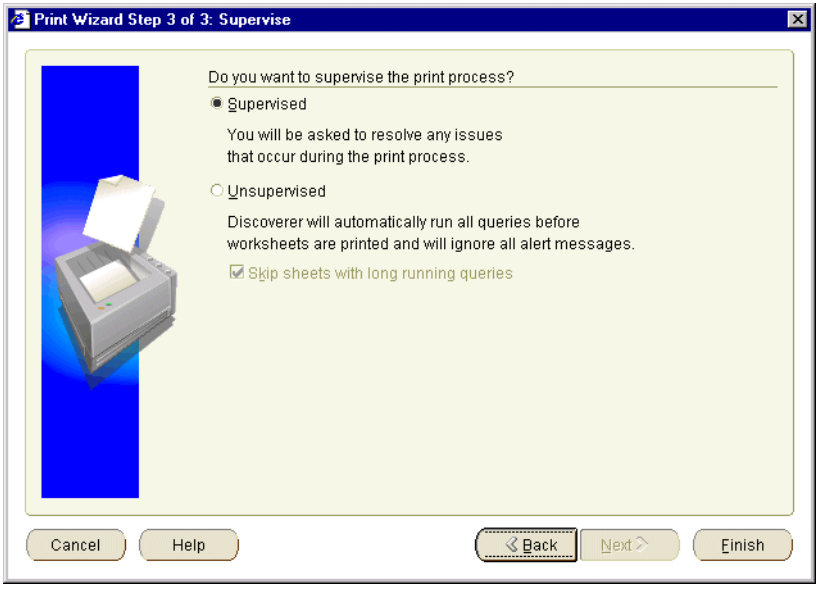


For example, you might want to preserve the graph's height and width ratio, or print worksheet titles.

6. If the worksheet contains parameters, you can restrict the data that you print by entering a parameter value on "Print Wizard dialog: Edit Parameter Values tab").

   For example, you might want to print data for a single year, or print data for all years.

7. Use the "Print Wizard dialog: Supervise tab" to choose whether or not to supervise the print to confirm warning messages.



For example, in Supervised mode, if you exceed the maximum number of rows allowed in a query, a warning message is displayed. You can confirm this warning by clicking OK or click Cancel to stop the process.

8. Click Finish to display the operating system's Print dialog, select printer options as required, and start the print job.

   For example, you might change the default printer, paper orientation, or scaling options (for more information, see "About printing options and scaling").

   Discoverer prints the report to the device selected.

How to print Discoverer data to PDF files

Discoverer enables you to print Discoverer data such as worksheets and graphs to PDF files. For example, you might want to e-mail a report to a client who uses PDF files as a cross-platform information sharing solution.

Note: You must have Adobe Acrobat installed to print to a PDF file.

To print Discoverer data to PDF files:

1. Follow the instructions in "How to print Discoverer data" until the operating system's Print dialog is displayed.

2. In the operating system's Print dialog, select Portable document format (PDF) from the printer list.
3. Follow the instructions to save the PDF file.

You can now open the PDF file in an Adobe Acrobat reader.

Notes

- You can also print to a postscript file from the operating system's Print dialog. If you have Acrobat Distiller installed, you can convert the postscript file to a PDF file.

16

Exporting data to other applications

Exporting data to other applications

This chapter explains how to export worksheet data and graphs in Discoverer, and contains the following topics:

About exporting Discoverer data to other applications

You can share your worksheets and graphs with other people by exporting the worksheets to popular application formats (e.g. Oracle Reports, Microsoft Excel). For example, you might want to:

- e-mail a Discoverer report in HTML format to your manager
- use the power of Oracle Reports to customize a Discoverer report

You can use Discoverer's Export Wizard to export worksheets and graphs in other formats (for more information, see "How to export Discoverer data"). You can also use buttons on the toolbar to export Discoverer data to Microsoft Excel and HTML formats.

When you export a worksheet, you export the data in the worksheet. Depending on the export format you choose, the exported worksheet might also contain its formatting and layout information. In some application formats, the exported worksheet might also contain Discoverer items. For example, if you export to Oracle Reports you export Discoverer calculations and totals. In other words, you can view the exported data in another application, but you cannot apply all Discoverer features to the data in that application.

In Discoverer, you export data for items currently displayed on the worksheet. If you want to export data that is not currently displayed, make sure that you display the items on the worksheet before you start. If you do not want to export data displayed on the worksheet, make sure that you remove the items from the worksheet before you start.

You can export:

- single worksheets
- all worksheets in a workbook
- graphs associated with worksheets (except when exporting to Oracle Reports)

Notes:

- When you export a worksheet and a graph to Excel format, the worksheet data is displayed in the spreadsheet. The graph file (a GIF filed placed in the default drive location) can be inserted manually into the spreadsheet using Excel's Insert | Picture option.

  By default, export files are created in the operating system's default file location. For example, in Windows NT, this might be c:\winnt\profiles*user name*\. You must have write access to the directory to which you export (e.g. c:\winnt\).

- Discoverer's Export Log displays a list of files created during the export.
- Your computer platform and default settings determine which application is used to open files of different types.
- Some Internet browsers impose a limitation on the number of columns that can be displayed. If you export a worksheet with a large number of columns (e.g. over 1000) in HTML format, the Internet browser might not be able to display all columns. For example, Microsoft Internet Explorer only displays up to 1000 columns.

About exporting worksheets to Oracle Reports

You can export worksheet data from Discoverer to Oracle Reports. You can then use Oracle Report's reporting features (e.g. multi-component reports, break charts) to further enhance the worksheet data.

When you export worksheets to Oracle Reports, the export file includes the Discoverer query definition used to create the worksheets. When Oracle Reports opens the export file, this query is executed and the report is refreshed with up-to-date data. In other words, you do not have to repeat the export from Discoverer to get up-to-date data in Oracle Reports.

When you export Discoverer worksheets to Oracle Reports, worksheet data is exported in the Extensible Markup Language (XML) format used by Oracle Reports. During export, Discoverer populates Oracle Report's data model, reports layout, and previewer.

Exported worksheet data is displayed in Oracle Reports. When you open an exported Discoverer report in Oracle Reports, you have everything that you need to continue to work on the report definition on a standalone machine.

The table below shows Discoverer features that are supported by Oracle Reports:

Discoverer feature	How it works in Oracle Reports
calculations	Oracle Reports preserves worksheet calculations.
format styles and symbols	Oracle Reports preserves the following worksheet formatting: ■ font ■ alignment ■ text color ■ background color ■ NULL value substitution ■ currency symbols ■ format masks ■ text style (e.g. upper / lower case, capitalization)
formatting	Oracle Reports users can add, edit, and delete format and exception formats defined on items.
layout	Oracle Reports users can move items around.
NLS	Oracle Reports must be started using the NLS settings used in the original Discoverer worksheet.

Discoverer feature	How it works in Oracle Reports
parameters	Oracle Reports users can continue to use worksheet parameters.
SQL	Discoverer exports an easy-to-read SQL statement for each report that you can edit in Oracle Reports. For example, you can edit SQL for calculations and totals.
titles	Oracle Reports preserves worksheet titles.
totals	Oracle Reports preserves worksheet totals, which are mapped to Oracle Reports summaries.
worksheet items	Oracle Reports users can edit the conditions and parameters used in the worksheet.

Notes

- When you export worksheet data to Oracle Reports, note the following limitations:
  - Oracle Reports does not support Discoverer graphs
  - Oracle Reports does not support Discoverer percentages
- If errors occur during the export process, Discoverer generates warning messages. You can use these messages to diagnose discrepancies between a report in Discoverer and the same report in Oracle Reports.
- To automatically open a file you export in Oracle Reports, files with a filename suffix of '.xml' must be associated with Oracle Reports. Because many different applications can open '.xml' files, you might have to change an existing association between '.xml' files and another application.

About exporting worksheets to Microsoft Excel

You can export worksheet data from Discoverer to Microsoft Excel. You can also export formats and formulas to Microsoft Excel. When you export to Excel, your worksheet fonts, colors, and styles are preserved in Excel.

The table below shows how different versions of Microsoft Excel impose limits on the maximum number of Discoverer rows allowed in an Excel sheet.

Microsoft Excel version	Maximum number of Discoverer rows per Excel sheet	How Microsoft Excel handles additional rows
Excel 97	65,536	Any additional rows are placed on additional Excel sheets.
Excel 2000	65,536	Any additional rows are placed on additional Excel sheets.

Notes

- When you export a worksheet and a graph to Excel format, the worksheet data is displayed in the spreadsheet. The graph file (a GIF filed placed in the default drive location) can be inserted manually into the spreadsheet using Excel's Insert | Picture option.
- Contact the Discoverer manager to find out whether Discoverer is configured to export to Microsoft Excel 95 or Microsoft Excel 97.
- When export worksheets to Microsoft Excel, you must export to a version of Microsoft Excel in the same local language as Discoverer Plus.

About how worksheets and graphs are exported

When you export a workbook containing worksheets with associated graphs, Discoverer creates worksheets and their graphs as separate files:

- one export file for each worksheet in the workbook
- one export file for each graph

For example, if you export a worksheet called Sales and its graph in HTML format, Discoverer creates the following files:

- Sales.html - this file contains a HTML version of the worksheet
- Sales.gif - this file contains the graph in GIF format

Notes

- Discoverer exports graphs as GIF files. GIF is an image file format that is common on the Web and supported by many business applications.

- You can also choose to export graphs at different sizes. You can export a graph as the same size that you see it on the screen, or you can resize the graph to make it larger or smaller (for more information, see "Export Wizard dialog: Define Graph tab").

About exporting worksheets that contain page items

When you export a worksheet that contains page items, you export exactly what you see on the screen. In other words, you export data for the currently selected page item.

To export other combinations of page items, first pivot the page items and then export the modified worksheet.

If you want to export all page items, pivot the page item to the body of the worksheet so that all page items are visible on the worksheet.

About accessing exported files

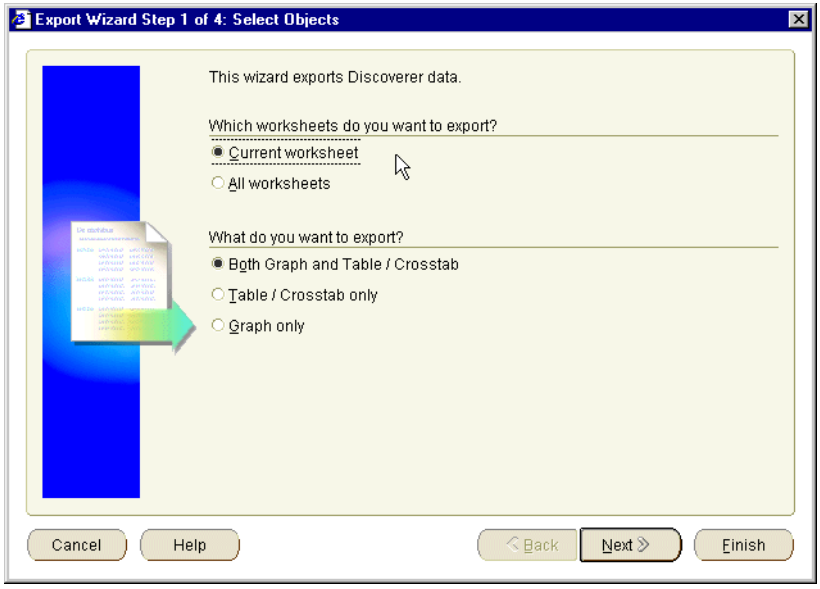
When you export data from Discoverer, you can start the application associated with the format of exported data. For example, when you export to Excel format, you can start Microsoft Excel (for more information, see the "Export Wizard dialog: Log tab").

How to export Discoverer data

You export worksheet data so that you can use the data in a Discoverer worksheet in a different application. For example, you might want to produce a Discoverer worksheet and graph in HTML format.

To export worksheet data:

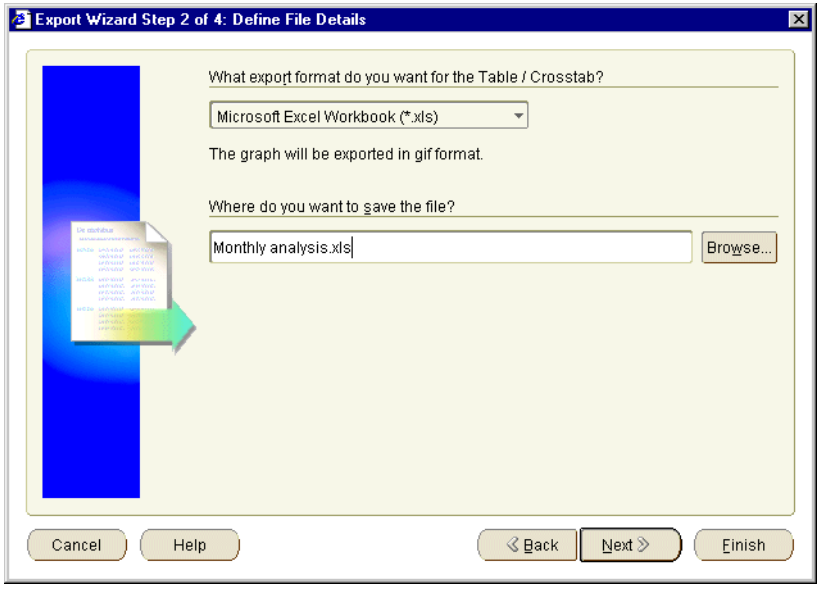
1. Open the worksheet that you want to export.
2. Choose File | Export to display the "Export Wizard dialog: Select Objects tab".
3. Use the "Export Wizard dialog: Select Objects tab" to specify which parts of the workbook you want to export.



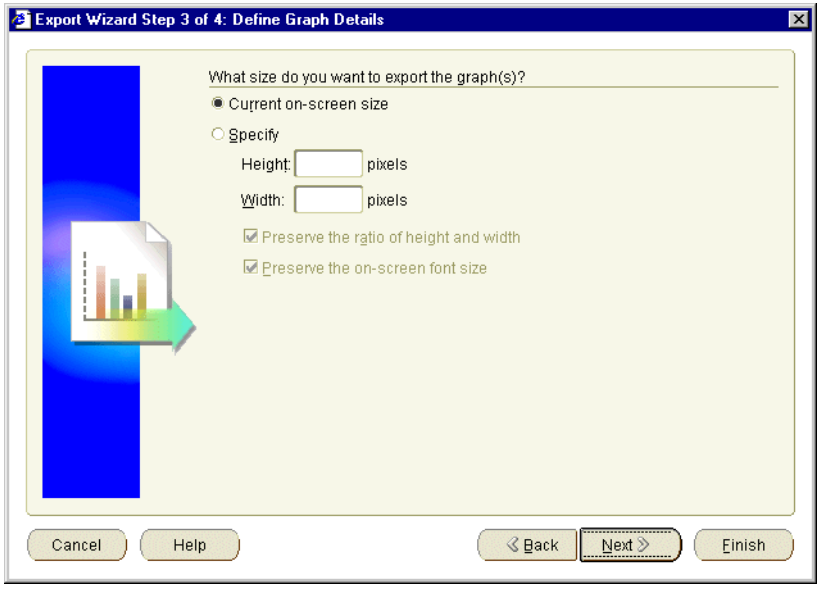
For example, you might want to export only the current worksheet and its graph, or you might want to export all worksheets in the workbook.

Hint: If you export all the worksheets in a workbook, make sure that each worksheet currently displays the combination of page items that you want.

4. Use the "Export Wizard dialog: Define File Details tab" to specify which export format to use and specify where to save the export files.



5. If you are exporting graphs, use the "Export Wizard dialog: Define Graph tab" to specify graph options.



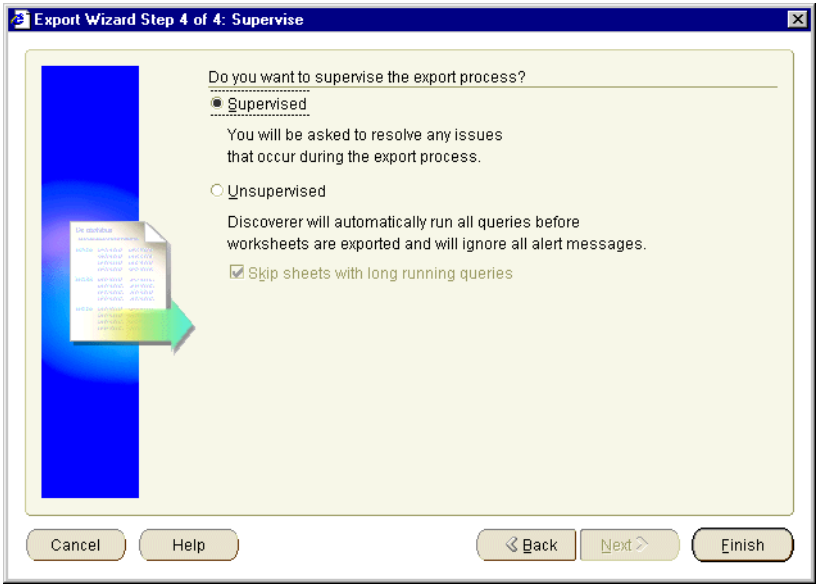
For example, you might want to preserve the graphs' height and width ratios, or the on screen font size.

Note: If you export more that one graph, these options affect all graphs exported.

6. If the worksheet contains parameters, you can restrict the data that you export by entering a parameter value on "Export Wizard dialog: Edit Parameter Values tab").

   For example, you might want to export data for a single year, or export data for all years.

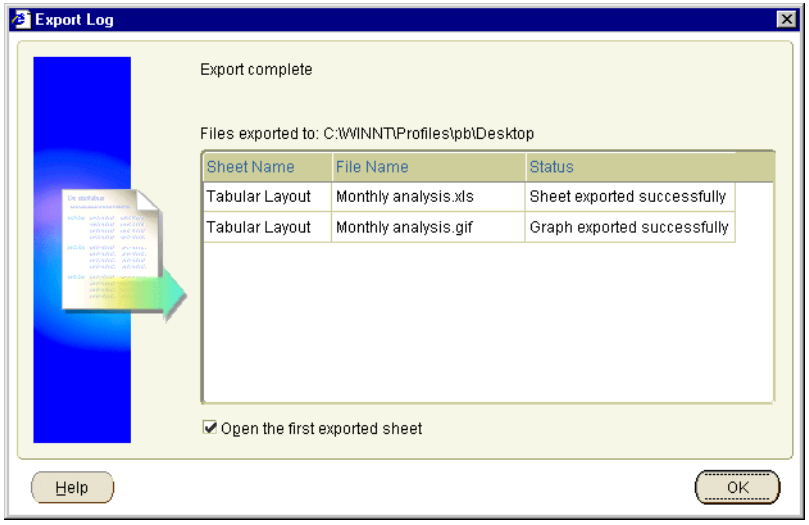
7. Use the "Export Wizard dialog: Supervise tab" to choose whether or not to supervise the export to confirm warning messages.



   For example, in Supervised mode, if you exceed the maximum number of rows allowed in a query, a warning message is displayed. You can confirm this warning by clicking OK or click Cancel to stop the process.

8. Click Finish to start the export.

   Discoverer displays the "Export Wizard dialog: Log tab", which displays a list of files created during the export.



9. If you want to open the first export file in its associated application, select the **Open the first exported sheet** check box.

10. Click OK to close the Export Log.

If you selected the **Open the first exported sheet** check box on the "Export Wizard dialog: Log tab", the Discoverer data is automatically displayed in an appropriate application. For example, if you export to HTML format, the first sheet is automatically displayed in an Internet browser.

Notes

- You do not have to use the Export Wizard to export the current worksheet (and an associated graph) to HTML or Microsoft Excel format. You will find it quicker to use the following menu options (and their equivalent toolbar buttons):
  - File | Export to Excel

    Use this menu option to export the current worksheet to Microsoft Excel format.
  - File | Export to HTML

    Use this menu option to export the current worksheet to HTML format.
- If you select the **Open the first exported sheet** check box, an association must already exist between the file-type (i.e. as indicated by the filename suffix) and

the application you want to use to open the file. For example, to open a worksheet that you exported to Excel format using Microsoft Excel, an association must already exist between Excel and files with a filename suffix of '.xls'.

How to set up an association between file-types and applications depends on your environment. For example:

- if you are using Netscape Navigator, you set up an association using Netscape Navigator's Preferences dialog
- if you are using Internet Explorer, you set up an association using the Windows Explorer Options dialog

17

Sharing workbooks

Sharing workbooks

This chapter explains how to share workbooks with other Discoverer users, and contains the following topics:

- "About sharing workbooks"
- "How to share a workbook with multiple Discoverer users"
- "How to share multiple workbooks with a single Discoverer user"

About sharing workbooks

Discoverer makes it easy for you to share workbooks with other users. For example, you might have created a workbook for analyzing web site traffic and want your colleagues to be able to analyze the data

When you share one of your Discoverer workbooks, you give other Discoverer users read-only access to that workbook. Read-only access enables Discoverer Plus and Discoverer Viewer users to:

- view the shared workbook
- analyze the shared workbook
- print the shared workbook
- save their own private copy of the shared workbook - the original workbook can only be amended by the originator (in Discoverer Plus only)

When you share worksheets, you are sharing the query definition, not the query data itself. The query data that users can access is dependent on users' database access privileges.

Discoverer users can only access worksheets containing data to which they have database access privileges. In other words, if you share a workbook with multiple users, each user will only see the worksheets containing data to which they have database access.

When you share a workbook, you explicitly specify the Discoverer users that have access to that workbook. Only the users that you specify will have access to the workbooks that you choose to share with them. If you want to share results with all users, you can use the Public user option.

When sharing workbooks with other Discoverer users, you can grant access rights in two ways:

- Share one workbook with multiple users - use this option when you have a small number of workbooks that you want to share with a larger number of Discoverer users (for more information, see "How to share a workbook with multiple Discoverer users").
- Share multiple workbooks with one user - use this option when you have a large number of workbooks that you want to share with a small number of Discoverer users (for more information, see "How to share multiple workbooks with a single Discoverer user").

  Note: You can combine these two sharing methods to share your workbooks most effectively.

Notes

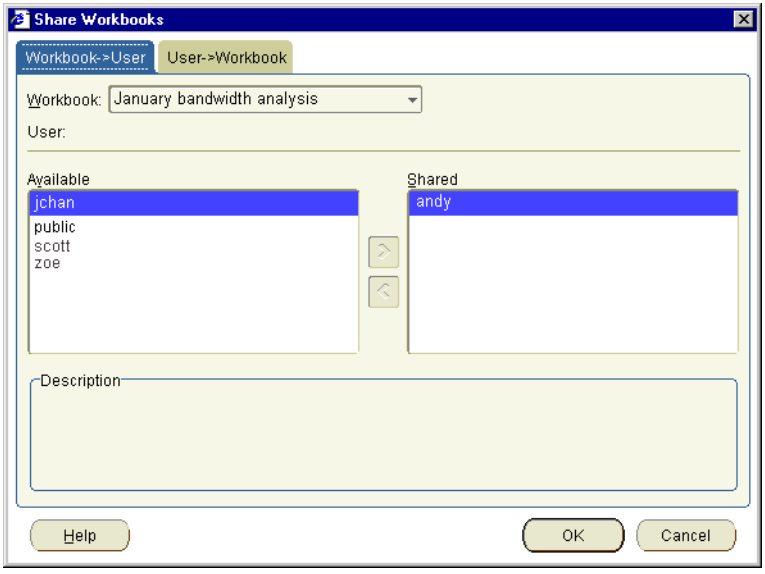
- Even if you share a workbook with other users, you are the only person that can modify the original workbook. Similarly, you cannot save changes to workbooks that other Discoverer users share with you.
- Discoverer Plus users that you share a workbook with can save changes to their own private copy of the workbook.
- If you create a workbook in Discoverer Plus, you can only open it in Discoverer Viewer in either of the following circumstances:
  - if the connection you use to start Discoverer Viewer has the same username and password as the connection you used to start Discoverer Plus
  - if you share the workbook with the username of the connection you use to start Discoverer Viewer (and that user has database access to the data in the workbook)

How to share a workbook with multiple Discoverer users

Often, you will want to share a single workbook with multiple Discoverer users. For example, you might have scheduled a weekly report that you want to provide to colleagues in your department.

To share a workbook with multiple Discoverer users:

1. Choose File | Manage Workbooks | Sharing to display the Share Workbooks dialog.
2. Display the "Share Workbook dialog: Workbook -> User tab".



3. Use the **Workbook** drop down list to specify which workbook you want to share.

   Note: The **Workbook** drop down list only displays workbooks that you have created.

4. To the share the specified workbook, move the users from the **Available** list to the **Shared** list.

   Hint: You can select more than one user by pressing the Ctrl key and clicking another user.

5. Click OK to share the workbook with the Discoverer users that you specified and close the Share Workbooks dialog.

   The users specified will be able to access the workbook when they next connect to Discoverer.

Notes

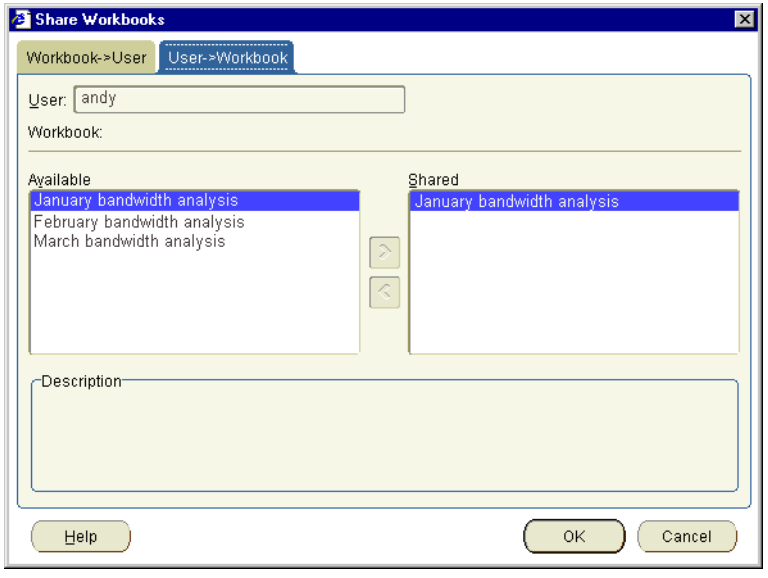
- To prevent a particular user having access to a shared workbook, move the user from the **Shared** list to the **Available** list.

How to share multiple workbooks with a single Discoverer user

Often, you will want to share multiple workbooks with a single Discoverer user. For example, you might have created a set of reports that you want to provide to a single colleague in another department.

To share multiple workbooks with a single Discoverer user:

1. Choose File | Manage Workbooks | Sharing to display the Share Workbooks dialog.
2. Display the "Share Workbook dialog: User -> Workbook tab".



3. Use the **User** drop down list to select the user that you want to share the workbooks with.
4. To share workbooks with the specified user, move the workbooks from the **Available** list to the **Shared** list.

   Hint: You can select more than one workbook by pressing the Ctrl key and clicking another workbook.
5. Click OK to share the selected workbooks with Discoverer user and close the Share Workbooks dialog.

   When the user that you selected next connects to Discoverer, they will have access to the workbooks that you specified.

Notes

- To prevent users having access to a shared workbook, move the workbook from the **Shared** list to the **Available** list.

18

Publishing workbooks to OracleAS Portal

Publishing workbooks to OracleAS Portal

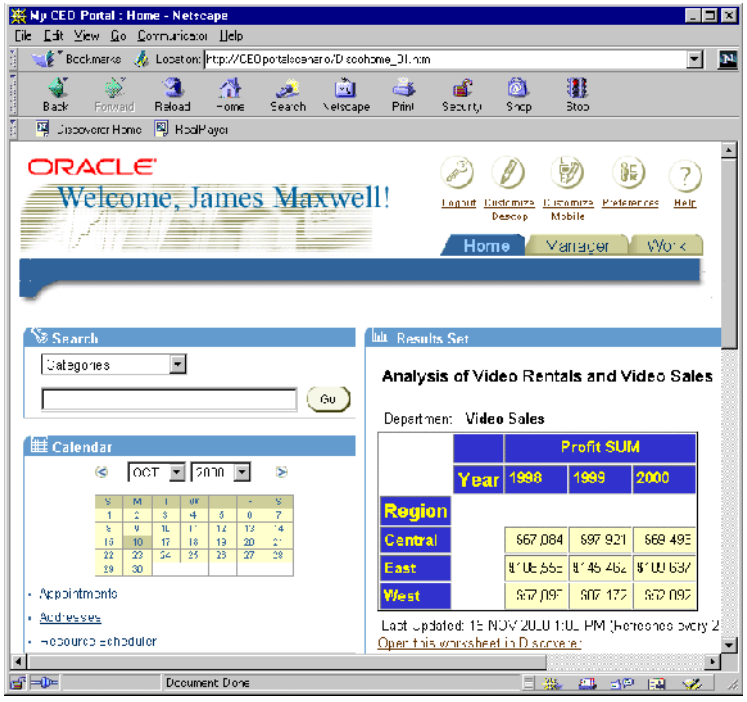
This chapter explains how to publish workbooks and worksheets to organization-wide portals using OracleAS Portal, and contains the following topics:

What is OracleAS Portal?

OracleAS Portal enables non-technical business users to create enterprise information portals (EIPs). EIPs are internet or intranet sites that provide a personalized, single point of interaction with a company's suite of applications.

EIPs also enable you to provide a consistent look and feel to users. EIPs are specifically designed for easy access to different information providers, the presentation of which can be tailored to individual users' requirements. In the example below, the portal contains a portlet called 'Results set' that contains a Discoverer worksheet called 'Analysis of Video Rentals and Video Sales'.

Figure 18–1 An enterprise information portal developed using OracleAS Portal 3.0



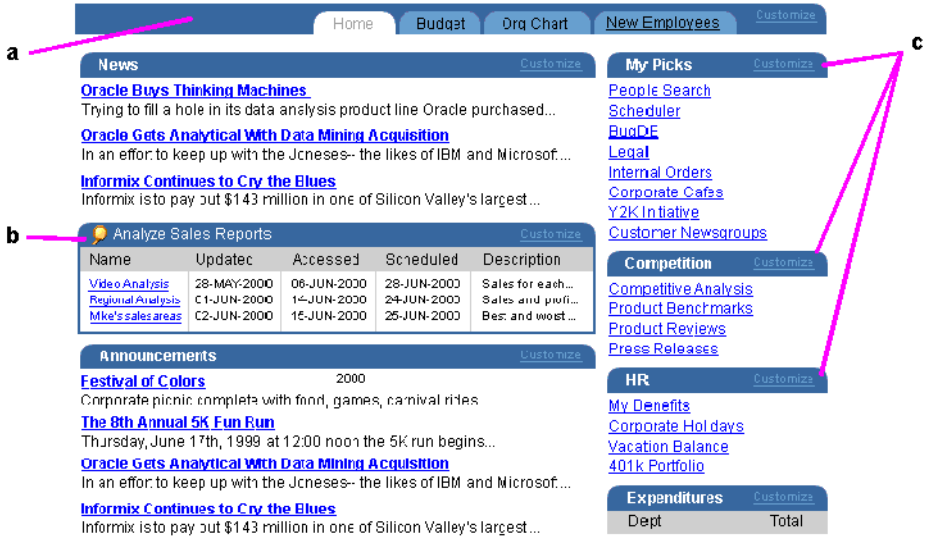
About OracleAS Portal

OracleAS Portal provides an easy-to-use framework for creating and maintaining EIPs. Using OracleAS Portal, you define business portals consisting of a number of different areas (known as portlets). You can customize the presentation of portlets on a per user and / or per group basis.

If you have created a Discoverer worksheet in Discoverer Plus, OracleAS Portal makes it easy to publish the worksheet to a portal community.

For example, the example below shows a business intelligence (BI) portlet in an EIP. The BI portlet (called Analyze Sales Reports) contains links to three Discoverer workbooks (called Video Analysis, Regional Analysis, and Mike's sales areas). Users see different BI applications depending on their requirements.

Figure 18–2 An example EIP containing a Business Intelligence portlet



Key to figure:

a. An EIP page.

b. A Business Intelligence portlet containing links to Discoverer workbooks.

c. Examples of other portlets for different information providers. For example, commonly used applications (My Picks), competitor analysis (Competition), and human resources (HR).

What you need to publish Discoverer content in OracleAS Portal

To publish Discoverer content in OracleAS Portal, you need:

- to register Discoverer as an OracleAS Portal - see the Oracle Application Server Discoverer Configuration Guide for more information.
- a Discoverer database account
- authentication as an OracleAS Portal user - i.e. you must login to OracleAS Portal

- privileges to create or customize pages in OracleAS Portal, to enable you to add portlets to a portal page or customize portlets in a portal page

Notes

Contact the OracleAS Portal Administrator if you require create or edit page privileges.

About publishing Discoverer content in OracleAS Portal

When you use OracleAS Portal in conjunction with OracleAS Discoverer to publish workbooks and worksheets, you use the following security mechanisms to determine which OracleAS Portal users have access to data:

- Using OracleAS Discoverer Plus, you specify which database users can access workbooks by sharing workbooks to specify users, or by sharing workbooks globally to all users (i.e. using PUBLIC)

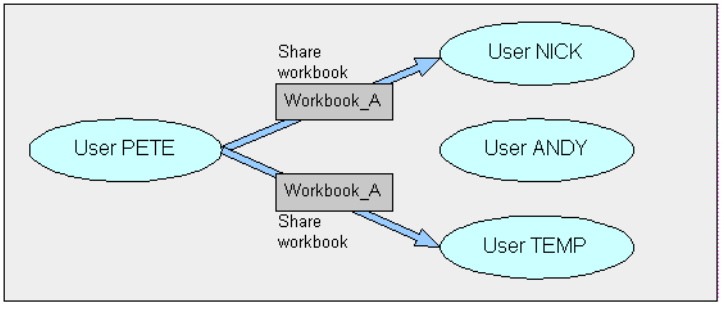
  For more information about sharing workbooks to other Discoverer users, see "Sharing workbooks").

- Using OracleAS Discoverer Portlet Provider, you specify whether OracleAS Portal users must be logged in to access Discoverer portlets (for more information, see the Select Database Connections page in Discoverer Portlet Provider).

For example, you might have four database users: PETE, NICK, ANDY, and a fourth TEMP, which is used for PUBLIC connections (see figure below).

User PETE creates workbook 'Workbook_A' and uses Discoverer Plus to explicitly share Workbook_A with user NICK and user TEMP.

Figure 18–3 Sharing workbooks example



Note: User PETE does not share Workbook_A with user ANDY.

When user PETE publishes the workbook to OracleAS Portal using the Discoverer Portlet Provider, the following options are available:

- For users that are authenticated by single sign-on, he can:
  - give OracleAS Portal users access using the publisher's connection (i.e. user NICK and user ANDY can access Workbook_A in OracleAS Portal)
  - give OracleAS Portal users access using a public connection (i.e. user NICK and user ANDY can access the WB in OracleAS Portal)
  - give OracleAS Portal users access using their own (private) connection (i.e. user NICK can access Workbook_A in OracleAS Portal, not user ANDY)
- For users that are NOT authenticated by single sign-on, he can:
  - give OracleAS Portal users access using the publisher's connection (i.e. user NICK and user ANDY can access Workbook_A in OracleAS Portal)
  - give OracleAS Portal users access using a public connection (i.e. NICK and ANDY can access Workbook_A in OracleAS Portal)
  - prevent access to non-authenticated OracleAS Portal users (i.e. no OracleAS Portal users can access Workbook_A unless logged in)

About portlet types available in Discoverer

Discoverer users can create two types of portlet for Discoverer content:

- a List of database workbooks portlet - see "About the List of database workbooks portlet"
- a Worksheet portlet - see "About the Worksheet portlet"

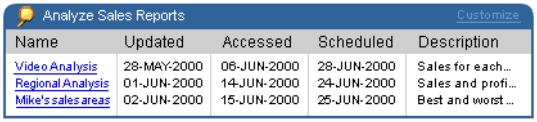
Discoverer content is generated when it is first published and optionally refreshed on a regular schedule.

About the List of database workbooks portlet

A List of database workbooks portlet contains URL links to Discoverer workbooks. When you click a URL link in a workbook portlet, you open the selected workbook in Discoverer Viewer. When you in Discoverer Viewer, you can use Discoverer's powerful analytic features such as pivot, drill etc.

In the figure below, the Analyze Sales Reports portlet contains three URL links, to 'Video Analysis', 'Regional Analysis', and 'Mike's sales areas'.

Figure 18–4 A workbook portlet in an OracleAS Portal page



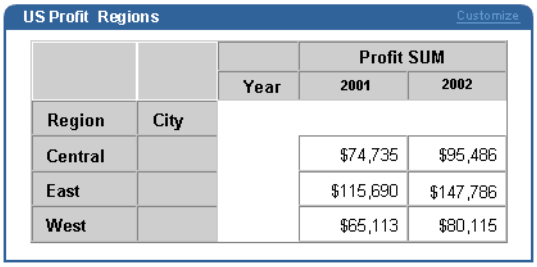
About the Worksheet portlet

A Worksheet portlet contains Discoverer worksheets and graphs.

Note: A link is provided to enable users to open the worksheet in Discoverer Viewer for further analysis (e.g. drill, pivot, etc.).

In the figure below, the worksheet portlet contains a Discoverer worksheet for analyzing profit figures for regions across two years.

Figure 18–5 A worksheet portlet in an OracleAS Portal page



About adding portlets

When you create Discoverer portlets, you create a blank portlet with default settings, then you edit the portlet to suit your needs and publish the results to portal users.

Notes

- Refer to the OracleAS Portal Online Help for information about using the OracleAS Portal toolbars and wizards.

- When you edit portlet pages, the **Edit defaults** options differs from the **Customize** option as follows:
  - **Edit defaults** - in this mode, changes that you make are visible to all users of the page.
  - **Customize** - in this mode, changes that you make are visible only to yourself.

How to add a list of database workbooks portlet

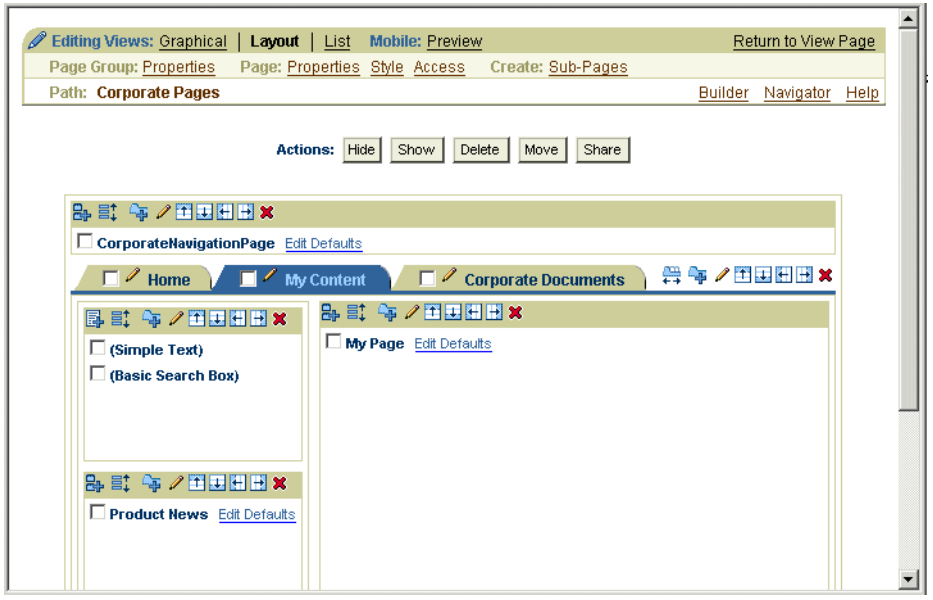
You add a list of database workbooks portlet when you want to provide Discoverer workbook links to a page in OracleAS Portal. For example, to publish a link for a sales workbook to colleagues in a sales department.

For more information, see:

"About the List of database workbooks portlet"

To add a List of database workbooks portlet:

1. Start an internet browser.
2. Display the portal page to which you want to add a Discoverer portlet.
3. If you are not already logged in, click Login and enter your portal login details.
4. Click **Edit** to display the "Page Edit Mode: Layout View" page.
5. Select the **Layout** link from the Editing Views area at the top of the page.

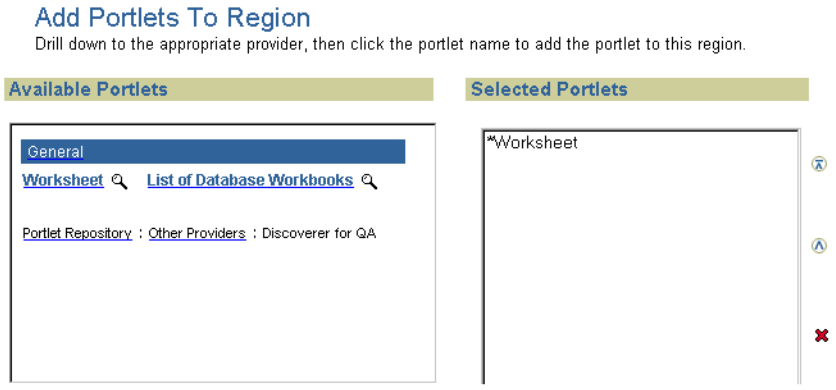


6. Click the **Add Portlets** icon to display the "Add Portlets to Region" page.

   To add portlets, you move portlets from the **Available Portlets** list to the **Selected Portlets** list.

7. In the **Available Portlets** area, choose Discoverer or navigate to where the Discoverer portlets are located.

   Hint: If you are using a new OracleAS install, the Discoverer portlets might be in the **New** folder.

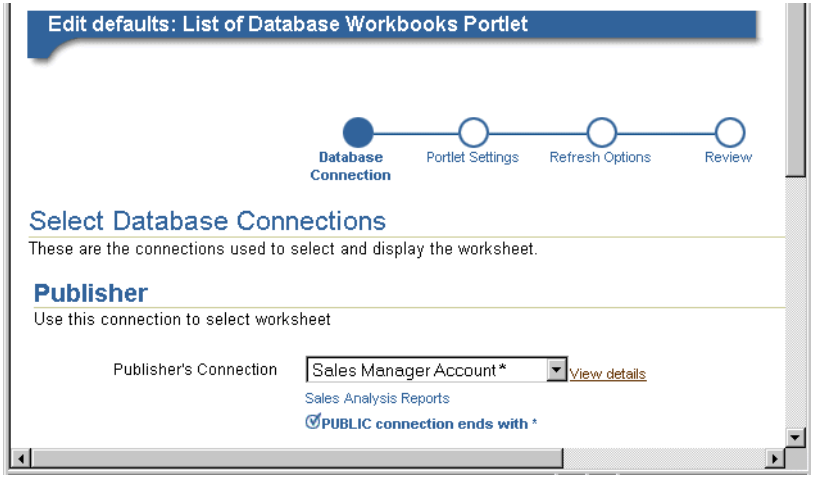


The two Discoverer portlet types (Worksheet and List of Database Workbooks) are displayed.

8. Select the **List of Database Workbooks** link to add the portlet to the **Selected Portlets** list.
9. Click OK to close the "Add Portlets to Region" page.

   Having added a portlet, you now edit the portlet to suit your needs.
10. Select the **Edit Defaults** link next to the portlet that you have just created to start the portlet wizard.

    Hint: If you cannot see an **Edit Defaults** link next to the portlet that you have just created, select the **Layout** link from the Editing Views area at the top of the page.



11. Use the Select Database Connections page to specify how portal users can access the portlet.
12. Use the Portlet Settings page to specify the portlet name, the order of workbooks, and the maximum number of workbooks to display. For example, you might want to display a maximum of ten workbooks in alphabetical order.
13. Use the Refresh Options page to specify when the workbook list is refreshed.
14. Use the Review page to check that you have selected the correct portlet options.
15. Select the **Finish** link to save the defaults.

You can now view the Discoverer worksheet in the portlet. It might take a few moments for the portlet to retrieve its content for the first time.

How to add a worksheet portlet

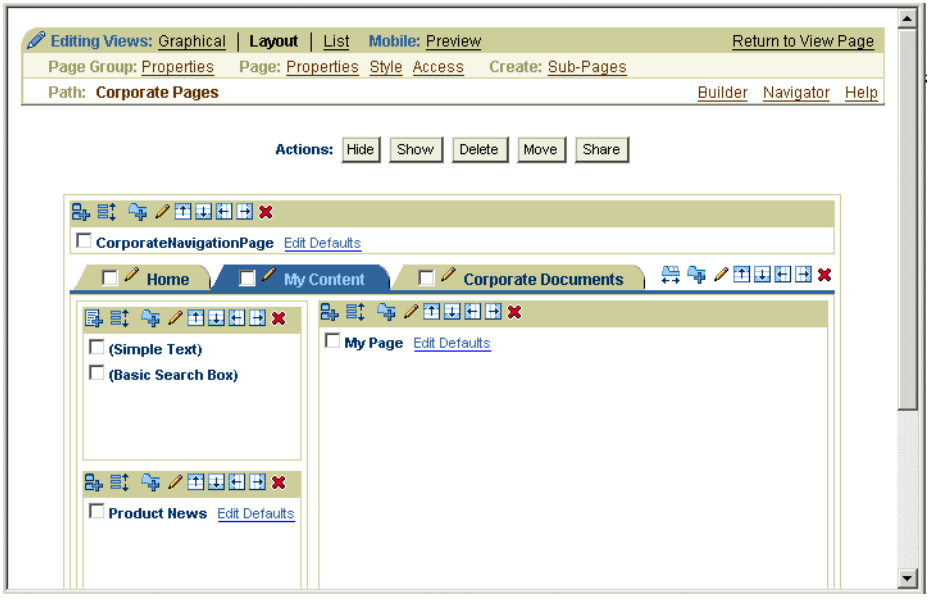
You add a Worksheet portlet when you want to add Discoverer worksheet data to a page in OracleAS Portal. For example, to publish a sales report to everyone in a sales department.

For more information, see:

"About the Worksheet portlet"

To add a Worksheet portlet:

1. Start an internet browser.
2. Display the portal page to which you want to add a Discoverer portlet.
3. If you are not already logged in, click Login and enter your portal login details.
4. Click Edit to display the "Page Edit Mode: Layout View" page.
5. Select the **Layout** link from the Editing Views area at the top of the page.

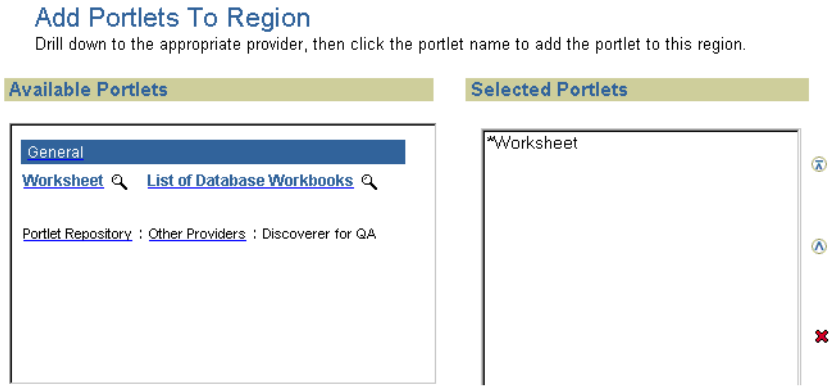


6. Click the Add Portlets icon to display the "Add Portlets to Region" page.

   To add portlets, you move portlets from the **Available Portlets** list to the **Selected Portlets** list.

7. In the **Available Portlets** area, choose **Discoverer** or navigate to where the Discoverer portlets are located.

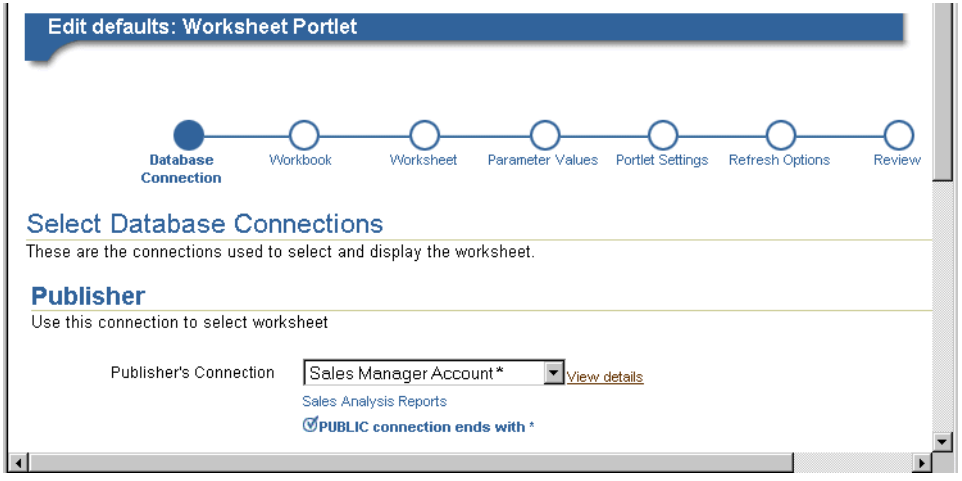
   The two Discoverer portlet types (Worksheet and List of Database Workbooks) are displayed.



8. Select the **Worksheet** link to add a portlet to the **Selected Portlets** list.
9. Click OK to close the Add Portlets to Region page.

   Having added a portlet, you now edit the portlet to suit your needs.
10. Select the **Edit Defaults** link next to the portlet that you have just created to start the portlet wizard.

    Hint: If you cannot see an **Edit Defaults** link next to the portlet that you have just created, select the **Layout** link from the Editing Views area at the top of the page.



11. Use the "Database Connections page" to specify how portal users can access the portlet.
12. Use the "Select Workbook page" to specify the workbook in which the worksheet is stored.
13. Use the "Select Worksheet page" to specify which worksheet you want to publish to the portal.
14. (optional) If parameters are defined for the worksheet, use the "Edit Parameters page" to specify parameter values. Parameter values are used to provide dynamic input to worksheets. For example, to focus on specific information, or provide input to calculations.
15. Use the "Portlet Settings page" to specify what parts of the worksheet to publish. For example, you might want to publish the worksheet data only, the worksheet's graph only, or worksheet data and a worksheet's graph.
16. Use the "Refresh Options page" to specify when the worksheet data is refreshed.
17. Use the "Review page" to check that you have selected the correct portlet options.
18. Select the **Finish** link to save the defaults.

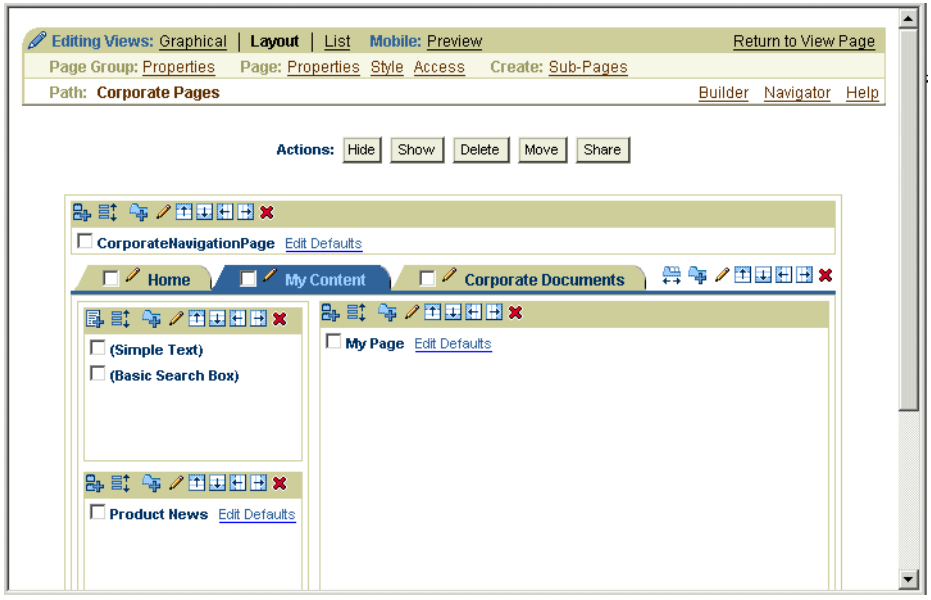
You can now view the Discoverer worksheet in the portlet. It might take a few moments for the portlet to retrieve its content for the first time.

How to edit a Discoverer portlet

You edit a Discoverer portlet when you want to change how a portlet is displayed to portal users.

To edit a Discoverer portlet:

1. Start an internet browser.
2. Display the portal page containing the Discoverer portlet that you want to edit.
3. If you are not already logged in, click Login and enter your portal login details.
4. Click **Edit** to display the "Page Edit Mode: Layout View" page.
5. Select the **Layout** link from the Editing Views area at the top of the page.



6. Select the **Edit Defaults** link next to the portlet that you want to edit to start the portlet wizard for that style of portlet (List of Database Workbooks or Worksheet).

   Hint: If you cannot see an **Edit Defaults** link next to the portlet that you have just created, select the **Layout** link from the Editing Views area at the top of the page.

7. Follow the steps in the portlet wizard.

8. Select the **Finish** link to save changes to the portlet.

You can now view the updated Discoverer worksheet in the portlet.

Part IV

Advanced Discoverer Plus features

This part covers Discoverer's advanced features, such as scheduling, lists of values, SQL, and changing default settings.

This part contains the following chapters:

19

Advanced Discoverer Plus Features

Advanced Discoverer Plus features

This chapter explains how to use some of Discoverer's advanced features, and includes the following topics:

- "Using scheduled workbooks"
- "Using lists of values (LOVs)"
- "Changing default settings"
- "Using SQL"

Using scheduled workbooks

This section describes how to improve productivity using Discoverer's scheduling facilities, and includes the following topics:

- "What are scheduled workbooks?"
- "When do I need to use scheduled workbooks?"
- "About scheduled workbooks"
- "About accessing scheduled workbook results"
- "About how scheduled workbooks are processed?"
- "How to schedule the currently opened workbook"
- "How to schedule unopened workbooks"
- "How to change the properties of a scheduled workbook"
- "How to copy a scheduled workbook"

- "How to unschedule a workbook"
- "How to delete scheduled workbook results"

What are scheduled workbooks?

Scheduled workbooks are Discoverer workbooks that are processed at a specified time and frequency in the database. For example, regular weekly reports or complex reports that must be processed at off-peak times.

Note: You must have the required privileges to schedule workbooks. Contact the Discoverer manager for more details.

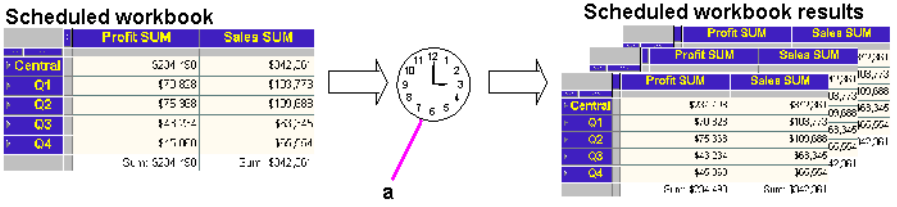
When scheduled workbooks are processed, scheduled workbook results are produced. Scheduled workbook results can then be analyzed just like ordinary Discoverer workbooks. For example, to produce reports and graphs.

You do not have to be connected to Discoverer to process scheduled workbooks.

For more information about how workbooks are processed, see "About how scheduled workbooks are processed?"

The figure below illustrates how a scheduled workbook produces regular scheduled workbook results at a specified time.

Figure 19–1 Scheduled workbooks and results



Key to figure:

a. Produce a daily / weekly / monthly report at the scheduled time.

When do I need to use scheduled workbooks?

Typically you schedule workbooks in any of the following circumstances:

- A workbook will take a long time to process. Scheduling a workbook to be processed at off-peak times avoids overburdening the server during peak times.

- You process a large or complex workbook or worksheet that exceeds the time limit set by the Discoverer manager. When this happens, a Schedule button appears informing you that the workbook / worksheet query time exceeds the time limit. You can then click the Schedule button and schedule the workbook to process the workbook at off-peak times that are not restricted by the time limit.
- You want to process a workbook at regular intervals, such as a weekly report of sales figures or a monthly cash-flow analysis.
- The Discoverer manager has specified that you can only open scheduled workbooks results. You cannot open non-scheduled workbooks arbitrarily from the database.

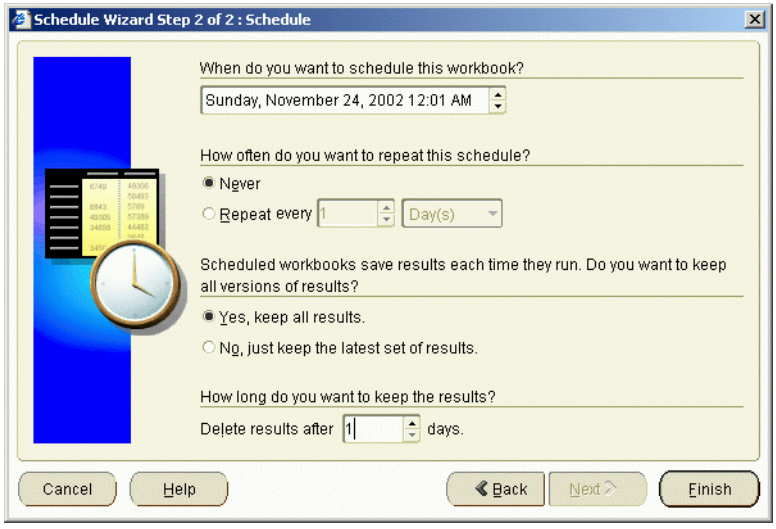
About scheduled workbooks

Scheduled workbooks have the following characteristics:

- You can only schedule existing workbooks.
- A set of scheduled workbook results is created each time a scheduled workbook is run. For example, a weekly scheduled workbook produces one set of results each week.

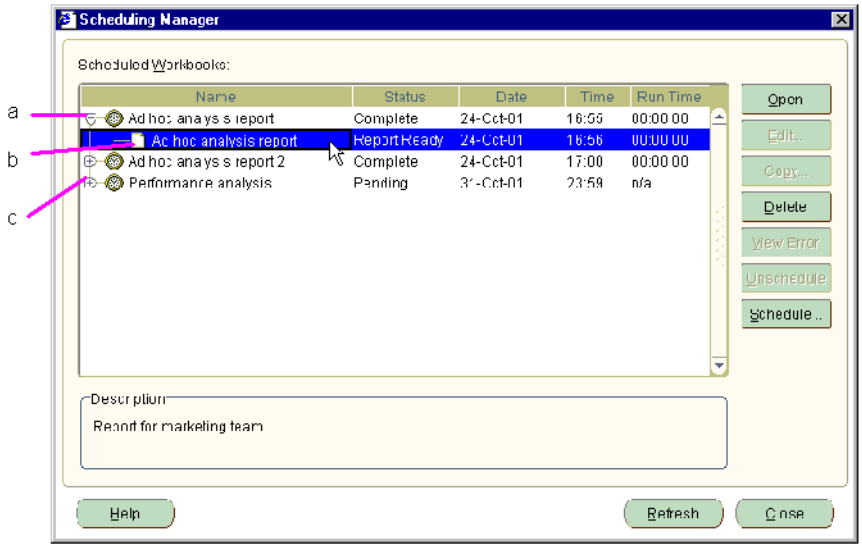
  In the figure below, a workbook is scheduled to run at 1.00 a.m. on January 1, 2003, and then once a week at the same time.

Figure 19–2 Scheduling a workbook in Discoverer



- You can only edit scheduled workbooks that you create yourself (using your current Discoverer user name).
- You manage scheduled workbooks using the Scheduling Manager (see figure below).

Figure 19–3 The Discoverer Scheduling Manager



Key to figure:

a. A scheduled workbook called 'Ad hoc analysis report'.

b. The expandable list below each workbook contains details of each set of results produced by each scheduled workbook. In this example, there is one set of results for 'Ad hoc analysis report', which is ready to open.

c. The + symbol next to each scheduled workbook is used to expand lists of results. The **Status** field shows whether sets of results are ready to use. In this example, the scheduled workbook 'Performance analysis' is pending (i.e. not yet processed).

About accessing scheduled workbook results

Scheduled workbook results can be viewed in Discoverer Plus or Discoverer Viewer.

You can open scheduled workbook results at any time when connected to Discoverer.

When you connect to Discoverer, you are alerted when scheduled workbook results have been processed and are ready to open.

About how scheduled workbooks are processed?

Discoverer processes scheduled workbooks as follows:

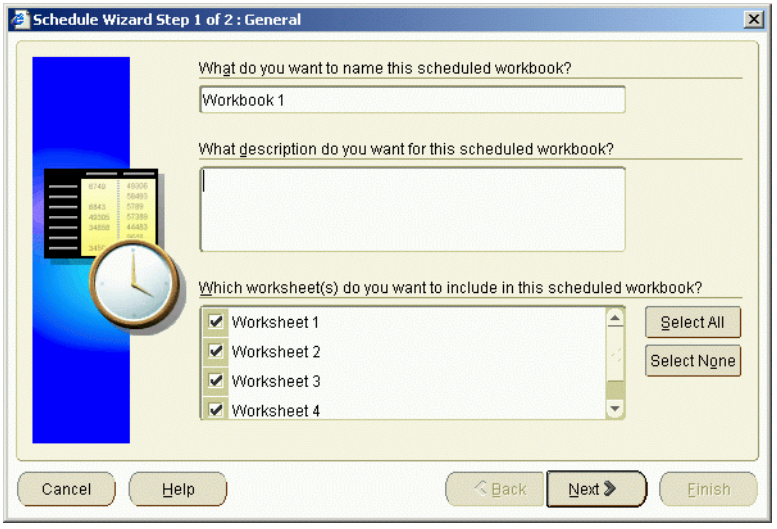
- When workbooks are scheduled, the workbook processing is done automatically in the database.
- You do not need to have Discoverer Plus running or connected to process scheduled workbooks.
- Scheduled workbook results are saved in the database and are available when you start Discoverer.

How to schedule the currently opened workbook

When you create a new workbook, you schedule it when you want to process the workbook at a particular time and frequency. For example, to process a daily sales workbook at 1.00 a.m. every morning (because that is when the network has spare capacity).

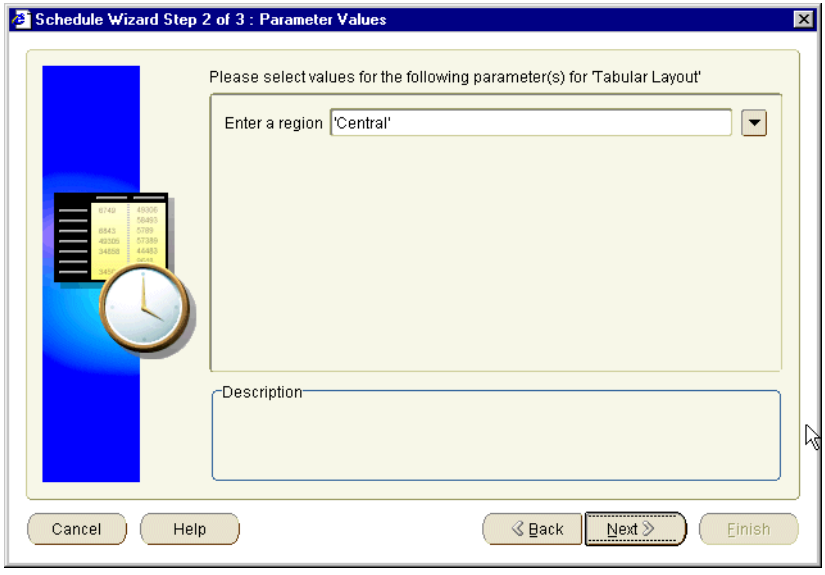
To schedule the currently opened workbook:

1. Choose File | Schedule to display the "Schedule Wizard dialog".

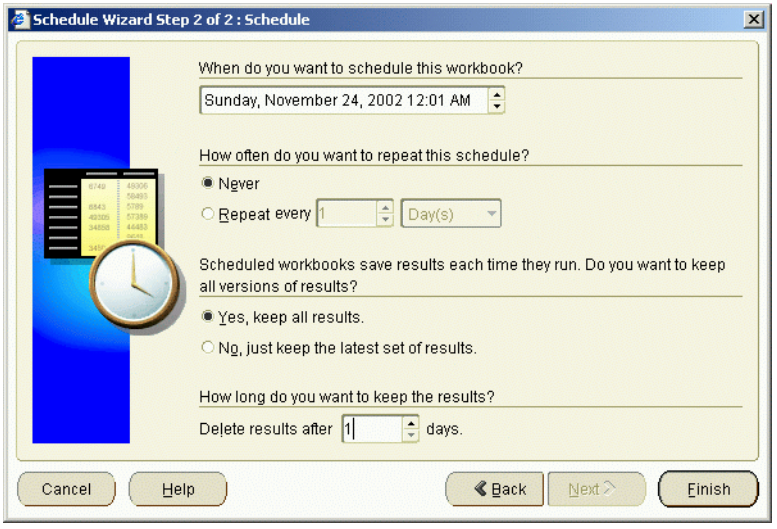


2. Use the "Schedule Wizard dialog: General tab" page to define a name and description for the scheduled workbook, and specify which worksheets you want to schedule.

3. (optional) If parameters are required for the worksheets that you specify, use the "Schedule Wizard dialog: Parameter Values tab" page(s) to enter required parameter values.



4. Use the "Schedule Wizard dialog: Schedule tab" page to specify when the scheduled workbook results are produced and how frequently they are produced.



5. Click Finish to create the scheduled workbook.

   Hint: To monitor the progress of scheduled workbooks, use the "Scheduling Manager dialog". Choose File | Manage Workbooks | Scheduling Manager to display the "Scheduling Manager dialog"

Notes

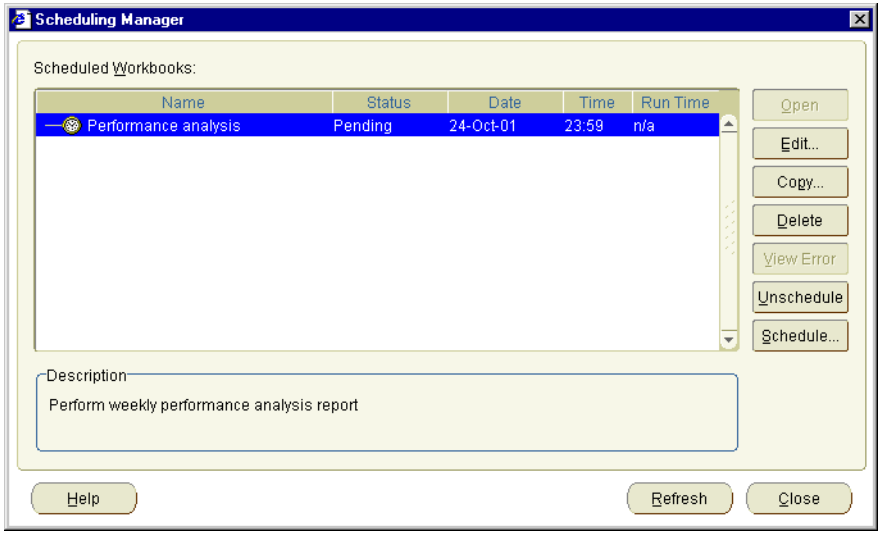
- For more information about how workbooks are processed, see "About how scheduled workbooks are processed?"

How to schedule unopened workbooks

You schedule unopened workbooks using the Scheduling Manager. For example, you might want to schedule a workbook previously created by another Discoverer user.

To schedule a workbook:

1. Choose File | Manage Workbooks | Scheduling Manager to display the "Scheduling Manager dialog".



2. Click Schedule to display the "Select Workbook from Database dialog (to schedule)", which displays a list of workbooks to which you have access.
3. Select the workbook that you want to schedule and click Select to display the "Schedule Wizard dialog".
4. Use the "Schedule Wizard dialog: General tab" page to define a name and description for the scheduled workbook, and specify which worksheets you want to schedule.
5. (optional) If parameters are required for the worksheets that you specify, use the "Schedule Wizard dialog: Parameter Values tab" page(s) to enter required parameter values.
6. Use the "Schedule Wizard dialog: Schedule tab" page to specify when the scheduled workbook results are produced and how frequently they are produced.
7. Click Finish to create the scheduled workbook.

   Hint: To monitor the progress of scheduled workbooks, use the "Scheduling Manager dialog". Choose File | Manage Workbooks | Scheduling Manager to display the "Scheduling Manager dialog"

Notes

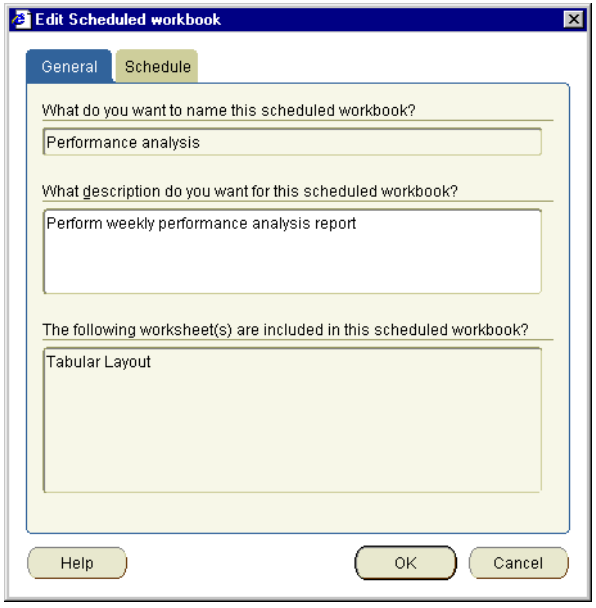
- You must have the required privileges to schedule workbooks. Contact the Discoverer manager for more details.
- For more information about how workbooks are processed, see "About how scheduled workbooks are processed?"

How to change the properties of a scheduled workbook

You change the properties of a scheduled workbook when you want to change how it is configured. For example, to change when a workbook is processed.

To edit a scheduled workbook:

1. Choose File | Manage Workbooks | Scheduling Manager to display the "Scheduling Manager dialog".
2. Select the scheduled workbook that you want to edit from the Scheduled Workbook list.
3. Click Edit to display the "Edit Scheduled Workbook dialog".



4. Use the "Edit Scheduled Workbook dialog: General tab" to define a description for the scheduled workbook, and view which worksheets are scheduled.

5. (optional) If the workbook has active parameters, use the "Edit Scheduled Workbook dialog: Parameter values tab" to enter required parameters.
6. Use the "Edit Scheduled Workbook dialog: Schedule tab" to specify when the scheduled workbook results are produced, how frequently they are produced, and which results are saved on the server.
7. Click OK to save changes to the scheduled workbook.

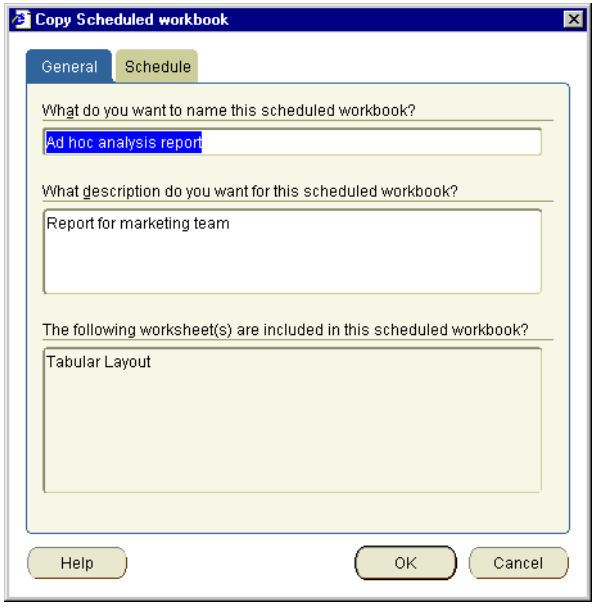
   Hint: To monitor the progress of scheduled workbooks, use the "Scheduling Manager dialog". Choose File | Manage Workbooks | Scheduling Manager to display the "Scheduling Manager dialog"

How to copy a scheduled workbook

You copy a scheduled workbook when you want to quickly create a new scheduled workbook based on an existing scheduled workbook. For example, when a similar scheduled workbook already exists that you want to use as a template to quickly schedule a workbook.

To copy a scheduled workbook:

1. Choose File | Manage Workbooks | Scheduling Manager to display the "Scheduling Manager dialog".
2. Select the scheduled workbook that you want to copy from the Scheduled Workbook list.
3. Click Copy to display the "Edit Scheduled Workbook dialog".



4. Use the "Edit Scheduled Workbook dialog: General tab" to a specify a name and description for the scheduled workbook, and view which worksheets are scheduled.

   Note: Enter a unique name here for the new scheduled workbook. If you do not enter a unique name, Discoverer generates a unique name for you and prompts you to verify the name.

5. (optional) If the workbook has active parameters, use the "Edit Scheduled Workbook dialog: Parameter values tab" to enter required parameters.

6. Use the "Edit Scheduled Workbook dialog: Schedule tab" to specify when the scheduled workbook results are produced and how frequently they are produced.

7. Click OK to save changes to the scheduled workbook.

   The new scheduled workbook is displayed in the "Scheduling Manager dialog".

   Hint: To monitor the progress of scheduled workbooks, use the "Scheduling Manager dialog". Choose File | Manage Workbooks | Scheduling Manager to display the "Scheduling Manager dialog"

Notes

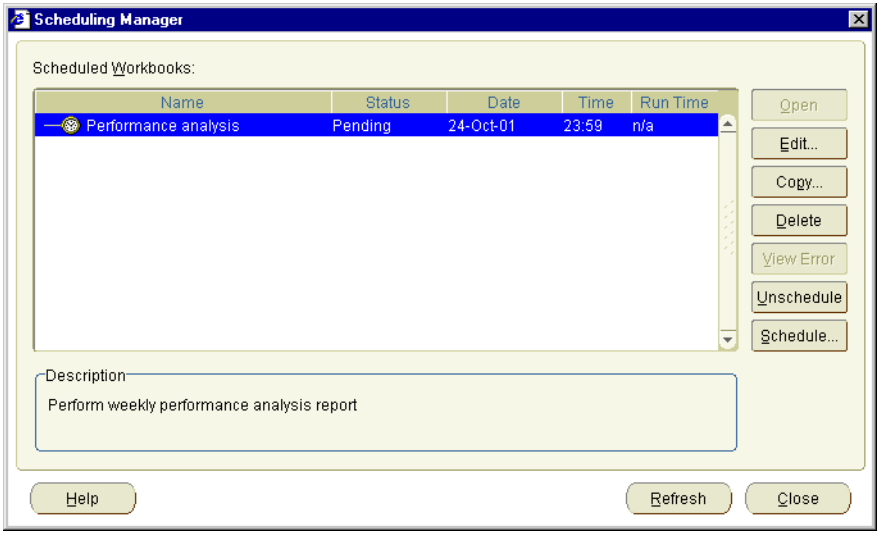
- When you copy an existing scheduled workbook, the original scheduled workbook is unchanged, unless you overwrite the original with the same scheduled workbook name.

How to unschedule a workbook

You unschedule a workbook when you want to stop a scheduled workbook being processed. For example, when you no longer need to produce a monthly report. You can choose either to keep all results for this scheduled workbook or delete all results.

To unschedule a scheduled workbook:

1. Choose File | Manage Workbooks | Scheduling Manager to display the "Scheduling Manager dialog".



2. Select the scheduled workbook that you want to stop from the Scheduled Workbook list.
3. Click Unschedule to display the Confirm Unschedule dialog.
4. Click OK to unschedule the workbook.

Changes to the scheduled workbook are reflected in the "Scheduling Manager dialog".

Hint: To monitor the progress of scheduled workbooks, use the "Scheduling Manager dialog". Choose File | Manage Workbooks | Scheduling Manager to display the "Scheduling Manager dialog"

How to delete scheduled workbook results

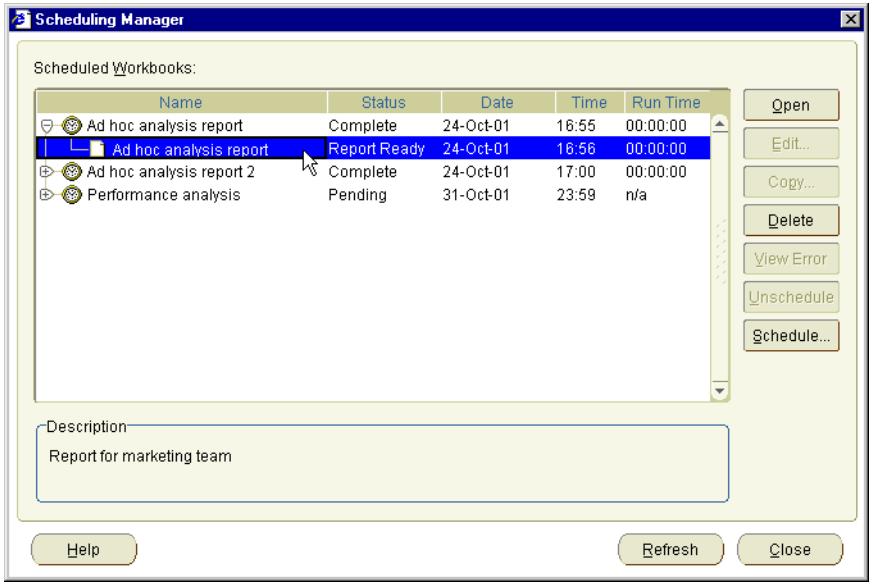
You delete scheduled workbook results when you no longer need to use results generated by scheduled workbooks. For example, you might have monthly reports that have accumulated over the previous year that you want to delete permanently.

When you delete scheduled workbook results, you have the following options:

- You can choose to remove results but keep the scheduled workbook so that the scheduled workbook continues to generate results.
- You can choose to remove results and stop (or unschedule) the scheduled workbook so that it no longer generates results.

To delete a scheduled workbook:

1. Choose File | Manage Workbooks | Scheduling Manager to display the "Scheduling Manager dialog".



2. Select the scheduled workbooks and results that you want to delete from the Scheduled Workbook list.

   Note: You can select more than one list item by pressing the Ctrl key and clicking another list item.

3. Click Delete to display a confirmation dialog.

4. Click OK to delete the scheduled workbook(s).

   Changes to the scheduled workbook are reflected in the "Scheduling Manager dialog".

   Hint: To monitor the progress of scheduled workbooks, use the "Scheduling Manager dialog". Choose File | Manage Workbooks | Scheduling Manager to display the "Scheduling Manager dialog"

Notes

- If the Delete results after <n> days option is used, scheduled workbook results are deleted automatically. This option is set in the following ways:
  - when you create a scheduled workbook using the "Schedule Wizard dialog: Schedule tab" page

- when you edit a scheduled workbook using the "Edit Scheduled Workbook dialog: Schedule tab"

Using lists of values (LOVs)

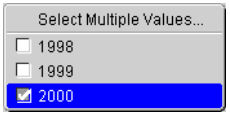
This section describes how to improve productivity using Lists of Values (LOVs) in Discoverer, and includes the following topics:

- "What are LOVs?"
- "LOV examples"
- "About using long LOVs"
- "How to select single values from long LOVs"
- "How to select multiple values from long LOVs"

What are LOVs?

LOVs contain a list of valid values for an item. For example, a LOV for a year item might contain the values 1998, 1999, and 2000 (see figure below).

Figure 19–4 A LOV on a year item, containing 1998, 1999, and 2000



You use LOVs in:

- parameters
- conditions
- the Discoverer item navigator
- the export wizard

LOVs are used in the following way:

- When used in parameters, conditions, and export, LOVs enable you to select predefined values rather than enter arbitrary values in a text field.

- Because LOVs contain only predefined values in the database, you know that you will always enter a valid value.
- When used in the Discoverer item navigator, LOVs enable you to apply conditions to worksheets without defining conditions criteria. For example, choosing 2000 from a LOV in the Discoverer item navigator filters a worksheet to display only data for 2000.
- LOVs work differently with parameters and conditions:
  - With parameters, the Discoverer user that creates the workbook specifies whether single or multiple values are allowed. For example, when setting a parameter, a user might choose 1999 and 2000 from a LOV (for more information, see "A LOV used to specify worksheet parameters").
  - With conditions, the condition type determines whether you can select single or multiple values. Only the following condition types allow multiple values:
    - Like
    - Not like
    - In
    - Not in
    - Is null
    - Is not null
    - Between

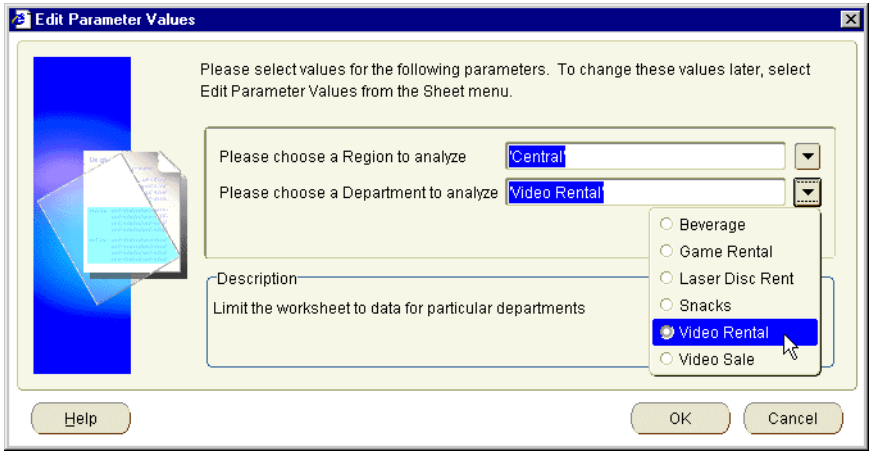
LOV examples

This section contains examples of using LOVs.

A LOV used to specify worksheet parameters

In the figure below, a LOV has been created on the department item, containing the departments Video Rental, Video Sale etc. If a LOV was not defined on Department, you might enter 'Video Hire' here, which would result in an empty worksheet because the database does not contain this department. The figure below shows the value Video Rental being selected from a LOV in a parameter dialog.

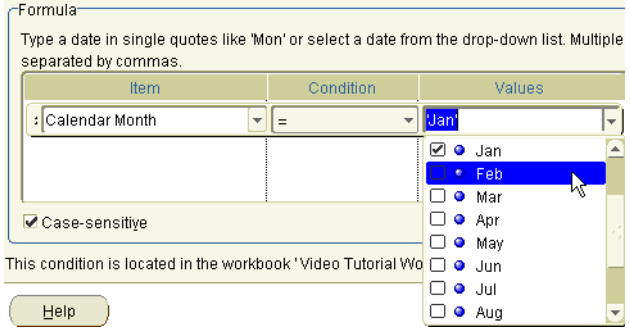
Figure 19–5 A LOV being used to specify worksheet parameters



A LOV used in a condition

LOVs are also used when you create conditions. For example, in the figure below, the LOV containing months is used to choose values against which to match worksheet data. The figure below shows the value Feb (i.e. February) being selected from a LOV in a condition dialog

Figure 19–6 A LOV being used in a condition

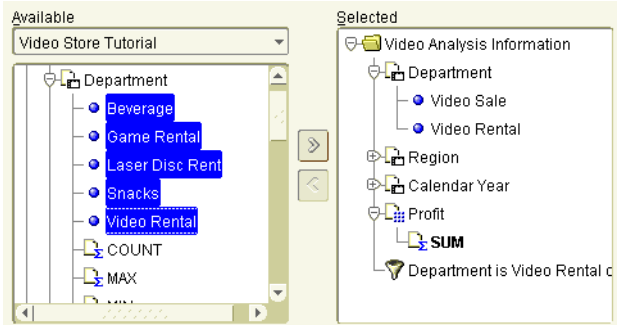


A LOV used in the Discoverer item navigator

LOVs are also used in the Discoverer item navigator. For example, in the figure below, the LOV values Video Sales and Video Rentals are selected for display on a worksheet. In other words, the LOV values are used to filter the worksheet. The figure below shows the values Video Sale and Video Rental being selected in the Discoverer item navigator.

Note: LOVs in the Discoverer item navigator might be turned off. Contact the Discoverer manager for more details.

Figure 19–7 A LOV used in the Discoverer item navigator



About using long LOVs

When LOVs contain a large number of values, Discoverer displays a dialog that enables you to search LOV values and select the values that you want. For example, if a LOV contains hundreds of values, you can select only values that begin with the letter 'A', or select only values that contain 'CPM'.

Note: For more information about Discoverer dialogs used to search LOVs, see "Select Value dialog" and "Select Values dialog".

When using long LOVs, the following rules apply:

- When LOVs are used with parameters, you can use the Select Multiple Values option to display a dialog that enables you to search and select LOV values.
- When LOVs are used with conditions, you can use the Select values option to display a dialog that enables you to search and select LOV values.
- The Discoverer manager might configure Discoverer Plus to always display a search dialog for selecting LOV values, even when the LOV will fit on screen.

For more information about selecting values from long LOVs, see "How to select single values from long LOVs" and "How to select multiple values from long LOVs".

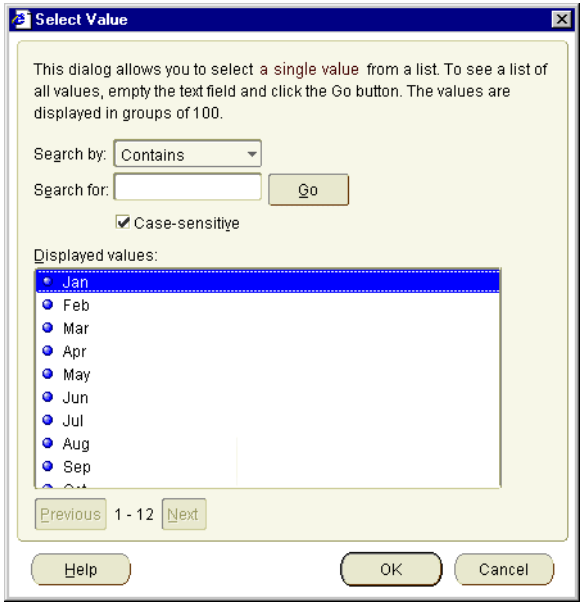
- LOV values are displayed in groups. The size of groups is configured by the Discoverer manager (maximum 100).

How to select single values from long LOVs

When LOVs contain a large number of values, you select single LOV values using the "Select Value dialog". For example, to analyze data from the year 2000, you select 2000 from the LOV.

To select single values from long LOVs:

1. Display the "Select Value dialog".
   - from the "Edit Parameter dialog" or "New Parameter dialog", click the down arrow next to the **What default value do you want to give this parameter?** field, then choose Select values.
   - from the "Edit Condition dialog" or "New Condition dialog", choose Select values from the **Values** drop down list.



2. If the **Displayed values** list contains the value that you want, select the value from the **Displayed values** list.
3. (optional) If you cannot see the value that you want in the **Displayed values** list, do one of the following:
   - use the scroll bar to navigate up and down the values in the current group
   - use the Next and Previous buttons to display the next or previous group of values in the LOV
4. (optional) Limit the values in the **Displayed values** list using the **Search by** and **Search for** fields, as follows:
   a. Use the **Search by** drop down list to specify how you want to match LOV values.

   For example, Starts with or Equals.

   b. Enter a search term in the **Search for** field.

   For example, if you choose 'Starts with', type A to find LOV values that begin with A.

   c. (optional) Select the **Case sensitive** check box to match upper and lower case letters exactly. For example, when selected the value 'CPM' would not find details containing 'Cpm' or 'cpm'.

   Note: For quicker searches, select the **Case-sensitive** check box.

   d. Click Go to start the search.

   Values that match the search criteria are displayed in the **Displayed values** list. Values are displayed in groups. For example, groups of 50 or groups of 100.

   e. Select the value that you want from the **Selected values** list.
5. Click OK to choose the selected LOV value and close the dialog.

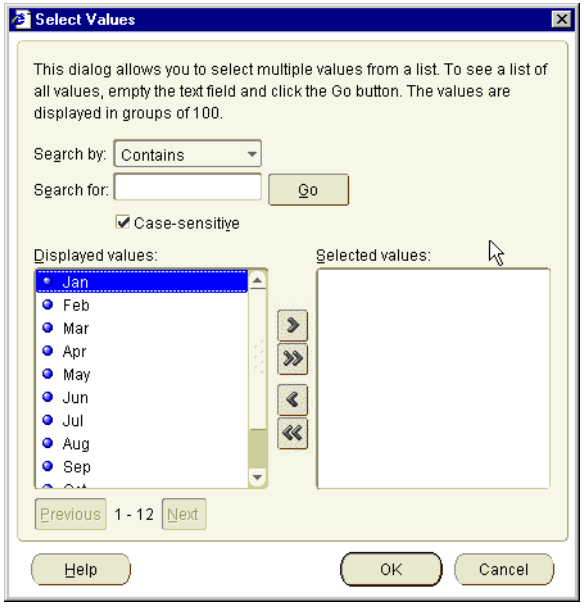
The LOV value that you specify is selected.

How to select multiple values from long LOVs

When LOVs contain a large number of values, you select multiple LOV values using the "Select Values dialog". For example, to analyze data from the values beginning with 'CPM', you select CPM from the LOV.

To select multiple values from long LOVs:

1. Display the "Select Values dialog".
   - from the "Edit Parameter dialog" or "New Parameter dialog", click the down arrow next to the **What default value do you want to give this parameter?** field
   - from the "Edit Condition dialog" or "New Condition dialog", choose Select multiple values from the **Values** drop down list



2. If the **Displayed values** list contains the values that you want, move the values from the **Displayed values** list to the **Selected values** list.
3. (optional) If you cannot see the values that you want in the **Displayed values** list, do one of the following:
   - use the scroll bar to navigate up and down the values in the current group

- use the Next and Previous buttons to display the next or previous group of values in the LOV

4. (optional) Limit the values in the **Displayed values** list using the **Search by** and **Search for** fields, as follows:

   a. Use the **Search by** drop down list to specify how you want to match LOV values.

   For example, Starts with or Equals.

   b. Enter a search term in the **Search for** field.

   For example, if you choose 'Starts with', type A to find LOV values that begin with A.

   c. (optional) Select the **Case-sensitive** check box to match upper and lower case letters exactly. For example, when selected the value 'CPM' would not find details containing 'Cpm' or 'cpm'.

   Note: For quicker searches, select the **Case-sensitive** check box.

   d. Click Go to start the search.

   Values that match the search criteria are displayed in the **Displayed values** list. Values are displayed in groups. For example, groups of 50 or groups of 100.

   e. To select the values that you want in the **Displayed values** list, move LOV values from the **Displayed values** list to the **Selected values** list.

5. Click OK to choose the selected LOV values and close the dialog.

The LOV values that you choose are selected.

Notes

- To deselect LOV values, move LOV values from the **Selected** list to the **Displayed** list.

Changing default settings

This section explains how to use Discoverer's default settings, and contains the following topics:

About default settings

Discoverer's default Graphical User Interface (GUI) settings determine Discoverer's appearance and behavior. You can change the default options to suit your preferences and requirements. For example, you might want new worksheets to have a grey background and blue text. Or you might want to limit the amount of data returned by a query so that worksheets are not too large.

You are advised to only change your default settings in one of the following circumstances:

- you want to change only the default color and style of headings and data in your worksheets
- you are an experienced Discoverer user
- you have been asked to change your default settings by the Discoverer manager

Default settings are applied in the following manner:

- Default options apply when you start working with Discoverer.
- Changes to default settings apply to all subsequent workbooks.
- Changes to default settings do not affect workbooks created previously.
- You can override default settings in worksheets using the Format Sheet options. This applies a new style to worksheet elements but does not change the default settings.

Note: In addition to opening the Options dialog from the menus, you can also open the Options dialog by clicking the Options button in other dialogs (where available). In this case the options might apply only to worksheet components configured by that dialog.

How to change default settings

You change default settings to change Discoverer's appearance and behavior. For example, you might want to:

- change the default background color for worksheets to blue

- turn on automatic querying so that worksheets are refreshed with up-to-date data when you change a worksheet layout

To change default settings:

1. Choose Tools | Options to display the Options dialog at the "Options dialog: General tab".
2. Display the tab for the area that you want to change.

   The table below describes the tabs available on the Options dialog.

Tab	Use to
"Options dialog: General tab"	Specify how Discoverer displays data when worksheets are first opened
"Options dialog: Query Governor tab"	Specify how Discoverer uses summaries, and how Discoverer manages queries
"Options dialog: Sheet Format tabs"	Specify how Discoverer displays worksheets, such as with titles, grid lines, row numbers, and the number of rows per screen
"Options dialog: Default Formats tab"	Specify how Discoverer displays new worksheet headings, data, and totals
"Options dialog: Advanced tab"	Specify how Discoverer uses automatic querying, fan trap detection and resolution, and multiple join paths (for more information on these options, see "Notes on setting Advanced options")
"Options dialog: EUL tab"	Specify a default End User Layer (EUL). The Discoverer manager might have given you access to more than one EUL

3. Click OK at any time to save any changes that you have made and close the Options dialog.
4. Click Cancel at any time to cancel any changes that you have made and close the Options dialog.

Changes to default options that you save take effect when you close the dialog.

Notes

- After changing Default Format options, you can revert to the original default format settings using the Reset option (see "How to revert to the default format settings").
- Do not change options on the Advanced tab or EUL tab setting unless asked to do so by the Discoverer manager.

How to revert to the default format settings

Sometimes, after changing the default formats for a workbook, you might want to revert to the original default format settings. For example, if you change default text fonts to produce a particular style of report, you might want to set the text fonts back to their original default style.

Instead of changing each format setting individually, you can use the Reset facility.

Note: Default formats apply to all worksheets in a workbook.

To revert to original default format settings:

1. Choose Tools | Options to display the Options dialog.
2. Display the "Options dialog: Default Formats tab".
3. Select one or more default formats that you want to reset.

   For example, Date Format or Heading Format.
4. Click the Reset button to revert back to the default settings for the selected default formats.
5. Click OK to close the Options dialog.

If you reset the default formats, these original default formats apply when you close the Options dialog.

Notes on setting Advanced options

If you are a Discoverer manager, or an experienced Discoverer user, the following topics are relevant to the "Options dialog: Advanced tab".

About automatic querying

When automatic querying is turned on, Discoverer automatically re-queries the database to get the up-to-date data every time a worksheet is changed to display different data. For example, when you add or remove an item, or pivot items.

In some circumstances however, you might not want Discoverer to automatically re-query the database every time you change the worksheet layout. For example, you might want to make several changes at once and not perform a re-query until you have finished.

About fan traps

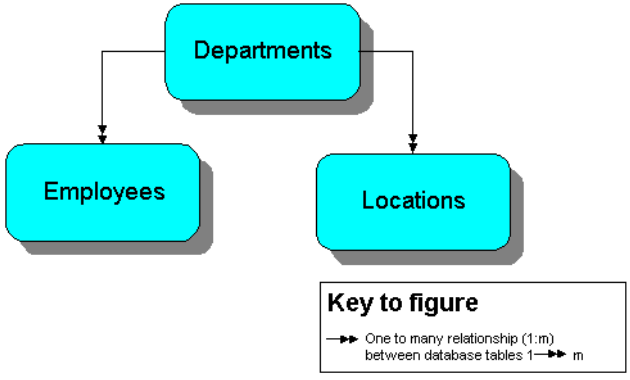
Fan traps occur when the data items in two folders are not directly related but do have a relationship based on the data items in a third folder.

For example, a database contains three tables:

- Departments
- Employees
- Locations

The figure below shows that the Department table is a master table to the Employees table and the Locations table in a relational one to many (1:M) relationship.

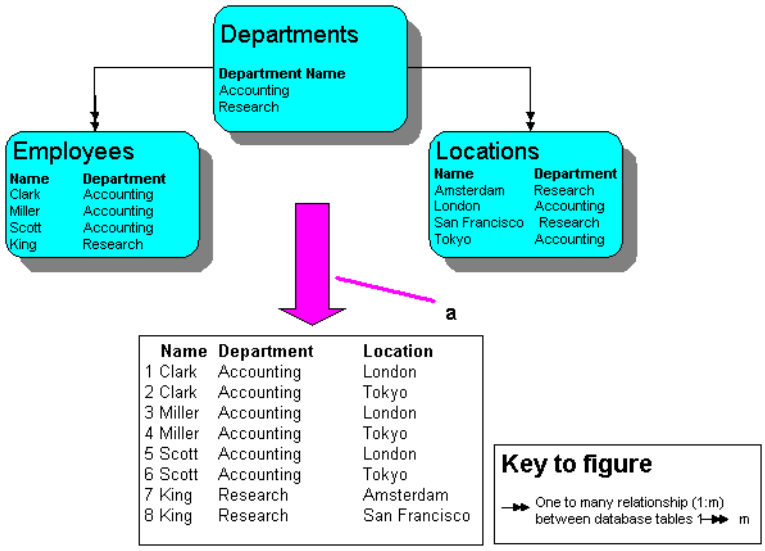
Figure 19–8 A database with three tables



Each employee is associated with a single department because each employee works in only one department. In addition, each employee can only be based in one location. However, departments are associated with multiple locations because departments can have offices in different cities. Consequently, because of the mutual association of employees and locations with the Departments table, employees become unintentionally associated with multiple locations. This is incorrect because employees can only be in one location.

For example, a query to count the number of employees at each location and department produces an incorrect result. The same employee is counted at multiple locations because the departments are at multiple locations. In the example below, the real number of employees is four, but the query produces a count of eight employees. Clark, Miller, and Scott are counted for both London and Tokyo, and King is counted for both Amsterdam and San Francisco. The figure below shows how a query to return the number of employees returns eight rows in a fan trap relationship instead of four rows.

Figure 19–9 Fan trap query results



Key to figure:

a. Query to count the number of employees returns this data

When you create a worksheet, Discoverer automatically detects and resolves fan traps. If the fan trap is not resolvable, Discoverer disallows the worksheet and displays an error message.

For more information about enabling and disabling fan trap detection in Discoverer, see the "Options dialog: Advanced tab".

About multiple join paths

When you create new worksheets, the data items in the worksheets are often stored in multiple folders in the database. Discoverer checks to make sure that:

- multiple folders have an unambiguous relationship between them
- the relationships between data items is also unambiguous

Multiple join paths occur when two tables can be linked in more than one way. For example, a sales order table might be linked to a customer table on the Customer ID field, because both tables contain the field Customer ID. If both tables also contain a field called Location, this provides an alternative join path for the two tables. This is an example of a multiple join path.

Multiple join paths occur when databases are organized so that the relationships between items in different tables are ambiguous. When you create new worksheets, Discoverer can automatically detect and warn you if potential multiple join paths exist. This makes sure that you always get the results that you expect, because you do not associate items in a way that you did not intend.

Multiple join path warnings are not error messages. The warnings merely advises you that the database contains ambiguous relationships. If warnings occur, contact the Discoverer manager who can determine if the database's organization needs to be modified.

Note: To detect and resolve multiple join paths, make sure that the Disable Multiple Join Path Detection option is not selected on the "Options dialog: Advanced tab".

Using SQL

This section is aimed at experienced Discoverer users who are familiar with SQL (Structured Query Language) and who are interested in Discoverer's advanced facilities. Discoverer managers will also find this section useful.

This section contains the following topics:

What is SQL

SQL is a generic programming language used to extract and manipulate data in a database. In other words, SQL enables you to ask a question (known as a query) of the database that the database answers by displaying data.

For example, you might use SQL to ask the question 'Which products sell more than 10,000 per year?'. The database uses SQL to return a list of products that sell more than 10,000, and might also perform other analysis such as sorting, grouping, and totalling of the data.

SQL is a powerful language, but is difficult to learn and use. Although Discoverer itself uses SQL to display and analyze worksheet data, Discoverer users are shielded from underlying SQL.

Why should I be interested in SQL?

Because Discoverer shields Discoverer users from underlying SQL, they do not need to know how SQL works. This enables users with no technical database experience and no knowledge of underlying database structures to perform sophisticated data analysis.

However, in some circumstances, you might want to look at SQL being used by Discoverer. For example, to improve Discoverer performance you might need to look at underlying SQL to make sure that queries are being run efficiently.

What are summaries?

Summaries are database tables that contain commonly accessed, pre-processed data, which gives the following benefits:

- because data is pre-joined and pre-aggregated, Discoverer can access this data more quickly than by using ad hoc query
- this also means that the data is processed once and accessed many times, rather than re-processed every time it is needed

What are summary folders

A summary folder is how Discoverer represents an underlying summary or materialized view. Summaries and materialized views pre-compute and store aggregated data for use in SQL queries.

Summaries are created by the Discoverer manager to improve the performance of Discoverer, to help do your work more quickly and efficiently. Summary tables and materialized views are created as follows:

- a summary table is a table that Discoverer creates.
- a materialized view is the Oracle 8 (and later) server's own summary mechanism.

Note: For more information on summaries and materialized views, refer to the *Oracle8i Data Warehousing Guide*.

What is an execution plan?

An execution plan is a sequence of operations that the Oracle Server performs to execute a SQL statement.

About the Discoverer execution plan

When looking at the underlying SQL that Discoverer is using, use the Discoverer execution plan tab to look the underlying execution plan being used.

You can look at an execution plan to see how a SQL statement is being executed. For example, when using Summaries, you might want to check that a query is using a summary or materialized view created by the Discoverer manager.

About viewing the SQL and execution plan with an Oracle 8 and later database

When running Discoverer against an Oracle 8 and later database, the server controls query redirection by rewriting the SQL to use materialized views. If a server rewrite occurs, the server Execution Plan tells you the name of the materialized view being used.

For information about materialized views and server rewrites, refer to the *Discoverer Administrator Manager's Guide*. Contact the Discoverer manager for more information.

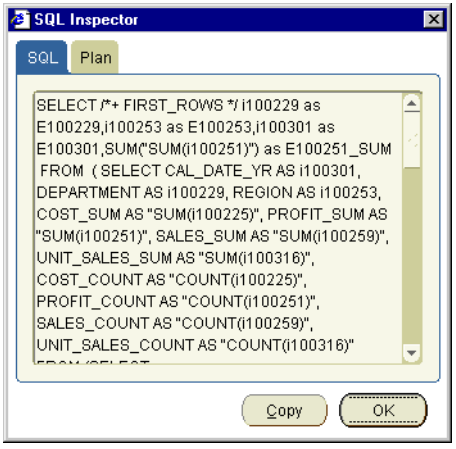
Note: With a pre-8.1.6 database, you can look in the SQL tab on the SQL Inspector dialog to see the name of the summary being used.

How to view SQL

You view SQL created by Discoverer when you want to see the underlying SQL instructions that Discoverer is using to display the current worksheet.

To view SQL created by Discoverer:

1. Choose Sheet | Show SQL to display the SQL Inspector dialog.
2. Display the SQL Inspector: SQL tab to look at the underlying SQL.



3. (optional) To copy the SQL text into memory, click Copy.

   You can then switch to a different application and paste in the text. For example, you might want to paste this text into a text editor, edit the text, then save in a SQL file to that you can execute the file using SQL*Plus.

4. Click OK to close the SQL Inspector dialog and return to the worksheet.

Notes:

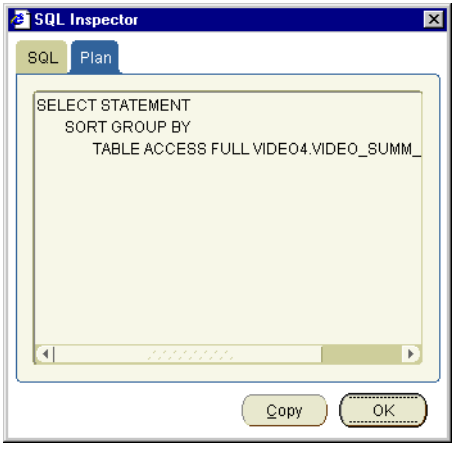
- The SQL Inspector dialog might show a shortened version of the SQL that Discoverer sends to the RDBMS. Depending on how Discoverer is configured, inline views might be removed to make the SQL statement more legible. Contact the Discoverer manager for more details about how the SQL Inspector dialog is configured.

How to view a SQL execution plan

You view a SQL Execution Plan when you want to see the underlying instructions that Discoverer is sending to the server.

To view the execution plan used by Discoverer:

1. Choose Sheet | Plan to display the SQL Inspector dialog.
2. Display the SQL Inspector: Plan tab to look at the underlying execution plan.



3. (optional) To copy the execution plan text into memory, click Copy.

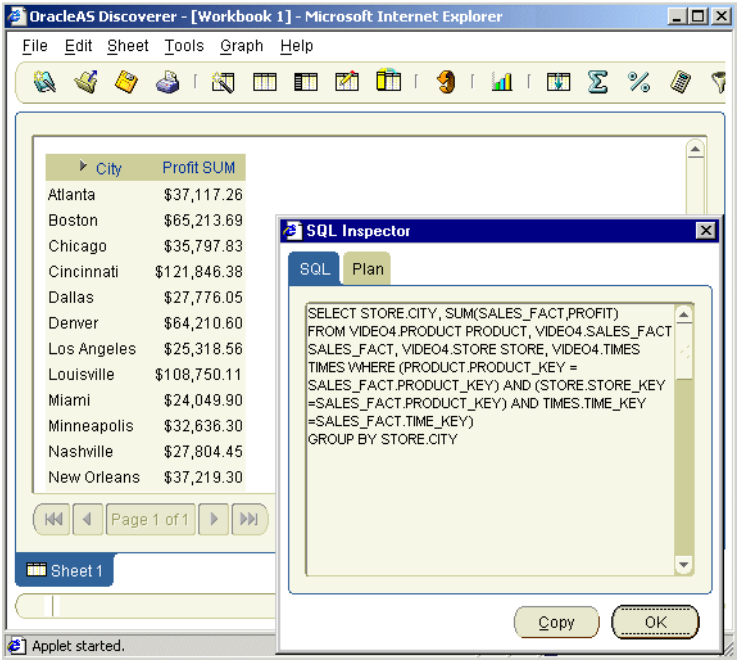
   You can then switch to a different application and paste in the text.
4. Click OK to close the SQL Inspector dialog and return to the worksheet.

SQL Examples

Looking at an execution plan when using an Oracle 8 and later database

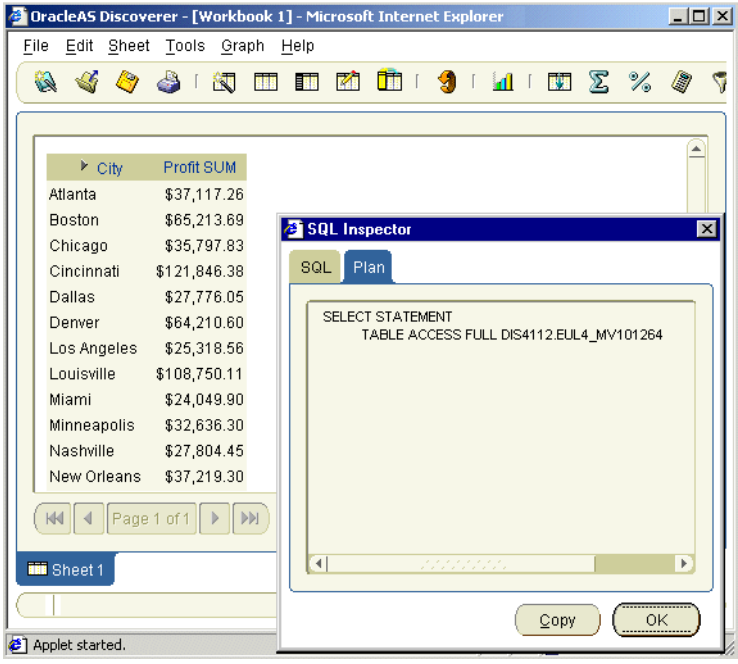
You can use the Execution Plan tab in the SQL Inspector dialog to see the SQL statement that Discoverer sends to the server.

Figure 19–10 SQL Inspector: SQL tab



In the figure above, the worksheet contains the City and Profit SUM items. Although the Discoverer manager has created a Summary for these items, the SQL statement displayed in the SQL Inspector: SQL tab does not indicate whether a summary or materialized view is being used. To find out, look at the SQL Inspector: Plan tab (see figure below).

Figure 19–11 SQL Inspector: Plan tab



In the figure above, the SQL Inspector Plan: Plan tab shows that a materialized view (called EUL4_MV101264) is being use to retrieve information from the database.

Hint: Names of Materialized views created by Discoverer are prefixed with the EUL name followed by 'MV' and the materialized view ID.

Part V

Discoverer Plus Reference

This part contains reference information about each Discoverer dialog.

This part contains the following chapters:

- "Reference dialogs"

20

Reference dialogs

Reference dialogs

This chapter contains comprehensive reference information for each dialog in Discoverer Plus. Dialogs are listed in alphabetical order:

Band by Rank dialog

Use this dialog to create a band by rank calculation. A band by rank calculation creates a number of bands (e.g. quartiles) and places each value into one of the bands according to its league table position. In other words, each band contains the same number of values. For example, if you have 1000 values you might want to create four bands (i.e. quartiles), each containing 250 values.

Note: If you want to analyze the distribution of values, you might want to use a band by value calculation instead (for more information, see "Band by Value dialog").

For more information, see:

"What are analytic functions?"

"How to create a new calculation using an analytic function template"

"Banding function examples"

Number of bands

Use this field to enter the number of bands into which you want to assign values. For example, type 4 to assign values into quartiles.

Rank based on

Use this drop down list to choose the item for which want to calculate the rank. For example, to calculate the relative position of sales outlets based on sales, you might choose Sales SUM.

Use the adjacent drop down list to specify the ranking order. For example, you might choose Highest Value Ranked 1 if you want sales outlets with the highest sales to be in band 1.

Then rank based on

Use this drop down list to choose an item for which you want to calculate a secondary rank, which is used to determine the rank when two values have the same primary rank (i.e. based on the item specified in the **Rank based on** field).

Use the adjacent drop down list to specify the ranking order. For example, you might choose Lowest Value Ranked 1 if you want sales outlets with the highest sales and the lowest costs to have the highest league table positions.

Restart banding at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, if you want quartiles for each year, you might choose Calendar Year. In other words, if you have Sales SUM values spanning two years, you will have four bands for each year.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

Band by Value dialog

Use this dialog to create a band by value calculation. A band by value calculation creates a number of bands (sometimes referred to as buckets) and places each value into one of the bands according to the value. In other words, each band can contain a different number of values. For example, you might want to know how sales values are distributed over bands $0 to $49, $50 to $99, $100 to $150.

This type of analysis is sometimes referred to as frequency distribution.

Note: If you want to create bands containing an equal number of values (e.g. quartiles), you might want to use a band by rank calculation instead (for more information, see "Band by Rank dialog").

For more information, see:

"What are analytic functions?"

"How to create a new calculation using an analytic function template"

"Banding function examples"

Number of bands

Use this field to enter the number of bands into which you want to assign values. For example, type 4 to assign values into four bands.

Note: The range of each band is calculated as the maximum value in the group minus the minimum value in the group divided by the number of bands.

You can override the default maximum and minimum values using the **Highest value** and **Lowest value** fields.

Band values of

Use this drop down list to specify which worksheet values you want to put into bands. For example, choose Sales SUM to divide sales totals into a number of bands.

Use the adjacent drop down list to specify the banding order. For example, you might choose Highest Value in Band 1 if you want stores with the highest sales to be in band 1.

Lowest value

Use this field to specify a minimum value that is different from the minimum value in the group. You must clear the **Use minimum value** check box to activate the **Lowest value** field.

For example, you might have a wide range of sales figure with a minimum value that is exceptionally low. You might want to exclude the exceptionally low value from the lowest band.

If you select the **Use minimum value** check box, Discoverer specifies the minimum value for you.

Highest value

Use this field to specify a maximum value that is different from the maximum value in the group. You must clear the **Use maximum value** check box to activate the **Highest value** field.

For example, you might have a wide range of sales figures with a maximum value that is exceptionally high. You might want to exclude the exceptionally high value from the highest band.

If you select the **Use maximum value** check box, Discoverer specifies the maximum value for you.

Restart banding at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, to analyze the distribution of sales across each year, you might choose Calendar Year. In other words, if you have Sales SUM values spanning two years, you will have a set of bands for each year.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

Choose a responsibility dialog

Use this dialog to choose which responsibility you want to connect as when you connect to Discoverer as an Oracle Applications user. Discoverer displays this dialog when the Oracle Applications username that you are using has more than one responsibility assigned to it.

For more information, see:

"What are Oracle Applications?"

You can connect as any of the following responsibilities. Please choose one.

Use this list to select the responsibility that you want to connect as.

Notes

- For more information about responsibilities available in your organization, contact the Discoverer manager.

Data Format dialog

Use this tab to change the default text style for new worksheet items.

Note: Changing the default text style does not change the text style for existing worksheet items. Choose Sheet | Format to change the format of existing worksheet items.

For more information, see:

"About editing worksheets"

Font

Use this drop down list to specify a text font.

Size

Use this drop down list to specify a font size.

Style

Use this drop down list to specify a font style (for example bold, italic, underlined, or sans-serif).

Color

Text

Use this color pane to specify a color for the item text.

Alignment

Use these buttons to set the horizontal text alignment (where applicable).

Actual font size

Use this check box to display text in the example area in the font size and style selected.

Delete Scheduled Workbook Results dialog

Use this dialog to see which scheduled workbook results will be removed permanently from the database. These scheduled workbook results have been produced when scheduled workbooks are processed, according to the schedule defined. For example, a daily report is produced once per day.

For more information, see:

"What are scheduled workbooks?"

"About how scheduled workbooks are processed?"

The scheduled workbook results below will be deleted:

Use this list to look at which workbook results will be deleted, and the date and time that the workbook results will be deleted.

Don’t show this window again, and delete results automatically on exit.

Use this check box when you want Discoverer to delete expired workbook results automatically without displaying this dialog.

Notes

- The **Delete results after _ days** field on the "Schedule Wizard dialog: Schedule tab" is used to specify when to delete results.
- Unless a scheduled workbook is configured to run only once, a new set of results will be recreated when the workbook is next processed according to the schedule defined. For example, a weekly report will be processed in the following week.

Delete Workbooks from Database dialog

Use this dialog to remove workbooks that you no longer need. You cannot undo this procedure to retrieve deleted workbooks. Before removing workbooks, check that workbooks are not being used by other Discoverer users.

For more information, see:

"What are workbooks?"

Choose workbooks to delete

Use this list to specify which workbooks to delete.

Delete

Use this button to remove the selected workbooks permanently from the Discoverer database.

Notes

- If you delete the workbook that you currently have open, the workbook is removed from the database but remains in your Discoverer session. Close the workbook without saving if you no longer need the workbook.
- You can select more than one workbook by pressing the Ctrl key and clicking another workbook.

Difference dialog

Use this dialog to create a difference calculation. A difference calculation typically calculates the change in values across time. For example, you might want to calculate the change in sales from the previous month.

This type of analysis is sometimes referred to as LAG/LEAD analysis.

Note: If you want to calculate the change in value over time as a percentage, use the Percent Difference calculation (for more information, see "Percent Difference dialog").

For more information, see:

"What are analytic functions?"

"Examples of using row-based and time-based intervals"

"How to create a new calculation using an analytic function template"

"LAG/LEAD function examples"

Compare values of

Use this drop down list to choose which item you want to analyze. For example, you might choose Sales SUM to calculate the change in sales totals over time.

Preceding value

Use this drop down list to specify the number of rows or the number of time periods in which you want to compare the values. For example, you might choose '3' to calculate the difference in sales compared to three months previously.

Use the adjacent drop down list to choose a row-based interval or a time-based interval. For example, you might choose 'Months Before Current Value' to compare sales values with earlier sales values.

Hint: If you have time-based data, use time-based groups (e.g. Days/Weeks/Months Before Current Value). If you do not have time-based data, use row-based groups (e.g. Rows Before Current Value). For more information about types of group, see "About windowing".

For examples of specifying row-based and time-based intervals, see "Examples of using row-based and time-based intervals".

Order rows by

Use this drop down list to specify how to order the worksheet values. For example, you might choose Calendar Month to compare sales with the previous months sales.

Use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Hint: If you have specified a time-based group in the **Preceding value** drop down list, specify a time-based item (e.g. Calendar Month) in the **Order rows by** field.

Then order rows by

Use this drop down list to specify a secondary order for the values. For example, you might choose City to sort values on city within month. Then use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Note: This drop down list is only enabled if you specified a row-based group in the **Preceding value** drop down list. This drop down list is only disabled if you specified a time-based group in the **Preceding value** drop down list.

Restart calculation at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, to calculate the difference in Sales SUM values within year, you might choose Calendar Year.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

Notes

- A difference calculation will return a null value if there is no preceding value with which to compare.

Edit Calculation dialog

Use this dialog to change the way that the currently selected calculation item behaves. For example, to changes its name, description, or formula.

For more information, see:

"What are calculations?"

"Simple calculation examples"

"Oracle8i analytic function examples"

"Oracle9i analytic function examples"

What do you want to name this calculation?

Use this field to enter a descriptive name for the calculation item. This name is displayed in calculation lists and on worksheets as the column header of the calculation results column. If you leave this box blank, Discoverer creates a default name for you.

Show

Use this drop down list to display calculations, functions, items and parameters that you can use to build a calculation. To include items in the calculation, paste them into the **Calculation** field.

Use the **Show** list options as follows:

- Use the Functions option to display an extensive list of predefined Oracle functions.
- Use the Selected option to display items in the worksheet.
- Use the Available option to display all items in the business area.
- Use the Calculations option to display existing worksheet calculations.
- Use the Parameters option to display existing worksheet parameters. When you add parameters to the **Calculation** field, the parameter name is prefixed with ':' to indicate that it is a dynamic value set by the worksheet user. For more information about adding parameters to calculations, see "About using parameters to collect dynamic user input".

Paste

Use this button to the add the item currently selected in the **Show** list to the Calculation. The item is copied into the **Calculation** field.

Calculation

Use this field to enter the calculation details (for calculation examples, see "Discoverer calculation examples").

To create a calculation, you one or more of the following methods:

- Type the formula directly into the **Calculation** field.

  Note: If you type an expression in the **Calculation** field, you must prefix the expression with an equals sign (i.e. =). For example, '=Sales SUM-Costs SUM'.

- Paste items and functions from the **Show** field into your calculation.
- Click the operator buttons underneath the **Calculation** field to use them in the calculation.
- Use a template to help you define an analytic function. Click Insert Formula from Template (see **Insert Formula from Template** field below).

Insert Formula from Template

Use this button to display a pop-up list of templates that you can use to build analytic functions. For example, choose Rank to display an easy-to-use Rank template that helps you create a league table position calculation. For more information about templates available, see "What analytic function templates are available in Discoverer".

Operator buttons [+] [-] [x] [/] [%] [(] [)] [||]

Use these buttons to add operators to the calculation. Operators are copied into the **Calculation** field.

Note: When you use arithmetic expressions in a calculation, the multiply and divide operators are executed first, regardless of their position in the calculation. If you have more than one operator of the same precedence, they are evaluated from left to right.

For example, the calculation Price – Discount * Quantity is evaluated as Discount*Quantity subtracted from Price. If you use parentheses around the subtraction expression (Price – Discount), the subtraction is executed before the multiplication.

OK

Use this button to validate and save the calculation, as follows:

- If the calculation has valid syntax, the calculation is saved and displayed in the Calculations dialog.
- If the calculation has invalid syntax, an error message is displayed. You must correct any syntax errors before you can save the calculation.

Notes

- The table below shows the functions available in the box beneath the **Show** drop down list.

Category	Description
All Functions	An alphabetical list of all functions.
Analytic	Advanced statistical analysis, such as RANK, NTILE, CORR.
Conversion	Converting from one data type to another, such as: RAWTOHEX, TO_CHAR, TO_DATE.
Database	Optional category that is displayed when user defined functions are available (created using the Register PL / SQL Functions facility on the Tools menu in Oracle Discoverer Administrator).
Date	Manipulating date items such as ADD_MONTHS, NEW_ TIME, SYSDATE and NEXTDATE.
Group	Aggregate and statistical functions including SUM, COUNT, MAX, MIN, VARIANCE.
Numeric	Numeric items and floating point such as COS, LOG, MOD, POWER.
Others	Miscellaneous functions such as LEAST, USER, DECODE, ROWNUM.
String	Character items, text operations such as INITCAP, LPAD, NLS_UPPER.

- For detailed information about all functions available in Discoverer, see *Oracle8i/9i SQL Reference* and *Oracle8i/9i Data Warehousing Guide.*
- For examples of the most commonly used functions, see "Discoverer calculation examples".

Edit Condition dialog

Use this dialog to change the way that the currently selected condition item behaves. For example, you might want to change its name, description, or the way that it filters data in the worksheet.

For more information, see:

"What are conditions?"

"About using conditions"

What would you like to name your condition

Use this field to enter a descriptive name for the condition item. This name is displayed in the condition list on the Conditions dialog.

Generate name automatically?

Use this check box if you want Discoverer to create a default name for you. The default name is based on the condition syntax.

What description would you like to give your condition

Use this field to enter a brief description for the new condition. This description is displayed in the description box on the Conditions dialog and helps workbook users choose which condition they want to use.

Formula

This area is where you build the condition. The condition can contain one or more condition statements.

Item

Use this drop down list to filter the worksheet by selecting an item to match against. For example, to filter information about people whose salary is more than $30,000, you might choose an item called 'Salary' here.

You can also choose from the following options:

- If you want to add an existing condition, choose Select Condition... to display the "Select Condition dialog".
- If you want to insert a calculation to use in the condition formula, choose Create Calculation... to display the "New Calculation dialog".

Condition

This drop down list displays a list of logical operators that you can use to match against the Item selected. For example, to filter information about people who earn more than $30,000, you might choose the 'greater than' operator (>) here.

For more information on logical operators available, see Notes below.

Values

Use this field to enter one or more values that you want to use to match against the selected Item. For example, if you want filter information about people who earn more than $30,000, enter 30,000 here.

You can also choose from the following options:

- If you want to match the selected item against a new calculation, choose Create Calculation to display the "New Calculation dialog".
- If you want to match the selected item against an existing worksheet item, choose Select Item to display the "Select Item dialog".
- If you want to match the selected item against a new worksheet parameter, choose New Parameter to display the "New Parameter dialog".
- If you want to match the selected item against an existing parameter, choose Select Parameter to display the "Select Parameter dialog".

Note: You can enter up to 254 values in this field. If you want to enter more than 254 values in the condition, click Advanced and use the OR option to add a new condition statement line for the extra values.

Case sensitive

Use this check box to make the condition case sensitive when matching against text data. For example, if turned on, the value 'New York' would not find details containing 'NEW YORK' because the text cases do not match exactly. If turned off, the value 'New York' would find details containing 'NEW YORK' and 'new york'.

Advanced

Use this button to expand the dialog box enabling you to apply multiple condition statements to an item. The expanded dialog displays New Item, And, Or, Delete and Undo buttons. A Group column is also added to the Formula box (see Group below).

Expanded Advanced options

New Item

Use this button to add a new condition statement line to the condition. By default, new condition statement lines are grouped with the logical AND operator. In other words, the data must satisfy both condition statements to be filtered in the worksheet (see Group below).

And

Use this button to add a new condition statement line to the condition and group it with the previous condition statement line with a logical AND operator. Using 'AND' narrows a search to display only items that match all criteria. For example, with two condition statements, data must match condition statement one and condition statement two.

Or

Use this button to add a new condition statement line to the condition and group it with the previous condition statement line with a logical OR operator. Using 'OR' widens a search to display items that match any of the criteria. For example, with two condition statements, data must match *either* condition statement one or condition statement two. (In SQL terms, this is an *inclusive* OR clause.)

Delete

Use this button to remove the currently selected condition statement line from the condition.

Undo

Use this button to retrieve the deleted condition details if you delete a condition statement line from the condition and then change your mind.

Group

AND

Use this button to change the Group operator to a logical ‘AND’. You must have the current Group item selected. Using 'AND' narrows a search to display only items that match all criteria in the group.

OR

Use this button to change the Group operator to a logical 'OR'. You must have the current Group item selected. Using 'OR' widens a search to display items that match any of the criteria in the group.

NOT AND

Use this button to change the Group operator to a logical 'NOT AND' operator.

NOT OR

Use this button to change the Group operator to a logical 'NOT OR' operator.

Notes

- The following table describes logical operators available when matching data against items.

Operator	Meaning	How it is used
=	equals	Year = 2001 Display only data for the year 2001.
<>	Not equals	Year <> 2001 Display data where the year is not 2001
>	Greater than	Clicks > 10 Display data where the number of clicks on a website is more than 10
<	Less than	Salary < 50,000 Display data for people who earn less than 50,000
LIKE	Similar to	Employee_name LIKE CH% Display data for employees whose name begins with CH.
IN	Equal to any member of	WHERE job IN ('CLERK','ANALYST');

Edit Heading dialog

Use this tab to specify a display name for the current worksheet item. This name appears on the worksheet.

For more information, see:

"About editing worksheets"

Heading

Use this field to enter a new heading for the item.

For example, you might want to change the heading '% incr' to 'Percentage Increase'.

Edit Parameter dialog

Use this dialog to change the way that the currently selected parameter item behaves. For example, you might want to changes the parameter's name, description, prompt, or default values.

For more information, see:

"What are parameters?"

"About using parameters"

What do you want to name this parameter?

Use this field to enter a descriptive name for the parameter. This name is displayed in the parameter list on the Parameter dialog. If you leave this box blank, Discoverer creates a default name for you.

This parameter is based on the item named

This read-only box displays the name of the item on which the parameter is based. If you want to create a parameter based on a different item, create a new parameter.

What prompt do you want to show other users?

Use this field to enter a question or instruction that describes the parameter value that the user should enter. This prompt is displayed on the Edit Parameter Value dialog. For example, 'What year do you want to look at?', or 'Please choose a region'. If you leave this box blank, Discoverer creates a default prompt for you.

What description do you want to show other users?

Use this field to enter a brief description of the parameter that tells users what the parameter is used for. This description is displayed on the parameter list on the Parameters dialog, and on the Edit Parameter Values dialog.

What default value do you want to give this parameter?

Use this field to enter the most commonly used parameter value as default on the Edit Parameter Values dialog. If users do not enter a value, the value that you enter here is used.

Let other users select multiple values?

Use this check box if you want users to be able to choose more than one value to match against the item.

Note: Clear this check box if you selected <NONE> from the **Which item do you want to base your parameter on?** drop down list. If a Discoverer end user enters more than one parameter value, only the first parameter value is used.

Do you want to allow different parameter values for each worksheet?

- Use the **Allow only one set of parameter values for all worksheets** radio button to make parameter values cascade across all worksheets in the workbook.
- Click the **Allow different parameter values for each worksheet** radio button to limit parameter values to the current worksheets.

Edit Parameter Values dialog

Use this dialog to enter dynamic input values for active workbook or worksheet parameters. You do this by specifying parameter values, which are typically used to:

- provide input to conditions that are used to filter worksheets - for example, when prompted to choose a month, you might enter 'January' to look at data for January only
- provide input to calculations - for example, when prompted to choose a rolling average value, you might enter '3' to calculate a three month rolling average

For more information, see:

"What are parameters?"

"About using parameters"

Please select values for the following parameters:

<Parameter list>

This area contains one or more fields into which you enter parameter values. Each field has a prompt (typically an instruction or question) telling you what value to enter. For example, if the prompt is 'Please choose a month', enter 'January' to specify a month to analyze.

Use the down arrow next to each item to select from a list of valid values.

If the list of values in the drop down list is too long to display on screen, the "Select Value dialog" or "Select Values dialog" is displayed. These dialogs enable you to search for and select the values that you want to use. For more information, see "Using lists of values (LOVs)".

Note: When you have filtered the data, you can change the parameter value at any time by choosing Sheet | Edit Parameter Value.

Edit Percentage dialog

Use this dialog to change the way that the currently selected percentage item behaves. For example, you might want to changes its name, description, or how it is calculated.

For more information, see:

"What are percentages?"

What do you want to name this percentage?

Use this field to enter a descriptive name for the percentage item. This name is displayed in percentage lists and on worksheets as the column header of the percentage item. If you leave this box blank, Discoverer creates a default name for you.

What data point do you want to base your percentage on?

Use this drop down list to select which item you want to base your percentage on. The list displays numeric items available to the worksheet.

Calculate as a percentage of:

Use these radio buttons to choose how the percentage is calculated.

- **Grand total of all values**

  Use this radio button to calculate a percentage of all values.

- **Grand total for each column**

  Use this radio button to calculate a percentage for the item column (specific to crosstab worksheets).

  Note: This field is only displayed when you add a total to a crosstab worksheet.

- **Grand total for each row**

  Use this radio button to calculate a percentage for the item row (specific to crosstab worksheets).

  Note: This field is only displayed when you add a total to a crosstab worksheet.

- **Subtotal for each change in**

  Use this radio button to calculate a percentage for a sub-group. Select an item from the drop down list below to define the item that you want to sub-group.

For example, to calculate a percentage total for each calendar year, you might choose 'Year' here.

Do you want to calculate percentages within each page?

Use these radio buttons to choose whether to calculate the percentage for each page, or for all pages.

Note: You only use these radio buttons if the worksheet has page items.

- **Calculate percentages with each page**

  Use this radio button to calculate percentages for data on the current page. For example, if Region is displayed in the **Page Items** area, you might want to calculate how sales for each quarter contribute to total sales for the each region.

- **Calculate percentages across all pages**

  Use this radio button to calculate percentages for all pages. For example, if Region is displayed in the **Page Items** area, you might want to calculate how sales for each quarter contribute to total sales for the all regions.

Example

This area shows you how your worksheet will look according to what options you specify.

Which totals do you want to be shown?

Use these options to specify how you want totals and sub totals to be displayed.

Show grand total and grand total percentage?

Use this check box to display a sum of all values and a sum of the percentages (specific to the **Grand total for all values** option).

Label

Use this field to define the grand total percentage label that will appear on the worksheet (if selected). To enter a different label, click the down arrow on the right of the field. To format the label, click the Format button and choose how you want the label to look on the worksheet.

Show subtotals and subtotal percentage

Use this check box to display a subtotal for values in the item group, and a percentage for the subgroup (specific to the **Subtotal at each change in** option).

Note: This field is only displayed when you add a total to a crosstab worksheet.

Label

Use this field to define the subtotal percentage label that will appear on the worksheet (if selected). To enter a different label, click the down arrow on the right of the field. To format the label, click the Format button and choose how you want the label to look on the worksheet.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Format Data

Use this button to display the "Format Data dialog", where you change how the values look on the worksheet.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Format Heading

Use this button to display the "Format heading dialog", where you change how the item headings look on the worksheet.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Show the percentage of the grand total for each subtotal

Use this check box to display a subtotal as a percentage of the grand total.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Label

Use this field to define the grand total percentage label that will appear on the worksheet (if selected). To enter a different label, click the down arrow on the right of the field. To format the label, click the Format button and choose how you want the label to look on the worksheet.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Format Data

Use this button to display the "Format Data dialog", where you change how the values look on the worksheet.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Format Heading

Use this button to display the "Format heading dialog", where you change how the item headings look on the worksheet.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Edit Scheduled Workbook dialog

Use this dialog to configure scheduled workbooks.

This dialog is also displayed as:

Copy Scheduled Workbook dialog

For more information, see:

"Edit Scheduled Workbook dialog: General tab"

"Edit Scheduled Workbook dialog: Parameter values tab"

"Edit Scheduled Workbook dialog: Schedule tab"

Edit Scheduled Workbook dialog: General tab

Use this dialog to specify a description for a scheduled workbook. For example, you might want to change the description of a scheduled workbook.

This dialog is also displayed as:

Copy Scheduled Workbook dialog: General tab

For more information, see:

"What are scheduled workbooks?"

"About how scheduled workbooks are processed?"

What do you want to name this scheduled workbook?

(Read-only) This field displays the name of the workbook being scheduled.

Note: When you are using the Copy option, you can use this field to change the name of the workbook being scheduled. This name will be used to identify the workbook in Discoverer.

What description do you want for this scheduled workbook?

Use this field to enter additional information about the workbook. This information is used by workbook users to decide whether they want to open the workbook.

Which worksheet(s) do you want to include in this scheduled workbook?

Use this list to specify which worksheets you want to include in the scheduled workbook.

- To include a worksheet, select the check box next to the worksheet.

Notes

- For more information about scheduled workbooks, contact the Discoverer manager.

Edit Scheduled Workbook dialog: Parameter values tab

Use this dialog to change parameter values required by worksheets. For example, you might enter '2001' when you only want to schedule data for the year 2001.

This dialog is also displayed as:

Copy Scheduled Workbook dialog: Parameter values tab

For more information, see:

"What are scheduled workbooks?"

"About how scheduled workbooks are processed?"

"What are parameters?"

"About using parameters"

Worksheet

Use this drop down list to select the worksheet whose parameters you want to edit. The drop down list contains worksheets being scheduled that have active parameters.

Parameter list

This area contains one or more fields into which you enter a parameter value. Each field has an instruction or question telling you what value to enter. For example, if the prompt is 'Please choose a year', enter '2001' to see data for that year.

Use the down arrow next to each item to select from a list of valid values.

If the list of values in the drop down list is too long to display on screen, the "Select Value dialog" or "Select Values dialog" is displayed. These dialogs enable you to search for and select the values that you want to use. For more information, see "Using lists of values (LOVs)".

Edit Scheduled Workbook dialog: Schedule tab

Use this dialog to specify when you want the scheduled workbook to be processed automatically on the Discoverer server. For example, you might want to process a workbook at 1.00 a.m. every Sunday morning.

This dialog is also displayed as:

Copy Scheduled Workbook dialog: Schedule tab

For more information, see:

"What are scheduled workbooks?"

"About how scheduled workbooks are processed?"

When do you want to schedule this workbook?

Use these fields to specify when you want to process the scheduled workbook.

Time

Use this field to specify the time at which want to process the scheduled workbook. The current time is entered by default.

Date

Use this field to specify the date on which want to process the scheduled workbook. The current date is entered by default.

How often do you want to schedule this workbook?

Use these fields to specify how often you process this scheduled workbook.

Never

Use this radio button when you want to process a one-time-only scheduled workbook. For example, for an occasional report requested by your manager.

Repeat every

Use this radio button when you want to process a scheduled workbook regularly. For example, once per day or once per month.

Do you want to keep all versions of results?

Use these fields to specify whether to store scheduled workbook results or over-write the previous set of results each time. If a report is run frequently, using this option might require a large amount of database space - contact the Discoverer manager for more details.

Yes, keep all results

Use this radio button to store the results each time a scheduled workbook is processed. Use this option when you want to store historical data.

No, just keep the latest set of results

Use this radio button to store only the latest set of scheduled workbook results. Use this option when you do not want to store historical data.

How long do you want to keep the results?

Delete results after _ days

Use this field to specify how long you store the latest set of scheduled workbook results. For example, if you process a weekly report, you might delete the results after seven days to minimize the amount of database space used.

Notes

- For more information about scheduling, contact the Discoverer manager.

Edit Title dialog

Use this dialog to change the worksheet title that is displayed at the top of a worksheet. For example, you might want to display the worksheet name and current date at the top of a worksheet.

For more information, see:

"What are worksheets?"

"How to create or edit a worksheet title"

"How to display or hide a worksheet title"

Font

Use this drop down list to specify a text font for the worksheet title.

Size

Use this drop down list to specify a text size for the worksheet title.

Color

Use this color pane to specify a text color for the worksheet title.

Formatting buttons

Use these buttons to change font style and text alignment options for the text selected in the **Title** field. For example, use the B button to embolden text or use the U button to underline text.

Background color

Use this color pane to specify a background color for the worksheet title area.

Title

Use this field to enter the text that you want to display at the top of the worksheet. You can enter text and text variables into the **Title** field up to a total maximum length of 4096 characters (language dependent).

Note: The worksheet title displayed at runtime can be more than 4096 characters (e.g. if text variables are displayed).

This text is also displayed when you print or export the worksheet.

Hint: To cut and paste a title into the **Title** field, click inside the Title field and paste in the text. For example, on a Windows client click Ctrl + v to paste text.

Insert

Use this button to display a drop down list of text variables (e.g. current date, current time) that you can insert into the worksheet title.

Hint: Before you insert a text variable, place the cursor inside the **Title** field in the position at which you want to insert the text variable.

The value of a text variable is updated when a worksheet is displayed, printed, or exported. In other words, if you display the Current Date variable on a worksheet, the date value is updated each time the worksheet is displayed, printed, or exported. For example, if you insert the Current Date variable into a worksheet title, the worksheet title might display 'January 1 2003' if you access the worksheet on January 1st.

Notes

- On a new worksheet, the default title text is 'Double-click here to edit the title', which you can change if you want to display a worksheet title. You need to either change the title text or hide the worksheet title.
- If you do not change the default title, the **Title** field displays 'Empty title'. You can also clear the default title text and display an empty title on the worksheet. For example, you might want to deploy a worksheet to Discoverer Plus users with an empty title field into which they can add text.
- If you want to hide the worksheet title, clear the **Title** check box on the options dialog (for more information, see "How to display or hide a worksheet title").
- When you insert the Current date and Current time text variables into the **Title** field, you display the date and time on the Discoverer Web server.
- If the worksheet was created in Discoverer Desktop with worksheet exceptions applied, you can insert the Exceptions text variable into the **Title** field.
- If you apply a format to a text variable, the format is applied to all characters in that text variable when the value is displayed on the worksheet. In other words, you cannot apply different formats to individual characters in a text variable.

Edit Total dialog

Use this dialog to change the way that the currently selected total item behaves. For example, you might want to change its label, the type of total used, or how it is calculated.

For more information, see:

"What are totals?"

"About SUM and Cell SUM"

Which data point would you like to create a total on?

Use this drop down list to specify which items you want to create a total for. You can specify a particular item or choose all items.

What kind of total do you want?

Use this drop down list to specify what type of total you want.

Where would you like your total to be shown?

Use these radio buttons to specify where to display the total.

- **Grand total at bottom**

  Use this radio button to display a grand total of all values in the worksheet.

- **Grand total on right**

  Use this radio button to display a total for the item row.

  Note: This field is only displayed when you add a total to a crosstab worksheet.

- **Subtotal at each change in**

  Use this radio button to calculate a total for a sub-group. Select an item from the drop down list below to define the item that you want to sub-group. For example, to calculate a total for each calendar month, you might choose 'Month' here.

Don’t display total for a single row

Use this check box to not display a total for a single row, where the row and total would have the same value.

Note: This field is called **Don’t display total for single rows or columns** when you add a total to a crosstab worksheet.

Do you want to calculate totals within each page?

Use these radio buttons to choose the scope of the total. For example, if a worksheet contains page items (i.e. items are displayed in the **Page Items** area), you might want to display a total at the bottom of each page.

- **Calculate totals with each page**

  Use this radio button to apply the total to data displayed on the worksheet. For example, if Calendar Month is displayed in the **Page Items** area, you display a grand total for each month.

- **Calculate totals across all pages**

  Use this radio button to apply the total to all data in the worksheet. The total takes into account other page items not currently displayed on the worksheet. For example, if Calendar Month is displayed in the **Page Items** area, you display a grand total for all months.

Example

This area shows you how your worksheet will look according to what options you specify.

What label do you want to be shown?

Use this field to specify what total label will be displayed on the worksheet. If the **Generate label automatically** check box is selected below, Discoverer creates a name for you. To enter a different label, clear the **Generate label automatically** check box and either type in a new label or choose a label from the drop down list on the right of the field. To change the default text style of the label, click the Format button and choose a text font, style, color and alignment.

Generate label automatically

Use this check box if you want Discoverer to create a total name for you. To change the default text style, click the Format button and choose a text font, style, color and alignment.

Format Data

Use this button to display the "Format Data dialog", where you change how the values look on the worksheet.

Format Heading

Use this button to display the "Format heading dialog", where you change how the item headings look on the worksheet.

Edit Worksheet dialog

Use this dialog to change how a worksheet looks and behaves. You can:

- change which items are displayed and how they look
- create, edit, and remove worksheet items such as conditions, calculations, exceptions, percentages, totals, and parameters.

Note: For more information about maximizing Discoverer performance, see "About designing workbooks for maximum performance".

This dialog is also known as:

- Duplicate as Table dialog
- Duplicate as Crosstab dialog

For more information, see:

- "Edit Worksheet dialog: Select Items tab"
- "Edit Worksheet dialog: Crosstab layout tab"
- "Edit Worksheet dialog: Table Layout tab"
- "Edit Worksheet dialog: Format tab"
- "Edit Worksheet dialog: Conditions tab"
- "Edit Worksheet dialog: Calculations tab"
- "Edit Worksheet dialog: Percentages tab"
- "Edit Worksheet dialog: Totals tab"
- "Edit Worksheet dialog: Parameters tab"
- "Sort Crosstab dialog"
- "Edit Worksheet dialog: Sort tab"

Edit Worksheet dialog: Crosstab layout tab

Use this tab to change the layout of the current worksheet. This is also known as *pivoting*. For example, you might want to change which items are displayed, and their position on the worksheet.

Note: This dialog is also known as Duplicate as Crosstab dialog: Crosstab Layout tab

For more information, see:

"About pivoting worksheet data"

"About designing workbooks for maximum performance".

Show page items

Use this check box to display page items on the worksheet.

Page Items area

This area shows which items are displayed in the Page Items area on the worksheet.

Layout Area

This area shows how the items are arranged.

- To change an item's position, click the item and drag and drop it to a new location. To help you position items, as you move an item round the worksheet a black line is displayed showing its new location.
- To remove an item, click the item and press Delete.

Options

Use this button to display the Options dialog. Use the Options dialog to specify:

- how Discoverer handles queries (see "Options dialog: Query Governor tab")
- how Discoverer formats worksheets (see "Options dialog: Sheet Format tabs")

Notes

- If you remove an item from a worksheet (e.g. by selecting an item and pressing the Delete key), you also remove items that are dependent on the item (e.g. calculations, conditions). For example, if you remove an items called Sales SUM that is used in a calculation, the calculation is also removed.

Edit Worksheet dialog: Calculations tab

Use this tab to specify calculations on the current worksheet. This tab displays a list of existing calculations available to the worksheet. Use this tab to:

- display and hide existing worksheet calculations
- manage existing calculations
- create new calculations

For more information, see:

"What are calculations?"

"Discoverer calculation examples"

"How to create calculations"

"How to create a new calculation using an analytic function template"

List calculations for

Use this drop down list to specify which calculations you display in the list below. The default setting displays calculations for all items, which lists all calculations available to the current worksheet.

- To display a calculation in the current worksheet, select the check box next to the calculation.
- To hide a calculation, clear the check box next to the calculation.

Description

This field displays the formula of the currently selected calculation.

New

Use this button to display the New Calculation dialog (see "New Calculation dialog"). Use the New Calculation dialog to create new calculations.

Edit

Use this button to display the Edit Calculation dialog (see "Edit Calculation dialog"). Use the Edit Calculation dialog to edit the currently selected calculation.

Delete

Use this button to permanently remove the selected calculation.

Note: When you remove calculations, you also remove items that are dependent on the calculation (e.g. other calculations, conditions, sorts. For example, if the calculation that you delete is used in a worksheet parameter, the parameter is also removed.

Options

Use this button to display the Options dialog. Use the Options dialog to specify:

- how Discoverer handles queries (see "Options dialog: Query Governor tab")
- how Discoverer formats worksheets (see "Options dialog: Sheet Format tabs")

Notes

- To remove a calculation from a worksheet without deleting the calculation, hide the calculation using the **View calculations for** drop down list.
- You are not allowed to delete calculations created for you by the Discoverer manager.

Edit Worksheet dialog: Conditions tab

Use this tab to specify conditions on the current worksheet. This tab displays a list of existing conditions available to the worksheet. Use this tab to:

- display and hide existing worksheet conditions
- manage existing conditions
- create new conditions

For more information, see:

"What are conditions?"

List conditions for

Use this drop down list to specify which conditions are displayed in the list below. The default setting displays conditions for all items, which lists all conditions available to the current worksheet.

- To turn on a condition in the current worksheet, select the check box next to the condition.
- To turn off a condition, clear the check box next to the condition.

Description

This field displays the formula of the currently selected condition.

New

Use this button to display the "New Condition dialog", where you create new conditions.

Edit

Use this button to display the "Edit Condition dialog", where you edit the currently selected condition.

Note: You can only edit conditions that you have created (for more information, see **Show** option). You cannot edit conditions created by the Discoverer administrator.

Show

Use this button to display the "Show Condition dialog", where you can look at the currently selected condition in detail.

Note: This button is greyed in when you are not allowed to edit the currently selected condition (for more information, see **Edit** option).

Delete

Use this button to permanently remove the selected condition.

Options

Use this button to display the Options dialog. Use the Options dialog to specify:

- how Discoverer handles queries (see "Options dialog: Query Governor tab")
- how Discoverer formats worksheets (see "Options dialog: Sheet Format tabs")

Note

- To remove a condition from a worksheet without deleting the condition, hide the condition using the **View conditions for** drop down list.
- You are not allowed to delete conditions created for you by the Discoverer manager.

Edit Worksheet dialog: Format tab

Use this tab to change the way that items look on the current worksheet. For example, you might want to changes their font, font size, color, alignment, and how they text wrap.

Note: This dialog is also known as:

Workbook Wizard: Format dialog

For more information, see:

"About the tutorial workbook?"

Click an item in the list to edit its heading, or to change the format for its data

Use this list to choose which items you want to change. This list contains all items currently visible on the worksheet.

Example

This area shows how the selected item will look on the worksheet.

Format Data

Use this button to display the "Format Data dialog: Format tab", where you change how the values look on the worksheet.

Format Heading

Use this button to display the "Format heading dialog", where you change how the item headings look on the worksheet.

Edit Heading

Use this button to display the "Edit Heading dialog", where you change the item headings that appear on worksheets. For example, you might want to change the heading 'Month' to 'Sales Month'.

Options

Use this button to display the Options dialog. Use the Options dialog to specify:

- how Discoverer handles queries (see "Options dialog: Query Governor tab")
- how Discoverer formats worksheets (see "Options dialog: Sheet Format tabs")

Edit Worksheet dialog: Parameters tab

Use this tab to specify parameters for the current worksheet. This tab displays a list of existing parameters available to the worksheet. Use this tab to manage existing parameters and create new parameters.

For more information, see:

"What are parameters?"

"About using parameters"

"About designing workbooks for maximum performance".

Available parameters

This list shows which parameters are available to the current worksheet and enables you to create, edit, and delete parameters. The check box next to each parameter indicates whether it is activated (i.e. turned on) or not. Activate and de-activate parameters as follows:

- If the parameter is included in a condition, display the Conditions tab and select the check box next to the condition containing the parameter, then click OK to close the dialog.
- If the parameter is included in a calculation, display the Calculation tab and select the check box next to the calculation containing the parameter, then click OK to close the dialog.

Description

This field displays the formula of the currently selected parameter.

New

Use this button to display the New parameter dialog (see "New Parameter dialog"). Use the New parameter dialog to create new parameters.

Edit

Use this button to display the Edit parameter dialog (see "Edit Parameter dialog"). Use the Edit parameter dialog to edit the currently selected parameter.

Delete

Use this button to permanently remove the selected parameter.

Note: When you remove parameters, you also remove items that are dependent on the parameter (e.g. calculations, conditions). For example, if the parameter that you delete is used in a worksheet calculation, the calculation is also removed.

Move Up

Use this button to change the order of the parameter currently selected in the **View parameters for** list. Click this button to move the item one position up the list.

Move Down

Use this button to change the order of the parameter currently selected in the **View parameters for** list. Click this button to move the item one position down the list.

Options

Use this button to display the Options dialog. Use the Options dialog to specify:

- how Discoverer handles queries (see "Options dialog: Query Governor tab")
- how Discoverer formats worksheets (see "Options dialog: Sheet Format tabs")

Notes

- To remove a parameter from a worksheet without deleting the parameter, hide the parameter using the **View parameters for** drop down list.
- You are not allowed to delete parameters created for you by the Discoverer manager.

Edit Worksheet dialog: Percentages tab

Use this tab to specify how percentage items are displayed on the current worksheet. This tab displays a list of existing percentages available to the worksheet. Use this tab to:

- display and hide existing worksheet percentages
- manage existing percentages
- create new percentages

For more information, see:

"What are percentages?"

List percentages for

Use this list to limit the percentages that are displayed in the list below. The default setting displays percentages for all items, which lists all percentages available to the current worksheet.

- To display a percentage in the current worksheet, select the check box beside the percentage.
- To hide a percentage, clear the check box next to the percentage.

Description

This field displays a description (if any) for the currently selected percentage.

New

Use this button to display the New percentage dialog (see "New Percentage dialog"). Use the New percentage dialog to create new percentages.

Edit

Use this button to display the Edit percentage dialog (see "Edit Percentage dialog"). Use the Edit percentage dialog to edit the currently selected percentage.

Delete

Use this button to permanently remove the selected percentage.

Options

Use this button to display the Options dialog. Use the Options dialog to specify:

- how Discoverer handles queries (see "Options dialog: Query Governor tab")
- how Discoverer formats worksheets (see "Options dialog: Sheet Format tabs")

Notes

- To remove a percentage from a worksheet without deleting the percentage, hide the percentage using the **View percentages for** drop down list.
- You are not allowed to delete percentages created for you by the Discoverer manager.

Edit Worksheet dialog: Select Items tab

Use this tab to specify which items to display on the current worksheet. For example, you might want to add items so that you can analyze your data in a new way.

For more information, see:

"What are worksheets?"

"About icons in the Workbook Wizard"

"About designing workbooks for maximum performance".

Available

This field displays the name of the Business Area that the workbook is connected to. Use the expandable list below to specify which items you want to analyze in the worksheet (see table below for information about item types available).

- Click the plus (+) and minus (-) buttons next to folders and items to expand and collapse them.
- To select more than one item at a time, hold down the control key (Ctrl) when you select items.
- To add items to the worksheet, select the item in the **Available** list, then click the right arrow button (>) to add it to the **Selected** list.

Note: You can only select items from grayed in folders in the **Available** list. For more information, see the Discoverer manager.

The table below describes icons used in the Workbook Wizard and Worksheet Wizard.

Icon	Description
	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.
	Folder - contains the items that you can select for your worksheets. Click the plus (+) and minus (-) symbol next to the folder to open and close the folder.

Icon	Description
	Axis 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 (e.g. 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).
	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 (e.g. summing profits will produce 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.
	Aggregations - the mathematical functions to aggregate data. For text items (e.g. 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.
	Condition - a filter for finding specific data. **Note**: Conditions defined by the Discoverer manager appear in folders. User-defined conditions do not appear in folders.
	Calculation - a mathematical expression to produce new data from other items. **Note**: Calculations defined by the Discoverer manager appear in folders. User-defined calculations) do not appear in folders.

Torch icon

Click the torch icon () above the **Available** box to display the "Find dialog (in Item Navigator)", where you search the EUL for items that you want to add to the worksheet.

Hint: To locate an item quickly when the focus is on the Item Navigator, type the first letter of the item or folder that you want to locate. The next item or folder beginning with the typed letter is highlighted. Repeat this process to highlight the next item or folder beginning with the typed letter. For example, type 'r' or 'R' to locate the Region item.

Selected

Use this list to look at items currently in the worksheet.

- To remove an item from the worksheet, select the item in the **Available** list, then click the left arrow button (<) to move it back to the **Available** list.
- To select more than one item at a time, hold down the control key (Ctrl) when you select items.

Options

Use this button to display the Options dialog. Use the Options dialog to specify:

- how Discoverer handles queries (see "Options dialog: Query Governor tab")
- how Discoverer formats worksheets (see "Options dialog: Sheet Format tabs")

Notes

- If you remove an item from a worksheet, you also remove items that are dependent on the item (e.g. calculations, conditions). For example, if you remove an items called Sales SUM that is used in a calculation, the calculation is also removed.

Edit Worksheet dialog: Sort tab

Use this tab to change the default sort order of items on the current table worksheet. For example, you might want to order numerical sales data from highest to lowest to look at sales performance.

For more information, see:

"About sorting on table worksheets"

"How to sort data on a table worksheet"

"Examples of sorting"

Sort List

Use this list to manage how the worksheet data is ordered. Sorts are arranged in order of precedence.

Note: Group sorts automatically take precedence over non-group sorts.

Column

This field displays the name of the item on which the data is ordered.

Direction

Use this drop down list to change how the data is ordered.

- Low to High sorts A - Z alphabetically and 1 - 10 etc. numerically (language specific).
- Hi to Low sorts Z - A alphabetically and 10 - 1 etc. numerically (language specific).

Sort Type

Use this option to group data and not display duplicate values. For example, if you sort on year, and there are many rows for 2001, the value 2001 will only be displayed for the first row with that value. Note the following:

- Items sorted on group take precedence over items not sorted on group.
- Changing an item to group sort automatically moves it to a higher position in the sort list over items not sorted on group.

For more information about group sorting, see "What is group sorting?".

Hidden

Use this option to hide or display the sorted item on the worksheet, as follows:

- Select the **Hidden** check box to hide the sorted item.
- Clear the **Hidden** check box to display the sorted item on the worksheet.

Add

Use this button to add a new sort to the worksheet. The sort is added to the sort list. Click the button to display a list of items available, then click an item to create a sort on that item.

Delete

Use this button to remove the sort currently selected in the sort list from the worksheet.

Move up

Use this button to change the order of precedence of the selected sort item. Moving a sort up the list increases its precedence.

Move down

Use this button to change the order of precedence of the selected sort item. Moving a sort down the list decreases its precedence.

Options

Use this button to display the Options dialog. Use the Options dialog to specify:

- how Discoverer handles queries (see "Options dialog: Query Governor tab")
- how Discoverer formats worksheets (see "Options dialog: Sheet Format tabs")

Notes

- You can also drag and drop items into a difference position in the sort list to change the order of precedence.

Edit Worksheet dialog: Table Layout tab

Use this tab to change the layout of the current worksheet. For example, to change which items are displayed, and their position on the worksheet.

Note: This dialog is also known as:

- Duplicate as Table dialog: Table Layout tab
- Workbook Wizard: Table Layout dialog

For more information, see:

"About the tutorial workbook?"

"About designing workbooks for maximum performance".

Show page items

Use this check box to display page items on the worksheet.

Page Items area

This area shows which items are displayed in the Page Items area on the worksheet.

Hide duplicate rows

Use this check box to not display duplicate values. For example, if you have a group of rows for the same month January, January is displayed for the first item in the group only.

Layout Area

This area shows how the items are arranged.

- To change an item's position, click the item and drag and drop it to a new location. To help you position items, as you move an item round the worksheet a black line is displayed showing its new location.
- To remove an item, click the item and press Delete.

Options

Use this button to display the Options dialog. Use the Options dialog to specify:

- how Discoverer handles queries (see "Options dialog: Query Governor tab")
- how Discoverer formats worksheets (see "Options dialog: Sheet Format tabs")

Notes

- If you remove an item from a worksheet (e.g. by selecting an item and pressing the Delete key), you also remove items that are dependent on the item (e.g. calculations, conditions). For example, if you remove an items called Sales SUM that is used in a calculation, the calculation is also removed.

Edit Worksheet dialog: Totals tab

Use this tab to specify how total items are displayed on the current worksheet. This tab displays a list of existing totals available to the worksheet. Use this tab to:

- display and hide existing worksheet totals
- manage existing totals
- create new totals

For more information, see:

"What are totals?"

List totals for

Use this drop down list to specify which totals you display in the list below. The default setting displays totals for all items, which lists all totals available to the current worksheet.

- To display a total in the current worksheet, select the check box beside the total.
- To hide a total, clear the check box next to the total.

New

Use this button to display the New Totals dialog (see "New Total dialog"). Use the appropriate New Total dialog to create new totals.

Edit

Use this button to display the Edit Totals dialog (see "Edit Total dialog"). Use the appropriate Edit Totals dialog to edit the total selected in the list.

Delete

Use this button to permanently remove the selected total.

Options

Use this button to display the Options dialog. Use the Options dialog to specify:

- how Discoverer handles queries (see "Options dialog: Query Governor tab")
- how Discoverer formats worksheets (see "Options dialog: Sheet Format tabs")

Notes

- To remove a total from a worksheet without deleting the total, hide the total using the **View totals for** drop down list.
- You are not allowed to delete Totals created for you by the Discoverer manager.

Export Wizard dialog: Define File Details tab

Use this dialog to specify what format you want to export to, and where to save files.

For more information, see:

"Exporting data to other applications"

Which export format do you want?

Use this drop down list to specify an export format. Format types supported include Oracle Reports (*.xml), Microsoft Excel, HTML, and Text.

Where do you want to save the file?

Use this field to specify where to save the exported data (for example, *c:\data\reports*). Type in a file location, or use the Browse button to navigate to a file location.

Browse

Use this button to display the Save dialog, where you navigate to a file location and choose a file name and export format.

Export Wizard dialog: Define Graph tab

Use this dialog to specify how to export graphs. For example, you might want to change the graph size, ratio, or the size of the label font.

Note: If you export more that one graph, these options affect all graphs exported.

For more information, see:

"Exporting data to other applications"

What size do you want to export the graph?

Use these options to specify how the graphs.

- **Current on-screen size**

  Use this radio button to export the graph as it appears on the worksheet.

- **Specify**

  Use this radio button to change the default height and width of the graph. When you select this radio button, the graph's current dimensions are displayed in the Height and Width fields so that you edit them.

Height

Use this field to change the default height of the graph (in pixels). If the **Preserve the ratio of height and width** radio button is selected, when you enter a value here, the ratio of the Width value is changed automatically.

Width

Use this field to change the default width of the graph (in pixels). If the **Preserve the ratio of height and width** radio button is selected, when you enter a value here, the ratio of the Height value is changed automatically.

Preserve the ratio of height and width

Use this radio button when you want to keep the ratio of the graph when you change the height or width.

Preserve the on screen font size

Use this radio button when you want to export the graph text in the same font size as that used on the worksheet.

Export Wizard dialog: Log tab

This dialog shows you what files were produced by the export and whether any problems occurred. For example, if you export a worksheet and graph in Microsoft Excel format, you will see an Excel file (*.xls) and a graph image file (*.gif) in this list.

For more information, see:

"Exporting data to other applications"

Files exported to

This area shows you where the files were saved to. For example, c:\data\report\.

File list

This list shows you what files were produced during the export. For example, if you export a workbook containing three worksheets (named Sheet1, Sheet2, and Sheet3) in HTML format, this list will contain three files, as follows:

Sheet name	File name	Status
Sheet1	Sheet1.html	Sheet exported successfully.
Sheet2	Sheet2.html	Sheet exported successfully.
Sheet3	Sheet3.html	Sheet exported successfully.

Sheet Name

This field shows you the name of the worksheet exported.

File Name

This field shows you the name of the file produced in the export.

Status

This field tells you whether the file was exported successfully.

Open the first exported sheet

Use this check box to open the first file in the file list when you close the Export Wizard. For example, if the first file is a HTML file, your Web browser will display the HTML file.

Export Wizard dialog: Edit Parameter Values tab

Use this dialog to limit the data that you export. You do this by entering parameter values, which act like conditions by filtering the data in the workbook or worksheet. Only data matching the criteria that you define is exported. For example, you might only want to look at data where the month equals 'January'.

For more information, see:

"Exporting data to other applications"

Please select values for the following parameters:

This area contains one or more fields into which you enter a value on which to filter data. Each field has a prompt, which should be an instruction or question telling you what value to enter. For example, if the prompt is 'Please choose a month', enter 'January' to see data for that month.

Export Wizard dialog: Select Objects tab

Use this dialog to specify what data you want to export. For example, you might want to export the current worksheet or all worksheets, or export graph data with worksheets.

For more information, see:

"Exporting data to other applications"

Which worksheets do you want to export?

Use these radio buttons to choose which worksheets to export.

- **Current worksheet**

  Use this radio button to export the worksheet that you currently have open.

- **All worksheets**

  Use this radio button when you want to export all worksheets in the workbook.

  Note: If you have extraneous worksheets in a workbook, this option might affect Discoverer performance. For more information about maximizing Discoverer performance, see "About designing workbooks for maximum performance".

What do you want to export?

Use these radio buttons to choose what data to export.

- **Both Graph and Table/Crosstab**

  Use this radio button to export worksheets with their accompanying graphs.

- **Table/Crosstab only**

  Use this radio button to export worksheets but not their accompanying graphs.

- **Graph only**

  Use this radio button to export the graph(s) only.

Export Wizard dialog: Supervise tab

Use this dialog to choose whether to monitor the export whilst it is in progress. For example, if the worksheet uses large queries, you might want to respond to warnings about how long queries will take.

For more information, see:

"Exporting data to other applications"

Do you want to supervise the export process?

- **Supervised**

  Use this radio button when you think that the export might take a long time or might produce more than the maximum amount of data. You can then respond to warnings during the process.

- **Unsupervised**

  Use this radio button when you want to export the data regardless of possible warnings about how long the export will take or how much data will be produced.

Note: For more information about how to manage queries that run during exports, see "Options dialog: Query Governor tab".

Find dialog (in Item Navigator)

Use this dialog to find items or folders that you want to add to a worksheet. This is useful when you have a large EUL, or want to add items from different business areas without having to navigate to those business areas.

For example, you might want to search for folders that begin with the letter 'C', or search for items that contain the text 'Transaction'.

For more information, see:

"What are worksheets?"

"How to edit worksheets"

Search in

Use this drop down list to specify which business area you want to search. If you want to search all business areas in the current End User Layer, choose the 'All Business Areas' option.

Search by

Use this drop down list to specify how you want to match items. For example, choose 'Starts With' and enter 'T' as a **Search for** value to find only items beginning with the letter 'T'.

Search for

Use this field to enter the text that you want to match against. For example, enter 'T' here and choose Starts With in the **Search by** drop down list to find only items beginning the letter 'T'.

Go

Use this button to start the search according to the search criteria that you have specified, and display matching items and folders in the **Results** list below.

Case-sensitive

Use this check box to match upper and lower case letters exactly when searching, as follows:

- if selected, the value 'OPM' will not find 'opm' or 'Opm'
- if not selected, the value 'OPM' will find 'opm' and 'Opm'

Results

This list displays items that match the search criteria that you have specified. Use this list to choose items that you want to add to the worksheet.

To select items from the **Results** list, do one of the following:

- double-click on an item in the **Results** list to select the item in the "Edit Worksheet dialog: Select Items tab"
- select an item in the **Results** list and click OK to return to the "Edit Worksheet dialog: Select Items tab"

  When you select an item in the **Results** list, the item is highlighted in the **Available** list in the Item Navigator. To select the item, move the item from the **Available** list to the **Selected** list.

  Note: You can only select items from grayed in folders in the **Available** list. For more information, see the Discoverer manager.

Following Value dialog

Use this dialog to create a following value calculation. A following value calculation returns the value that is a specified number of rows or a specified time period after each value. For example, you might want to know what the following month's sales are for each value.

You typically use following value to create calculations for use in other calculations. For example, you might use the following month's sales values to calculate the change in sales from the following month as a percentage of annual sales.

This type of analysis is sometimes referred to as LAG/LEAD analysis.

Note: To return a preceding value rather than a following value, use the Preceding Value dialog (see "Preceding Value dialog").

For more information, see:

"What are analytic functions?"

"Examples of using row-based and time-based intervals"

"How to create a new calculation using an analytic function template"

"LAG/LEAD function examples"

Following value of

Use this drop down list to choose the item for which you want to return the following value. For example, you might choose Sales SUM to calculate the following sales value.

Return value

Use this drop down list to specify the number of rows or the number of time periods in which you want to compare the values. For example, you might choose '3' to compare sales values with sales values three months in advance.

Use the adjacent drop down list to choose a row-based interval or a time-based interval. For example, you might choose Months Following Current Value to compare sales values with later sales values.

Hint: If you have time-based data, use time-based groups (e.g. Days/Weeks/Months After Current Value). If you do not have time-based data, use row-based groups (e.g. Rows After Current Value). For more information about types of group, see "About windowing".

For examples of specifying row-based and time-based intervals, see "Examples of using row-based and time-based intervals".

Order rows by

Use this drop down list to specify how to order the worksheet values. For example, you might choose Calendar Month to compare sales with sales one month in advance. Then use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Hint: If you have specified a time-based group in the **Return value** fields, specify a time-based value in the **Order rows by** fields (e.g. Calendar Month).

Then order rows by

Use this drop down list to specify a secondary order for the values. For example, you might choose City to sort values on city within month. Then use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Note: This drop down list only enabled if you specified a row-based group in the **Following value** drop down list. This drop down list is only disabled if you specified a time-based group in the **Following value** drop down list.

Restart calculation at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, to calculate the following value in Sales SUM values between months within year, you might choose Calendar Year.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

Notes

- A following value calculation will return a null value if the following row is beyond the last row in the group.

Format Data dialog

Use this dialog to change how worksheet items look on the worksheet. For each item, you can change the:

- font and font size
- font style
- text and background color
- text alignment
- text wrapping
- date style (for date items)
- number style (for number items)
- text style (for text items) using styles defined by the Discoverer manager

For more information, see:

- "About editing worksheets"
- "Format Data dialog: Date tab"
- "Format Data dialog: Format tab"
- "Format Data dialog: Number tab"
- "Format Data dialog: Text tab"

Format Data dialog: Date tab

Use this tab to configure the way that Discoverer displays date items. For example, to change the font style, text color, text alignment, or the layout of date characters.

For more information, see:

"About editing worksheets"

Categories

Use this list to select a predefined format for the currently selected date item.

Type

Use this list to select a date type.

Example

This field shows how the type selected in the **Type** list will look on the worksheet.

Type

Use this list (which is displayed when the Custom category is selected) to either choose from an existing custom type, or to create your own custom type. For example, you might want to create a new type to display time as SS:MM:HH rather than HH:MM:SS.

Hint: To create a new custom type:

a. select a type from the **Type** list

b. enter changes in the **Edit Type** field

c. click Add to save changes

Use the **Example** field to see how changes affect how the item is displayed.

Format Data dialog: Format tab

Use this tab to change how Discoverer displays items on the worksheet. For example, to change default the font, text size, text color, and alignment. Each option changes the default item format for the item currently selected on the Edit Worksheet - Format tab (see "Edit Worksheet dialog: Format tab").

For more information, see:

"About editing worksheets"

Font

Use this drop down list to specify a text font for the item.

Size

Use this drop down list to specify a font size for the item.

Style

Use this drop down list to specify a font style for the item (e.g. bold, italic, underlined).

Color

Text

Use this color pane to specify a color for the item text.

Background

Use this color pane to specify a background color for the item text.

Alignment

Use these buttons to set the vertical and horizontal text alignment.

Wrap words in cell

Use this check box to wrap the item text to fit into the space available. When not selected, the text is cut-off if it exceeds the space available.

Example

This area shows how the type selected will look on the worksheet.

Show Actual font size

Use this check box to display text in the example area in the font size and style selected.

Format Data dialog: Number tab

Use this tab to configure the way that Discoverer displays number items. For example, to change default the currency symbol, number of decimal places, percent sign, and how negative numbers are displayed.

For more information, see:

"About editing worksheets"

Categories

Use this list to select a predefined format for the currently selected numeric item.

Decimal Places

Use this list to specify the number of decimal places that you want to display for the item.

Use <currency symbol>

Use this check box to display this currency symbol in front of values for the current item.

Use 1000 Separator

Use this check box to separate large numbers with a separator (e.g. English speaking countries use a comma (,) at every 1000. For example, 1,900,120.

Negative Numbers

Use this list to select how to display negative numbers on the worksheet. For example, in red, or in brackets, or prefixed with a minus symbol (-).

Type

Use this list (which is displayed when the Custom category is selected) to either choose from an existing custom type, or to create your own custom type. For example, you might want to create a new type to display money as 99999990 rather than 999G990.

Hint: To create a new custom type:

a. Select a type from the **Type** list.

b. Enter changes in the **Edit Type** field.

c. Click Add to save changes.

Use the **Example** field to see how changes affect how the item is displayed.

Notes

- The Country setting on the Discoverer Start Page determines the currency symbol displayed. To change the currency symbol, change the Locale setting on the Connection details page (select the Update link next to the connection you want to edit).
- Country settings on a browser also affect currency separators.

Format Data dialog: Text tab

Use this tab to configure the way that Discoverer displays text items. For example, to change the text to upper case, lower case, or to capitals.

For more information, see:

"About editing worksheets"

Categories

Use this list to look at types available in each category (see **Type** list).

Type

Use this list to specify a pre-defined text type from the options available. For example, choose UPPERCASE to change text to upper case.

Example

This field shows how the type selected will look on the worksheet.

Format heading dialog

Use this tab to configure the way that Discoverer displays item headings. For example, to change the text to upper case, lower case, or to capitals.

For more information, see:

"About editing worksheets"

Font

Use this drop down list to specify a text font for the item.

Size

Use this drop down list to specify a font size for the item.

Style

Use this drop down list to specify a font style for the item (for example bold, italic, underlined, or sans-serif).

Color

Text

Use this color pane to specify a color for the item text.

Background

Use this color pane to specify a background color for the item text.

Alignment

Use these buttons to set the vertical and horizontal text alignment.

Wrap words in cell

Use this check box to wrap the item text to fit into the space available. When not selected, the text is cut-off if it exceeds the space available.

Example

This area shows how the type selected will look on the worksheet.

Show Actual font size

Use this check box to display text in the example area in the font size and style selected.

Graph Wizard dialog: Font dialog tab

Use this tab to change the text styles on a graph. For example, you might want to specify a different font for the graph title or axis title.

Note: The fields that you use to specify font details depend on the graph type selected.

For more information, see:

"More about worksheets and graphs"

"About components of a Discoverer graph"

"How to edit a graph"

Font

Use this drop down list to specify a text font.

Size

Use this drop down list to specify a font size.

Style

Use this drop down list to specify a font style (for example bold, italic, underlined, or sans-serif).

Color

Use this button to display a color pane that enables you to change the color of the item.

Text

Use this color pane to specify a color for the item text.

Alignment

Use these buttons to set the horizontal text alignment (where applicable).

Show Actual font size

Use this check box to display text in the example area in the font size and style selected.

Orientation

Use the orientation buttons to rotate axis tick labels or axis titles to the best position. For example:

- 0 degrees positions an X-axis title horizontally (to flip the title horizontally, choose 270 degrees)
- 0 degrees positions a Y-axis title vertically (to flip the title vertically, choose 270 degrees)

Note: This option is not available for the X-axis title or the legend.

Graph Wizard dialog: Titles, Totals, and Series tab

Use this dialog to configure a graph. For example, you might want to change a graph title or graph title font.

Note: The fields that you use to specify a graph depend on the graph type selected.

This dialog is also displayed as:

Title dialog

For more information, see:

"More about worksheets and graphs"

"About components of a Discoverer graph"

"How to edit a graph"

Show title

Use this check box to display or hide the graph title defined in the box below. By default, the title is displayed above the graph.

Insert

Use this button to add report information derived from dynamic values to the graph title (e.g. workbook name, current date, current time). These dynamic values are updated automatically when you display, print, or export a graph.

Title Font

Use this button to display the "Graph Wizard dialog: Font dialog tab", which enables you to change the font style of the graph title.

What would you like to display in your graph?

Use these radio buttons to specify what data to include on the graph.

- **Data only**

  Use this radio button to display all worksheet data, when you want a full report.

- **Totals only**

  Use this radio button to display worksheet totals, when you want a summary only.

- **Both Data and totals**

Use this radio button to display the worksheet data and totals, where you want a full report with totals.

Show null values as zero

Use this check box to display null values (or empty data values) as zeros.

Graph series by (not Pie Chart style)

Use these radio buttons to specify which items to put on the X-axis of a graph.

- **Columns**

  Use this radio button to put the first item on the worksheet on the X-axis (horizontal axis). The other items are series on the graph. In other words, their values are represented on the graph on the Y-axis (vertical axis).

- **Rows**

  Use this radio button to represent the first item as a series on the graph. In other words, its value is represented on the graph on the Y-axis (vertical axis). The other values are placed on the X-axis (horizontal axis).

Graph series by (Pie Chart graph style)

Use these radio buttons to specify which items to put on the X-axis of a Pie Chart (for more information about how to plot rows and columns in a Pie Chart, see "Notes about creating pie graphs").

- **Columns**

  Use this radio button to plot the values in the first column on the X-axis. In other words, the column's values are represented on the pie chart as slices of the pie. When you select this radio button, use the Pie Chart Options button to display the "Graph Wizard dialog: Pie Chart Options tab (column)", which enables you to change which item you use as the graph series.

- **Rows**

  Use this radio button to plot the values in the first row on the X-axis. In other words, the row's values are represented on the pie chart as slices of the pie. When you select this radio button, use the Pie Chart Options button to display the "Graph Wizard dialog: Pie Chart Options tab (row)", which enables you to change which item you use as the graph series.

Pie Chart Options

Use this button to display the "Graph Wizard dialog: Pie Chart Options tab (column)" or "Graph Wizard dialog: Pie Chart Options tab (row)", which enable you to change which item you use as the graph series.

Graph Wizard dialog: Graph Type tab

Use this dialog to choose what type of graph you want to create.

For more information, see:

"About using graphs in Discoverer"

"About components of a Discoverer graph"

"How to edit a graph"

Graph type

Use this list to choose a graph type (or category). The Graph subtype pane opposite displays graph styles of this type that you can choose from.

Graph subtype

Use this area to choose a graph style from the subtypes available.

3-D Effect

Use this check box to select a three-dimensional (3-D) version of the selected graph style.

Description

This area gives hints and tips on using the selected graph style.

Notes

- If you are editing an existing graph, you can also edit the graph using any of the following methods:
  - Select the area of the graph that you want to edit, and use options on the graph menu bar to manipulate the graph area (for more information, see Section , "About the Discoverer menu bar and toolbars").
  - Select the area of the graph that you want to edit, right-click to display a graph menu of options for that area, and use the graph menu options to manipulate the graph area.

Graph Wizard dialog: Legend tab

Use this dialog to control the appearance of the graph legend. The graph legend (sometimes called a key) explains how worksheet data is represented on a graph. For example, you might want to display a legend to explain which colors represent which worksheet items plotted on a graph.

For more information, see:

"About using graphs in Discoverer"

"About components of a Discoverer graph"

"How to edit a graph"

Show Legend

Use this check box to display or hide the legend. This check box controls how the legend is displayed on screen and when the graph is printed or exported.

Location

Use this drop down list to change the position of the legend (e.g. above the graph or to the right of the graph). Select 'Automatic' if you want Discoverer to choose the best legend position for you.

Border color

Use this button to display or hide a color pane that enables you to change the color of the box surrounding the legend.

Background color

Use this button to display or hide a color pane that enables you to change the background color of the legend.

Legend Font

Use this button to display the "Graph Wizard dialog: Font dialog tab", which enables you to change the font style of the legend.

Graph Wizard dialog: Pie Chart Options tab (column)

Use this dialog to specify which data column you want to plot when you create a Pie Chart. For example, if the worksheet has the columns: Year, Sales, and Costs, you need to specify whether to plot Sales or Costs values.

For more information, see:

"About using graphs in Discoverer"

"About components of a Discoverer graph"

"How to edit a graph"

"Notes about creating pie graphs" to see an example worksheet configuration and chart.

Which column would you like to graph?

Use this list to specify which worksheet column you want to represent on the pie chart.

For example, you might have a Crosstab worksheet with Region on the left axis and Profit SUM by Year on the top axis. If you select 'Columns' from the **Graph series by:** options on the "Graph Wizard dialog: Titles, Totals, and Series tab", you might be able to select from Year options 2002, or 2003.

Graph Wizard dialog: Pie Chart Options tab (row)

Use this dialog to specify which data column you want to plot when you create a Pie Chart. For example, if the worksheet has the rows: 1998, 1999, and 2000, you need to specify which of these you want to represent on the graph.

For more information, see:

"About using graphs in Discoverer"

"About components of a Discoverer graph"

"How to edit a graph"

"Notes about creating pie graphs" to see an example worksheet configuration and chart.

Which row would you like to graph?

Use this list to specify which worksheet row you want to represent on the pie chart. For example, you might have a Crosstab worksheet with Region on the left axis and Profit SUM by Year on the top axis. If you select 'Rows' from the **Graph series by:** options on the "Graph Wizard dialog: Titles, Totals, and Series tab", you might be able to select from Region options Central, East, or West.

Graph Wizard dialog: Plot Area tab

Use this dialog to specify how worksheet items are plotted on a graph. For example, you might want to set the background color of a graph, or specify the color of bars on a Bar graph.

Note: The fields that you use to specify a graph depend on the graph type selected.

For more information, see:

"About using graphs in Discoverer"

"About components of a Discoverer graph"

"How to edit a graph"

Background color

Use this button to display or hide a color pane that enables you to change the background color of the plot area.

Border color

Use this button to display or hide a color pane that enables you to change the color of the box surrounding the graph.

Show horizontal grid lines

Use this check box to display or hide horizontal grid lines on the data plotting area of the graph. Horizontal grid lines enable you to compare graph values more accurately. When you select this check box, the adjacent drop down list and Color button become active, which enable you to change the line thickness and color of the line.

Note: You cannot change the line thickness of Polar graphs.

Show vertical grid lines

Use this check box to display or hide vertical grid lines on the data plotting area of the graph. Vertical grid lines enable you to compare graph values more accurately. When you select this check box, the adjacent drop down list and Color button become active, which enable you to change the line thickness and color of the line.

Note: You cannot change the line thickness of Polar graphs.

Show data label on <*graph item*>

Use this check box to display or hide data value labels on a graph. For example, you might want to display data values above the bars on a Bar graph. When you select this check box, the Options button becomes active, which enables you to change the label position and font style.

Note: This field is grayed out on 3D (i.e. three dimensional) graph types (e.g. Cube and Surface graph types).

Show data tips when mouse is over <*graph item*>

Use this check box to display or hide pop-up labels when the cursor is pointing at areas of the graph. Pop-up labels make it easier to identify areas of the graph. When you select this check box, the Options button becomes active, which enables you to change the label settings. For example, you might want to display the series name (e.g. Sales SUM) and the value (e.g. 30,000) when you move the cursor over plotted values.

Show data markers on the line

Use this check box to display or hide marker shapes (e.g. circle, square, triangle) on the graph to identify which worksheet items relate to which line.

Note: This check box is only displayed for Line and Pareto graphs.

Select options for the series displayed on your graph

Use this table to specify how worksheet items are displayed on the graph, as follows:

- Click on a cell in the table to display one or more of the following edit controls for that cell:
  - a color pane in the **Color** column for changing the series color
  - a drop down list of line thicknesses in the **Line** column for changing the plot line weight (e.g. for the plot line on Line graphs)
  - a drop down list of marker shapes in the **Marker** column for changing the graphical symbol for series (e.g. for the plot area on Scatter graphs)
  - a drop down list of axes in the **Y-Axis** column for specifying which worksheet items are displayed on which series (e.g. on Dual-Y type graphs)
- Use the individual series rows to specify how individual worksheet items are displayed on the graph. For example, you might have a row named Volume for specifying how the Volume worksheet item is displayed.

- Use the All Series row to specify how all worksheet items are displayed on the graph.

  Hint: Select Automatic in the **Color** column or Auto in the **Marker** column if you want Discoverer to format these attributes for you.

Notes

- The Marker column is not shown for Bubble graphs (i.e. markers in Bubble graphs are always circular).
- You cannot change the series options for some graph types (e.g. Surface graphs).
- When you create a Polar graph, the following field changes apply:
  - the **Show horizontal grid lines** check box is displayed as **Show circular grid lines**
  - the **Show vertical grid lines** check box is displayed as **Show radial grid lines**

Graph Wizard dialog: X-Axis tab

Use this dialog to configure the X-axis (i.e. the horizontal axis) of a graph. For example, you might want to specify a title for the X-axis.

Note: The fields that you use to specify a graph depend on the graph type selected.

For more information, see:

"About using graphs in Discoverer"

"About components of a Discoverer graph"

"How to edit a graph"

Show X-Axis title

Use this check box to display or hide the X-axis title defined in the box below. By default, the title is displayed below the X-axis.

Insert

Use this button to add report information derived from dynamic values to the X-axis title (e.g. workbook name, current date, current time). These dynamic values are updated automatically when you display, print, or export a graph.

X-Axis Title Font

Use this button to display the "Graph Wizard dialog: Font dialog tab", which enables you to change the font style of the X-axis title.

Select options for line on the X-Axis

- **Line thickness**

  Use this drop down list to change the weight of the X-axis line.

- **Line color**

  Use this button to display or hide a color pane that enables you to change the background color of the X-axis line.

Select options for the labels displayed on the X-Axis

Use these radio buttons to specify how X-axis tick labels are displayed. Tick labels display graph scale information along the X and Y axes (e.g. 100, 200, 300).

For more information about X-axis tick labels, see "About components of a Discoverer graph".

- **Show labels for all tick marks on the axis**

  Use this radio button to display labels for all items on the X-axis. Select this option if you have a small number of tick mark labels to display.

- **Show labels for some tick marks on the axis**

  Use this radio button to display some X-axis tick mark labels but not others. Select this option if you have a large number of tick mark labels to display. When you select this radio button, the following fields become active:

  - **Automatically skip labels to fit**
  - **Start with tick mark**
  - **Tick marks to skip between labels**

Automatically skip labels to fit

Use this radio button when you want to display only tick labels that fit on the graph without overlapping other labels.

Start with tick mark

Use this field to specify where to start the tick mark labels from. For example, type 3 to start from the third tick label from the left.

Tick marks to skip between labels

Use this field when you want to leave a gap between each tick mark label. For example, type 2 to leave a gap of two tick marks between each tick mark label.

Set the scale you would like to use on this axis

Use the following fields to change the scale of the X-axis.

- **Minimum**

  Use this field to change the lower axis range. Select the **Set automatically** check box if you want Discoverer to select the best range for you.

- **Maximum**

  Use this field to change the higher axis range. Select the **Set automatically** check box if you want Discoverer to select the best range for you.

- **Increment**

Use this field to change the incremental axis range, or the granularity of the graph. Select the **Set automatically** check box if you want Discoverer to select the best range for you.

Logarithmic scale

Use this check box to change the default linear scale of the X-axis to a logarithmic scale. When you select this check box, the adjacent **Base** drop down list becomes active, which enables you to change the default logarithmic base value.

You might use a logarithmic scale when you have numeric data that is widely spaced and you want to maintain the visibility of the smaller values. For example, if you had data ranging in value from 10 to 100,000 and you use the default linear scale, smaller values might not register on the graph. If you changed to a logarithmic scale of base 10, the smaller values would register on the graph.

Note: The *e* value in the **Base** drop down list is equal to 2.71 (sometimes referred to as a natural logarithm).

Reference Lines

Use this button to display the Reference Lines dialog, which enables you to define up to three lines on a graph to emphasize particular data values on a graph. For example, you might add a reference line show the target sales value, to emphasize which regions achieved a target. For an example of a reference line on a graph, see "About components of a Discoverer graph".

Note: Reference lines on an X-Axis are typically used on circular graphs.

X-Axis Label Font

Use this button to display the "Graph Wizard dialog: Font dialog tab", which enables you to change the font style of the X-axis label.

Notes

- The following fields are grayed out for Polar graphs:
  - **Show X-Axis title**
  - **Line thickness**
- The **Set the scale you would like to use on this axis** and **Logarithmic scale** fields are displayed when you are create a Polar graph, Scatter graph, or Bubble graph.

Graph Wizard dialog: Y-Axis tab

Use this dialog to configure the Y-axis (i.e. the vertical axis) of a graph. For example, you might want to specify a title for the Y-axis.

Note: The fields that you use to specify a graph depend on the graph type selected.

This dialog is also displayed as:

Y1-Axis (on dual-Y type graphs).

For more information, see:

"About using graphs in Discoverer"

"About components of a Discoverer graph"

"How to edit a graph"

Show Y1-Axis title

Use this check box to display or hide the Y-axis graph title defined in the box below. By default, the title is displayed to the left the Y-axis.

Insert

Use this button to add report information derived from dynamic values to the Y-axis title (e.g. workbook name, current date, current time). These dynamic values are updated automatically when you display, print, or export a graph.

Y1-axis Title Font

Use this button to display the "Graph Wizard dialog: Font dialog tab", which enables you to change the font style of the Y-axis label.

Select options for line on the Y1-Axis

- **Line thickness**

  Use this drop down list to change the weight of the Y-axis line.

- **Line color**

  Use this color pane to change the color of the Y-axis line.

Set the scale you would like to use on this axis

Use the following fields to change the scale of the X-axis.

- **Minimum**

Use this field to change the default lower axis range. Select the **Set automatically** check box if you want Discoverer to select the best range for you.

- **Maximum**

  Use this field to change the default higher axis range. Select the **Set automatically** check box if you want Discoverer to select the best range for you.

- **Increment**

  Use this field to change the default incremental axis range, or the granularity of the graph. Select the **Set automatically** check box if you want Discoverer to select the best range for you.

- **Base line value**

  Use this field to specify a starting value for the Y-axis. For example, you might have a monthly sales target of 10,000 units and you want to emphasis how total sales for each month relate to the 10,000 target. In other words, on a vertical Bar graph you want to:

  - display monthly sales totals greater than 10,000 above the base line
  - display monthly sales totals less than 10,000 below the base line.

  To achieve this graph layout you set the base line value to 10,000.

  Note: The Base line value field is grayed out on the following types of graph:

  - Bubble
  - Scatter
  - Stock
  - Polar
  - stacked graphs (e.g. Bar graphs of sub-type Dual-Y Stacked)
  - percent graphs (e.g. Bar graph of sub-type Percent)

  Note: If you are familiar with graphs in Microsoft Excel, changing the base line value is similar to setting the Category value in Microsoft Excel graphs.

Logarithmic scale

Use this check box to change the default linear scale of the X-axis to a logarithmic scale. When you select this check box, the adjacent **Base** drop down list becomes active, which enables you to change the default logarithmic base value.

You might use a logarithmic scale when you have numeric data that is widely spaced and you want to maintain the visibility of the smaller values. For example, if you had data ranging in value from 10 to 100,000 and you use the default linear scale, smaller values might not register on the graph. If you changed to a logarithmic scale of base 10, the smaller values would register on the graph.

Note: The *e* value in the **Base** drop down list is equal to 2.71 (sometimes referred to as a natural logarithm).

Reference Lines

Use this button to display the Reference Lines dialog, which enables you to define up to three lines on a graph to emphasize particular data values on a graph. For example, you might add a reference line show the target sales value, to emphasize which regions achieved a target. For an example of a reference line on a graph, see "About components of a Discoverer graph".

Y1-Axis Label Font

Use this button to display the "Graph Wizard dialog: Font dialog tab", which enables you to change the font style of the Y-axis label.

Notes

- Depending on which type of graph you are creating, the fields you can use might change as follows:
  - **Minimum**, **Maximum**, **Increment**, and **Logarithmic scale** fields are grayed out on percent graph types (e.g. Bar graph of sub-type Percent)
  - **Minimum**, **Maximum**, and **Logarithmic scale** fields are grayed out on Pareto graphs

Graph Wizard dialog: Y2-Axis tab

Use this dialog to configure the Y2-axis (i.e. the secondary vertical axis) of a graph. For example, you might have sales plotted on the Y1-axis on the scale 0 to 100,000 and

want to specify a title for the Y2-axis on a dual-Y Bar chart.

Note: The fields that you use to specify a graph depend on the graph type selected.

For more information, see:

"About using graphs in Discoverer"

"About components of a Discoverer graph"

"How to edit a graph"

Show Y2-Axis title

Use this check box to display or hide the Y2-axis graph title defined in the box below. By default, the title is displayed to the left the Y2-axis.

Insert

Use this button to add report information derived from dynamic values to the Y2-axis title (e.g. workbook name, current date, current time). These dynamic values are updated automatically when you display, print, or export a graph.

Y2-axis Title Font

Use this button to display the "Graph Wizard dialog: Font dialog tab", which enables you to change the font style of the Y2-axis label.

Select options for line on the Y2-axis

- **Line thickness**

  Use this drop down list to change the weight of the Y2-axis line.

- **Line color**

  Use this color pane to change the color of the Y2-axis line.

Set the scale you would like to use on this axis

Use the following fields to change the scale of the X-axis.

- **Minimum**

Use this field to change the default lower axis range. Select the **Set automatically** check box if you want Discoverer to select the best range for you.

- **Maximum**

  Use this field to change the default higher axis range. Select the **Set automatically** check box if you want Discoverer to select the best range for you.

- **Increment**

  Use this field to change the default incremental axis range, or the granularity of the graph. Select the **Set automatically** check box if you want Discoverer to select the best range for you.

- **Base line value**

  Use this field to specify a starting value for the Y2-axis. For example, you might have a monthly sales target of 10,000 units and you want to emphasis how total sales for each month relate to the 10,000 target. In other words, on a vertical Bar graph you want to:

  - display monthly sales totals greater than 10,000 above the base line
  - display monthly sales totals less than 10,000 below the base line.

  To achieve this graph layout you set the base line value to 10,000.

  Note: The Base line value field is grayed out on the following types of graph:

  - Bubble
  - Scatter
  - Stock
  - Polar
  - stacked graphs (e.g. Bar graphs of sub-type Dual-Y Stacked)
  - percent graphs (e.g. Bar graph of sub-type Percent)

  Note: If you are familiar with graphs in Microsoft Excel, changing the base line value is similar to setting the Category value in Microsoft Excel graphs.

Logarithmic scale

Use this check box to change the default linear scale of the X-axis to a logarithmic scale. When you select this check box, the adjacent **Base** drop down list becomes active, which enables you to change the default logarithmic base value.

You might use a logarithmic scale when you have numeric data that is widely spaced and you want to maintain the visibility of the smaller values. For example, if you had data ranging in value from 10 to 100,000 and you use the default linear scale, smaller values might not register on the graph. If you changed to a logarithmic scale of base 10, the smaller values would register on the graph.

Note: The *e* value in the **Base** drop down list is equal to 2.71 (sometimes referred to as a natural logarithm).

Y2-axis Label Font

Use this button to display the "Graph Wizard dialog: Font dialog tab", which enables you to change the font style of the Y2-axis label.

Reference Lines

Use this button to display the Reference Lines dialog, which enables you to define up to three lines on a graph to emphasize particular data values on a graph. For example, you might add a reference line show the target sales value, to emphasize which regions achieved a target. For an example of a reference line on a graph, see "About components of a Discoverer graph".

Notes

- Depending on which type of graph you are creating, the fields you can use might change as follows:
  - **Minimum**, **Maximum**, **Increment**, and **Logarithmic scale** fields are grayed out on percent graph types (e.g. Bar graph of sub-type Percent)
  - **Minimum**, **Maximum**, and **Logarithmic scale** fields are grayed out on Pareto graphs

Group Total dialog

Use this dialog to create a group total calculation (sometimes referred to as a reporting aggregate). A group total calculation aggregates values within a group. For example, you might want to calculate a total sales value for each quarter.

This type of analysis is sometimes referred to as windowing analysis.

For more information, see:

"What are analytic functions?"

"How to create a new calculation using an analytic function template"

"Windowing function examples"

Total on

Use this drop down list to choose the item for which you want to calculate the group total. For example, you might choose Sales SUM to calculate a total sales value for each year.

Total type

Use this drop down list to specify the type of total you want. For example, choose 'f(x) Sum' to add values in the group, or 'f(x) Avg' to produce an average of the values in the group.

Restart total at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, to calculate the total of Sales SUM values within year, you might choose Calendar Year. In other words, if you have sales values spanning two years, you will have a group total value for each year.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

Notes

- A group total analytic function is similar to a Discoverer worksheet total (for more information, see "Using totals"). However, the group total analytic function calculates a total value for each row in the group. Therefore, you can use group total analytic functions to build more complex calculations. For example, you might use a group total analytic function to calculate the Sales SUM as a percentage of the group total for the region.

  For more information about Discoverer worksheet totals, see "Using totals".

Heading Format dialog

Use this tab to change the default heading style for new worksheet items.

Note: Changing the default heading style does not change the heading style for existing worksheet items. Choose Sheet | Format to change the format of existing worksheet items.

For more information, see:

"About editing worksheets"

Font

Use this drop down list to specify a text font.

Size

Use this drop down list to specify a font size.

Style

Use this drop down list to specify a font style (for example bold, italic, underlined, or sans-serif).

Color

Use this icon to display a color chart, where you can change the default color.

Text

Use this color pane to specify a color for the item text.

Alignment

Use these buttons to set the horizontal text alignment (where applicable).

Actual font size

Use this check box to display text in the example area in the font size and style selected.

Join folders dialog

Use this dialog to specify how folders should be joined. Discoverer displays this dialog when it detects more than one possible join between two folders, when you create a worksheet.

For example, a product key item in a Products folder might be joined with a product key item in a Sales folder. The Products folder and Sales folder might also be joined by another item (e.g. Location) that exists in both of the folders. In this example Discoverer will display both joins enabling you to select the appropriate join for the query.

For more information, see:

"About multiple join paths"

There are several ways to join the folders you have selected. Please select the join or joins you want to use:

Use this list to select how you want to join folders.

It is recommended that you select all the joins displayed to make sure that Discoverer displays accurate results data.

Contact the Discoverer manager if you are not sure about selecting joins.

Note: Discoverer displays this dialog only if you have cleared the **Disable Multiple Join Paths** check box (for more information, see the "Options dialog: Advanced tab").

Move Worksheets dialog

Use this dialog to rearrange the worksheets in the workbook. For example, you might want to move an important worksheet to the front of a workbook so that it is displayed when a workbook is opened by another Discoverer user.

For more information, see:

"About the tutorial workbook?"

Worksheets

Use this list to select which worksheet you want to move.

Up arrow

Use this button to move the selected worksheet one position up the worksheet list.

Down arrow

Use this button to move the selected worksheet one position down the worksheet list.

Moving Total dialog

Use this dialog to create a moving total calculation. A moving total calculation calculates a total for the specified number of rows or a specified time period before each value. For example, you might want to a three month moving average of sales figures.

This type of analysis is sometimes referred to as windowing analysis.

For more information, see:

"What are analytic functions?"

"Examples of using row-based and time-based intervals"

"How to create a new calculation using an analytic function template"

"Windowing function examples"

Total on

Use this drop down list to choose the item for which you want to calculate the moving total. For example, you might choose Sales SUM to calculate a moving total of sales values.

Total type

Use this drop down list to specify what type of total you want. For example, choose 'f(x) Sum' to add values in the group, or 'f(x) Avg' to produce an average of the values in the group.

Start on

Use this drop down list to specify the number of rows or the number of time periods in which you want to compare the values.

You specify a number of rows or a time period before the current value. For example, you might choose 2 to calculate the total from two values before each value, including the current value. In other words, you choose 2 if you want a three month moving average.

Use the adjacent drop down list to choose a row-based interval or a time-based interval. For example, you might choose Months Before Current Value if you want a three month moving average.

Hint: If you have time-based data, use time-based groups (e.g. Days / Weeks / Months Before Current Value). If you do not have time-based data,

use row-based groups (e.g. Rows Before Current Value). For more information about types of group, see "About windowing".

For examples of specifying row-based and time-based intervals, see "Examples of using row-based and time-based intervals".

Order rows by

Use this drop down list to specify how to order the values. For example, you might choose Calendar Month if you want a three month moving average.

Use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Hint: If you have specified a time-based group in the **Start on** drop down list, specify a time-based **Order rows by** value (e.g. Calendar Month).

Then order rows by

Use this drop down list to specify a secondary order for the values. For example, you might choose City to sort values on city within month.

Use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Note: This drop down list is only enabled if you specified a row-based group in the **Start on** drop down list. This drop down list is only disabled if you specified a time-based group in the **Start on** drop down list.

Restart moving total at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, to calculate a three month moving average for Sales SUM values within a give year and region, you might choose Calendar Year and Region.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

New Calculation dialog

Use this dialog to create a new calculation. For example, you might want to analyze the worksheet data in a new way and add a column to the worksheet to do this.

For more information, see:

"What are calculations?"

"Discoverer calculation examples"

"How to create calculations"

"How to create a new calculation using an analytic function template"

What do you want to name this calculation?

Use this field to enter a descriptive name for the calculation item. This name is displayed in calculation lists and on worksheets as the column header of the calculation results column. If you leave this box blank, Discoverer creates a default name for you.

Show

Use this drop down list to display calculations, functions, items and parameters that you can use to build a calculation. To include items in the calculation, paste them into the **Calculation** field.

Use the **Show** list options as follows:

- Use the Functions option to display an extensive list of predefined Oracle functions.
- Use the Selected option to display items in the worksheet.
- Use the Available option to display all items in the business area.
- Use the Calculations option to display existing worksheet calculations.
- Use the Parameters option to display existing worksheet parameters. When you add parameters to the **Calculation** field, the parameter name is prefixed with ':' to indicate that it is a dynamic value set by the worksheet user. For more information about adding parameters to calculations, see "About using parameters to collect dynamic user input".

Paste

Use this button to the add the item currently selected in the **Show** list to the Calculation. The item is copied into the **Calculation** field.

Calculation

Use this field to enter the calculation details (for calculation examples, see "Discoverer calculation examples").

To create a calculation, you one or more of the following methods:

- Type the formula directly into the **Calculation** field.

  Note: If you type an expression in the **Calculation** field, you must prefix the expression with an equals sign (i.e. =). For example, '=Sales SUM-Costs SUM'.

- Paste items and functions from the **Show** field into the calculation.
- Click the operator buttons underneath the **Calculation** field to use them in the calculation.
- Use a template to help you define an analytic function. Click Insert Formula from Template (see **Insert Formula from Template** field below).

Insert Formula from Template

Use this button to display a pop-up list of templates that you can use to build analytic functions. For example, choose Rank to display an easy-to-use Rank template that helps you create a league table position calculation. For more information about templates available, see "What analytic function templates are available in Discoverer".

Operator buttons [+] [-] [x] [/] [%] [(] [)] [||]

Use these buttons to add operators to the calculation. Operators are copied into the **Calculation** field.

Note: When you use arithmetic expressions in a calculation, the multiply and divide operators are executed first, regardless of their position in the calculation. If you have more than one operator of the same precedence, they are evaluated from left to right.

For example, the calculation Price – Discount * Quantity is evaluated as Discount*Quantity subtracted from Price. If you use parentheses around the subtraction expression (Price – Discount), the subtraction is executed before the multiplication.

OK

Use this button to validate and save the calculation, as follows:

- If the calculation has valid syntax, the calculation is saved and displayed in the Calculations dialog.
- If the calculation has invalid syntax, an error message is displayed. You must correct any syntax errors before you can save the calculation.

Notes

- The table below shows the functions available in the box beneath the **Show** drop down list.

Category	Description
All Functions	An alphabetical list of all functions.
Analytic	Advanced statistical analysis, such as RANK, NTILE, CORR.
Conversion	Converting from one data type to another, such as: RAWTOHEX, TO_CHAR, TO_DATE.
Database	Optional category that is displayed when user defined functions are available (created using the Register PL/SQL Functions facility on the Tools menu in Oracle Discoverer Administrator).
Date	Manipulating date items such as ADD_MONTHS, NEW_ TIME, SYSDATE and NEXTDATE.
Group	Aggregate and statistical functions including SUM, COUNT, MAX, MIN, VARIANCE.
Numeric	Numeric items and floating point such as COS, LOG, MOD, POWER.
Others	Miscellaneous functions such as LEAST, USER, DECODE, ROWNUM.
String	Character items, text operations such as INITCAP, LPAD, NLS_UPPER.

- For detailed information about all functions available in Discoverer, see *Oracle8i/9i SQL Reference* and *Oracle8i/9i Data Warehousing Guide.*
- For examples of the most commonly used functions, see "Discoverer calculation examples".

New Condition dialog

Use this dialog to create a new condition item. For example, you might want to filter the data in the worksheet data in a new way.

For more information, see:

"What are conditions?"

What would you like to name your condition

Use this field to enter a descriptive name for the condition item. This name is displayed in the condition list on the Conditions dialog.

Generate name automatically?

Use this check box if you want Discoverer to create a default name for you. The default name is based on the condition syntax.

What description would you like to give your condition

Use this field to enter a brief description for the new condition. This description is displayed in the description box on the Conditions dialog and helps workbook users choose which condition they want to use.

Formula

This area is where you build the condition. The condition can contain one or more condition statements.

Item

Use this drop down list to filter the worksheet by selecting an item to match against. For example, to filter information about people whose salary is more than $30,000, you might choose an item called 'Salary' here.

You can also choose from the following options:

- If you want to add an existing condition, choose Select Condition... to display the "Select Condition dialog".
- If you want to insert a calculation to use in the condition formula, choose Create Calculation... to display the "New Calculation dialog".

Condition

This drop down list displays a list of logical operators that you can use to match against the Item selected. For example, to filter information about people who earn more than $30,000, you might choose the 'greater than' operator (>) here.

For more information on logical operators available, see Notes below.

Values

Use this field to enter one or more values that you want to use to match against the selected Item. For example, if you want filter information about people who earn more than $30,000, enter 30,000 here.

You can also choose from the following options:

- If you want to match the selected item against a new calculation, choose Create Calculation to display the "New Calculation dialog".
- If you want to match the selected item against an existing worksheet item, choose Select Item to display the "Select Item dialog".
- If you want to match the selected item against a new worksheet parameter, choose New Parameter to display the "New Parameter dialog".
- If you want to match the selected item against an existing parameter, choose Select Parameter to display the "Select Parameter dialog".

Note: You can enter up to 254 values in this field. If you want to enter more than 254 values in the condition, click Advanced and use the OR option to add a new condition statement line for the extra values.

Case sensitive

Use this check box to make the condition case sensitive when matching against text data. For example, if turned on, the value 'New York' would not find details containing 'NEW YORK' because the text cases do not match exactly. If turned off, the value 'New York' would find details containing 'NEW YORK' and 'new york'.

Advanced

Use this button to expand the dialog box enabling you to apply multiple condition statements to an item. The expanded dialog displays New Item, And, Or, Delete and Undo buttons. A Group column is also added to the Formula box (see Group below).

Expanded Advanced options

New Item

Use this button to add a new condition statement line to the condition. By default, new condition statement lines are grouped with the logical AND operator. In other words, the data must satisfy both condition statements to be filtered in the worksheet (see Group below).

And

Use this button to add a new condition statement line to the condition and group it with the previous condition statement line with a logical AND operator. Using 'AND' narrows a search to display only items that match all criteria. For example, with two condition statements, data must match condition statement one and condition statement two.

Or

Use this button to add a new condition statement line to the condition and group it with the previous condition statement line with a logical OR operator. Using 'OR' widens a search to display items that match any of the criteria. For example, with two condition statements, data must match *either* condition statement one or condition statement two. (In SQL terms, this is an *inclusive* OR clause.)

Delete

Use this button to remove the currently selected condition statement line from the condition.

Undo

Use this button to retrieve the deleted condition details if you delete a condition statement line from the condition and then change your mind.

Group

AND

Use this button to change the Group operator to a logical ‘AND’. You must have the current Group item selected. Using 'AND' narrows a search to display only items that match all criteria in the group.

OR

Use this button to change the Group operator to a logical ‘OR’. You must have the current Group item selected. Using 'OR' widens a search to display items that match any of the criteria in the group.

NOT AND

Use this button to change the Group operator to a logical ‘NOT AND’ operator.

NOT OR

Use this button to change the Group operator to a logical ‘NOT OR’ operator.

Notes

- The following table describes logical operators available when matching data against items.

Operator	Meaning	How it is used
=	equals	Year = 2001 Display only data for the year 2001.
<>	Not equals	Year <> 2001 Display data where the year is not 2001
>	Greater than	Clicks > 10 Display data where the number of clicks on a website is more than 10
<	Less than	Salary < 50,000 Display data for people who earn less than 50,000
LIKE	Similar to	Employee_name LIKE CH% Display data for employees whose name begins with CH.
IN	Equal to any member of	WHERE job IN ('CLERK','ANALYST');

New Parameter dialog

Use this dialog to create a new parameter item. For example, you might want to enable Discoverer users to choose how they filter worksheet data when a worksheet is opened.

For more information, see:

"What are parameters?"

"About using parameters"

What do you want to name this parameter?

Use this field to enter a descriptive name for the parameter. This name is displayed in the parameter list on the Parameter dialog. If you leave this box blank, Discoverer creates a default name for you.

Which item do you want to base your parameter on?

Use this drop down list to specify which item you want to base the parameter on, as follows:

- If you want to use the parameter to filter worksheets, select the item that you want to filter on from the list of items currently displayed on the worksheet. Make sure that the **Create Condition** check box is then selected so that a condition is automatically created to filter the worksheets using the item selected. For example, to filter a worksheet on calendar month, you might choose Month here.

  Hint: If you want to base your parameter on an item that is not displayed on the worksheet, use the **More items** option to display the "Select Item dialog". The "Select Item dialog" enables you to choose from all items available to the worksheet.

- If you want to use the parameter to use the parameter to provide input to a calculation, select the <NONE> option. For example, choose <NONE> to enable worksheet users to choose how much percentage increase they want to display on a worksheet.

What prompt do you want to show other users?

Use this field to enter a question or instruction that tells users what information they need to enter when choosing a parameter value. This prompt is displayed on the Edit Parameter Value dialog. For example, 'What year do you want to look at?',

or 'Please choose a region'. If you leave this box blank, Discoverer creates a default prompt for you.

What description do you want to show other users?

Use this field to enter a brief description of the parameter that tells users what the parameter is used for. This description is displayed in the parameter list on the Parameters dialog, and on the Edit Parameter Values dialog.

What default value do you want to give this parameter?

Use this field to enter the most commonly used parameter value as default on the Edit Parameter Values dialog. If users do not enter a value, the value that you enter here is used.

Let other users select multiple values?

Use this check box if you want users to be able to choose more than one value to match against the item.

Note: Clear this check box if you selected <NONE> from the **Which item do you want to base your parameter on?** drop down list. If a Discoverer end user enters more than one parameter value, only the first parameter value is used.

Do you want to allow different parameter values for each worksheet?

- Use the **Allow only one set of parameter values for all worksheets** radio button to make parameter values cascade across all worksheets in the workbook.
- Click the **Allow different parameter values for each worksheet** radio button to limit parameter values to the current worksheets.

Create condition

This check box is selected by default when you create a new parameter, and is automatically cleared if select <NONE> from the **What do you want to base your parameter on?** list. If you want to use the parameter to filter worksheets, make sure that the **Create Condition** check box is then selected so that a condition is automatically created to filter the worksheets using the item selected.

User operator

Use this list to specify how you want to filter worksheets.

New Percentage dialog

Use this dialog to create a new percentage item. For example, you might want to analyze the worksheet in a new way by calculating your monthly sales as a percentage of annual sales.

For more information, see:

"What are percentages?"

What do you want to name this percentage?

Use this field to enter a descriptive name for the percentage item. This name is displayed in percentage lists and on worksheets as the column header of the percentage item. If you leave this box blank, Discoverer creates a default name for you.

What data point do you want to base your percentage on?

Use this drop down list to select which item you want to base your percentage on. The list displays numeric items available to the worksheet.

Calculate as a percentage of:

Use these radio buttons to choose how the percentage is calculated.

- **Grand total of all values**

  Use this radio button to calculate a percentage of all values.

- **Grand total for each column**

  Use this radio button to calculate a percentage for the item column (specific to crosstab worksheets).

  Note: This field is only displayed when you add a total to a crosstab worksheet.

- **Grand total for each row**

  Use this radio button to calculate a percentage for the item row (specific to crosstab worksheets).

  Note: This field is only displayed when you add a total to a crosstab worksheet.

- **Subtotal for each change in**

  Use this radio button to calculate a percentage for a sub-group. Select an item from the drop down list below to define the item that you want to sub-group.

For example, to calculate a percentage total for each calendar year, you might choose 'Year' here.

Do you want to calculate percentages within each page?

Use these radio buttons to choose whether to calculate the percentage for each page, or for all pages.

Note: You only use these radio buttons if the worksheet has page items.

- **Calculate percentages with each page**

  Use this radio button to calculate percentages for data on the current page. For example, if Region is displayed in the **Page Items** area, you might want to calculate how sales for each quarter contribute to total sales for the each region.

- **Calculate percentages across all pages**

  Use this radio button to calculate percentages for all pages. For example, if Region is displayed in the **Page Items** area, you might want to calculate how sales for each quarter contribute to total sales for the all regions.

Example

This area shows you how your worksheet will look according to what options you specify.

Which totals do you want to be shown?

Use these options to specify how you want totals and sub totals to be displayed.

Show grand total and grand total percentage?

Use this check box to display a sum of all values and a sum of the percentages (specific to the **Grand total for all values** option).

Label

Use this field to define the grand total percentage label that will appear on the worksheet (if selected). To enter a different label, click the down arrow on the right of the field. To format the label, click the Format button and choose how you want the label to look on the worksheet.

Show subtotals and subtotal percentage

Use this check box to display a subtotal for values in the item group, and a percentage for the subgroup (specific to the **Subtotal at each change in** option).

Note: This field is only displayed when you add a total to a crosstab worksheet.

Label

Use this field to define the subtotal percentage label that will appear on the worksheet (if selected). To enter a different label, click the down arrow on the right of the field. To format the label, click the Format button and choose how you want the label to look on the worksheet.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Format Data

Use this button to display the "Format Data dialog", where you change how the values look on the worksheet.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Format Heading

Use this button to display the "Format heading dialog", where you change how the item headings look on the worksheet.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Show the percentage of the grand total for each subtotal

Use this check box to display a subtotal as a percentage of the grand total.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Label

Use this field to define the grand total percentage label that will appear on the worksheet (if selected). To enter a different label, click the down arrow on the right of the field. To format the label, click the Format button and choose how you want the label to look on the worksheet.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Format Data

Use this button to display the "Format Data dialog", where you change how the values look on the worksheet.

Note: This field is only displayed when you add a total to a crosstab worksheet.

Format Heading

Use this button to display the "Format heading dialog", where you change how the item headings look on the worksheet.

Note: This field is only displayed when you add a total to a crosstab worksheet.

New Scheduled Workbook Results dialog

Use this dialog to see which scheduled workbook results have been processed and are ready to use. This dialog appears when workbooks that you have scheduled have been processed since you last connected to Discoverer, and are ready to use. For example, if you start Discoverer in the morning, scheduled workbooks that you have access to that have been processed overnight will be ready to use.

Note: Click the **Don't show this window again** check box when you do not want to display this dialog in future.

For more information, see:

"What are scheduled workbooks?"

"When do I need to use scheduled workbooks?"

"About how scheduled workbooks are processed?"

New scheduled workbook results have been generated

Use this list to see which workbook results are ready to use and to select scheduled workbooks to open.

Don't show this window again

Use this check box when you do not want Discoverer to inform you about new scheduled workbooks that are ready to use.

Scheduling Manager

Use this button to display the "Scheduling Manager dialog", where you manage scheduled workbooks. For example, you can open, edit, delete, and schedule workbooks that you have created.

Open

Use this button to open the currently selected scheduled workbook.

New Total dialog

Use this dialog to create a new total on the worksheet. For example, you might want to analyze the worksheet in a new way by summing a column of sales figures.

For more information, see:

"What are totals?"

"About SUM and Cell SUM"

Which data point would you like to create a total on?

Use this drop down list to specify which items you want to create a total for. You can specify a particular item or choose all items.

What kind of total do you want?

Use this drop down list to specify what type of total you want.

Where would you like your total to be shown?

Use these radio buttons to specify where to display the total.

- **Grand total at bottom**

  Use this radio button to display a grand total of all values in the worksheet.

- **Grand total on right**

  Use this radio button to display a total for the item row.

  Note: This field is only displayed when you add a total to a crosstab worksheet.

- **Subtotal at each change in**

  Use this radio button to calculate a total for a sub-group. Select an item from the drop down list below to define the item that you want to sub-group. For example, to calculate a total for each calendar month, you might choose 'Month' here.

Don’t display total for a single row

Use this check box to not display a total for a single row, where the row and total would have the same value.

Note: This field is called **Don’t display total for single rows or columns** when you add a total to a crosstab worksheet.

Do you want to calculate totals within each page?

Use these radio buttons to choose the scope of the total. For example, if a worksheet contains page items (i.e. items are displayed in the **Page Items** area), you might want to display a total at the bottom of each page.

- **Calculate totals with each page**

  Use this radio button to apply the total to data displayed on the worksheet. For example, if Calendar Month is displayed in the **Page Items** area, you display a grand total for each month.

- **Calculate totals across all pages**

  Use this radio button to apply the total to all data in the worksheet. The total takes into account other page items not currently displayed on the worksheet. For example, if Calendar Month is displayed in the **Page Items** area, you display a grand total for all months.

Example

This area shows you how your worksheet will look according to what options you specify.

What label do you want to be shown?

Use this field to specify what total label will be displayed on the worksheet. If the **Generate label automatically** check box is selected below, Discoverer creates a name for you. To enter a different label, clear the **Generate label automatically** check box and either type in a new label or choose a label from the drop down list on the right of the field. To change the default text style of the label, click the Format button and choose a text font, style, color and alignment.

Generate label automatically

Use this check box if you want Discoverer to create a total name for you. To change the default text style, click the Format button and choose a text font, style, color and alignment.

Format Data

Use this button to display the "Format Data dialog", where you change how the values look on the worksheet.

Format Heading

Use this button to display the "Format heading dialog", where you change how the item headings look on the worksheet.

Open Scheduled Workbook dialog

Use this dialog to choose which scheduled workbook you want to display. For example, you might have scheduled a large or complex workbook to be processed overnight, which is now ready to analyze. Or you might want to display a workbook scheduled by another Discoverer user.

For more information, see:

"What are scheduled workbooks?"

Choose a workbook to open

Use this list to specify which scheduled workbook you want to look at. The name details include the data and time that the workbook was created. To open a workbook, either double-click a workbook or select a workbook and click **Open**.

Open

Use this button to open the currently selected scheduled workbook in Discoverer.

Description

This area displays background information about the workbook entered when the workbook was created. This information helps you decide which workbook you want to analyze. This area could be blank if not additional information was entered.

Open Workbook from Database dialog

Use this dialog to choose which workbook you want to look at. For example, you might have saved a Discoverer workbook previously and want to use it again. Or, you might want to look at a workbook created by another Discoverer user.

For more information, see:

"What are workbooks?"

Choose a workbook to open

Use this list to specify which workbook you want to look at. To open a workbook, either double-click a workbook or select a workbook and click **Open**.

Hint: Type a letter to jump to workbook names beginning with that letter.

Open

Use this button to open the currently selected workbook in Discoverer.

Description

This area displays background information about the workbook entered when the workbook was created. This information helps you decide which workbook you want to analyze. This area could be blank if not additional information was entered.

Open Workbook dialog

Use this dialog to specify the type of workbook you want to open. When opening a workbook, you need to know whether it is a workbook stored in the Discoverer database, or whether it is a scheduled workbook stored in the Discoverer database.

If you are not sure about the type of workbook to open, contact the Discoverer manager.

For more information, see:

"What are workbooks?"

Where is the workbook you want to open?

Use these radio buttons to choose the type of workbook to open.

- **Database**

  Use this radio button to look for a workbook in the database. Unless you work with large amounts of data, most workbooks that you access will be of this type.

- **Scheduled**

  Use this radio button to look for a scheduled workbook in the database. If you work with large amounts of data, the workbook that you want might have been scheduled. This means that because of its size or complexity it is processed at a specific time, typically overnight.

  Contact the Discoverer manager for more information.

Open

Use this button to list workbooks available of the type specified.

Options dialog: Advanced tab

Use this tab to configure the way that Discoverer keeps workbook data up-to-date, and how it processes complex data. For example, if you use static data that is not changed frequently, you might not want a workbook refreshed.

For more information, see:

"About multiple join paths"

"About fan traps"

"About automatic querying"

Disable automatic querying?

Use this check box when you do not want the worksheet to be refreshed with up-to-date data when the sheet format is changed. Do not select this check box without first contacting the Discoverer manager.

Disable fan trap detection?

Clear this check box if you want Discoverer to detect potential fan trap configurations, generate the correct SQL and display correct worksheet data. Where Discoverer cannot resolve a fan trap, Discoverer prevents the worksheet from running and displays a warning message dialog.

Note: It is recommended that you clear this check box. Do not select this check box without first contacting the Discoverer manager.

Select this check box if you do not want Discoverer to detect or resolve potential fan trap configurations (see Note above).

Disable multiple join paths?

Use this check box when you want to disable multiple join detection.

Note: Do not select this check box without first contacting the Discoverer manager as Discoverer might display unexpected data depending on the join(s) that Discoverer automatically selects.

Select this check box for Discoverer to automatically select all joins between folders (where more than one join exists between two folders) when you create a worksheet.

Clear this check box for Discoverer to display the "Join folders dialog" (where more than one join exists between two folders) when you create a worksheet.

Options dialog: Aggregation tab

Use this tab to control how Discoverer populates cells for aggregated values (sometimes referred to as roll-up values). For more information about aggregated values in Discoverer, see "What are aggregated values in Discoverer?".

In most cases, Discoverer calculates aggregated values by simply adding up a series of data points. In some cases however, Discoverer cannot compute aggregated values in this way and requires a more complex calculation to obtain the correct results. For example, if you are using an Oracle8*i* database, Discoverer cannot compute aggregated values for certain specific non-linear calculations, or worksheet items based on the following SQL functions:

- a CASE SQL statement
- a DECODE SQL statement
- a PL/SQL function
- a DISTINCT SQL statement
- an analytic function

Note: For more information about linear and non-linear calculations in Discoverer, see "What are linear and non-linear calculations?".

In these cases, you might want to use the aggregation options on this tab (for more information about aggregation options, see "Aggregation options") to control how the aggregated values are computed, as follows:

- If you are using an Oracle9i database, Discoverer can compute a total for non-linear calculations. Therefore you typically select the **Show the aggregated value calculated by the database. The database uses the same aggregation method as Discoverer** option. For an example, see "Example 1: Example of a Rank calculation using an Oracle9i database".

  In the unlikely event that you want Discoverer to compute an aggregated value by simply add up a series of data points, select the **Show the sum of the values displayed in the contributing cells** option.

- If you using an Oracle8i database, Discoverer cannot compute a total for certain specific non-linear calculations. Therefore, do one of the following:

  - select the **Show <*Non-aggregable label*>, the "values that cannot be aggregated" option, set on the Sheet Format tab** option if you want to display a non-aggregable label (e.g. N.A). For an example, see "Example 2: Example of a weighted margin calculation using an Oracle8i database".

- select the **Show the sum of the values displayed in the contributing cells** option if you want Discoverer to compute an aggregated value by simply adding up a series of data points. For an example, see "Example 3: Example of a weighted margin calculation using an Oracle8i database".

Notes

- To find out which database version you are using, choose Help | About Discoverer to display the About Oracle Discoverer page, and look at the Enterprise Edition Release number.
- For an example of a Discoverer worksheet that includes repeated values, see "Example 4: Example showing how Discoverer does not aggregate repeated values using an Oracle9i database".

For more information, see:

"Field level descriptions"

"What are linear and non-linear calculations?"

"Examples of worksheet aggregation in Discoverer"

"Notes on sharing worksheets between Discoverer Desktop and Discoverer Plus/Viewer users"

Field level descriptions

Use these options to specify how you want Discoverer to populate cells for aggregated values. If you clear the **Use the aggregation behavior selected by the Discoverer manager** check box, the radio button options beneath become active.

Use the aggregation behavior selected by the Discoverer manager

Use this check box to control whether you specify how Discoverer calculates aggregated values, or whether you accept the default Discoverer behavior specified for you by the Discoverer manager, as follows:

- Select this check box if you want the Discoverer manager to specify how Discoverer calculates aggregated values. The radio button options show which aggregation behavior the Discoverer manager has specified for you.

  Note: This is the recommended option. To avoid getting non-meaningful results, do not clear this check box unless you are advised to do so by the Discoverer manager.

- Clear this check box if you want to specify how Discoverer calculates aggregated values by selecting one of the radio button options. If you clear this check box, make sure that you get the worksheet results that you expect if you select a different aggregation option to the default aggregation option.

Hint: For more information about the Discoverer manager, see "Who is the Discoverer manager and what do they do?".

Aggregation options

If you clear the **Use the aggregation behavior selected by the Discoverer manager** check box, use these options to manually control how Discoverer populates cells for aggregated values.

- **(Oracle9*i* specific) Show the aggregated value calculated by the database. The database uses the same aggregation method as Discoverer**

  Use this radio button if you are using an Oracle9i database and you want Discoverer to compute an aggregated value by adding up data points and applying the calculation to the result. For an example, see "Example 1: Example of a Rank calculation using an Oracle9i database".

  Note: This field is only displayed when you are using an Oracle9*i* database.

- **Show <*Non-aggregable label*>, the "values that cannot be aggregated" option, set on the Sheet Format tab**

  Use this radio button if you have an Oracle8*i* database and you want Discoverer to display the non-aggregable label (e.g. N.A.) for certain specific non-linear calculations that cannot be aggregated. For an example, see "Example 2: Example of a weighted margin calculation using an Oracle8i database".

  The non-aggregable label is the display text that you specify on the "Options dialog: Sheet Format tab (on a crosstab worksheet)".

  Note: You typically will not use this option if you are using an Oracle9*i* database.

- **Show the sum of the values displayed in the contributing cells**

  Use this radio button when you want Discoverer to compute an aggregated value by simply adding up a series of data points. For an example, see "Example 3: Example of a weighted margin calculation using an Oracle8i database".

What are aggregated values in Discoverer?

Aggregated values in Discoverer are:

- values that Discoverer calculates when you add a worksheet total to a worksheet

  For example, the table worksheet below contains a worksheet total (i.e. displayed as Sum: $877,594) that aggregates the Sales Sum values for regions to create a yearly total.

Year	Region	Sales Sum
1999	Central	$259,437
	East	$401,983
	West	$216,174
		Sum: $877,594

  For more information about worksheet totals, see "What are totals?".

- outline values that Discoverer calculates for you on a crosstab worksheet (if the worksheet style is set to outline)

  For example, in the crosstab worksheet below Discoverer adds up the Profit Sum and Sales Sum for Chicago and Louisville to create aggregated values for the Central region (i.e. $49,246, $77,668).

		Year	1998	
			Profit Sum	Sales Sum
Region	City			
Central			$49,246	$77,668
	Chicago		$11,638	$16,433
	Louisville		$37,607	$61,235

  Note: Discoverer calculates aggregate values on a crosstab worksheet if the worksheet uses the Outline style (i.e. if you select the **Outline** radio button from the **Style** options on the "Options dialog: Sheet Format tab (on a crosstab worksheet)".

What are linear and non-linear calculations?

Linear calculations are worksheet calculations that Discoverer aggregates by simply adding up a series of data points. For example, in the crosstab

worksheet below Discoverer adds up the Profit Sum and Sales Sum for Chicago and Louisville to create aggregated values for the Central region (i.e. $49,246, $77,668).

		Year	1998	
			Profit Sum	Sales Sum
Region	City			
Central			$49,246	$77,668
	Chicago		$11,638	$16,433
	Louisville		$37,607	$61,235

Non-linear calculations are worksheet calculations that Discoverer aggregates by adding up data points and applying the calculation to the result. For example, in the crosstab worksheet below Discoverer calculates the aggregated value for the Sales Margin item by applying the calculation 'Profit Sum / Sales SUM' to the aggregated values for Profit Sum and Sales Sum. In other words Discoverer calculates the aggregated value for the Sales Margin item for the Central region as 0.634 (i.e. 49,246 / 77,668), not as 1.322 (i.e. 0.708 + 0.614).

		Year	1998		
			Profit Sum	Sales Sum	Sales Margin
Region	City				
Central			$49,246	$77,668	0.634
	Chicago		$11,638	$16,433	0.708
	Louisville		$37,607	$61,235	0.614

Examples of worksheet aggregation in Discoverer

The following examples show how the aggregation options affect how Discoverer displays aggregated values:

Example 1: Example of a Rank calculation using an Oracle9*i* database

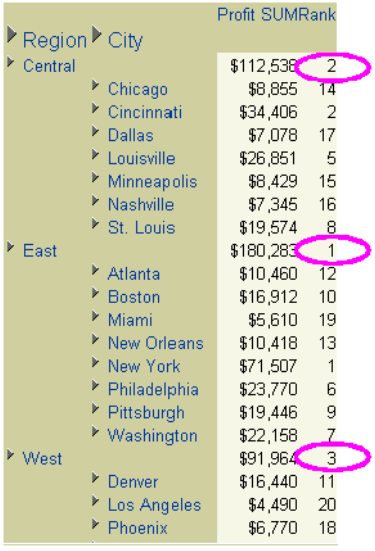
In this example (using an Oracle9*i* database), you want to calculate a ranked list of cities based on profits. You want the highest profits to have the highest rank. You create a Discoverer calculation called 'Rank' with the following formula:

RANK() OVER(PARTITION BY "Calendar Year" ORDER BY "Profit SUM" DESC)

You want Discoverer to calculate the 'Rank' aggregated value as follows:

- rank regions against each other (e.g. the East region is ranked 1 with profits of $180,283 and the Central region is ranked 2 with profits of $112,538)
- rank cities against each other (e.g. New York is ranked 1 with profits of $71,507, and Cincinnati is ranked 2 with profits of $34,406)

The worksheet below shows how Discoverer calculates the ranks if you select the **Show the aggregated value calculated by the database. The database uses the same aggregation method as Discoverer** option on the "Options dialog: Aggregation tab".



Region	City	Profit SUM	Rank
Central		$112,538	2
	Chicago	$8,855	14
	Cincinnati	$34,406	2
	Dallas	$7,078	17
	Louisville	$26,851	5
	Minneapolis	$8,429	15
	Nashville	$7,345	16
	St. Louis	$19,574	8
East		$180,283	1
	Atlanta	$10,460	12
	Boston	$16,912	10
	Miami	$5,610	19
	New Orleans	$10,418	13
	New York	$71,507	1
	Philadelphia	$23,770	6
	Pittsburgh	$19,446	9
	Washington	$22,158	7
West		$91,964	3
	Denver	$16,440	11
	Los Angeles	$4,490	20
	Phoenix	$6,770	18

The table below shows how Discoverer calculates the 'Rank' aggregated values for the different options on the "Options dialog: Aggregation tab".

Check box selected	What value is displayed
(Oracle9*i* database only) Show the aggregated value calculated by the database. The database uses the same aggregation method as Discoverer	Valid ranks for each region and for each city (as in example above)
Show <*Non-aggregable label*>, the "values that cannot be aggregated" option, set on the Sheet Format tab	<N.A.>

Check box selected	What value is displayed
Show the sum of the values displayed in the contributing cells	<N.A.> **Note**: Discoverer does not linearly aggregate values based on analytic functions.

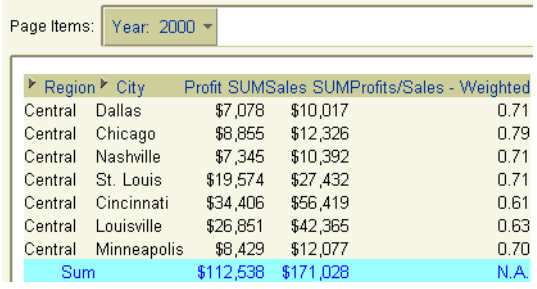
Example 2: Example of a weighted margin calculation using an Oracle8*i* database

In this example (using an Oracle8*i* database), a worksheet displays profits and sales data for cities in regions. You want to calculate a weighted margin increase of 10% for Chicago and no margin increase for other cities. You create a Discoverer calculation called 'Weighted Profits / Sales' with the following formula:

> CASE WHEN Video Analysis Information.City = 'Chicago' THEN Profit SUM / Sales SUM*1.1 ELSE Profit SUM / Sales SUM END

With an Oracle8*i* database, Discoverer cannot compute aggregated values for certain specific non-linear calculations, or worksheet items based on CASE SQL statements. Therefore, you cannot display the 'Weighted Profits / Sales' aggregated value as 0.66 (i.e. $112, 538 / $171,028). In this scenario, you can either display the non-aggregable label (e.g. N.A.) or compute an aggregated value by simply adding up the 'Weighted Profits / Sales' values to get 4.86. In this example you want to display the non-aggregable label (e.g. N.A.).

The worksheet below shows how Discoverer displays the 'Weighted Profits / Sales' aggregated value as the non-aggregable label 'N.A' if you select the **Show <*Non-aggregable label*>, the "values that cannot be aggregated" option, set on the Sheet Format tab** option on the "Options dialog: Aggregation tab".


Page Items: Year: 2000

Region	City	Profit SUM	Sales SUM	Profits/Sales - Weighted
Central	Dallas	$7,078	$10,017	0.71
Central	Chicago	$8,855	$12,326	0.79
Central	Nashville	$7,345	$10,392	0.71
Central	St. Louis	$19,574	$27,432	0.71
Central	Cincinnati	$34,406	$56,419	0.61
Central	Louisville	$26,851	$42,365	0.63
Central	Minneapolis	$8,429	$12,077	0.70
Sum		$112,538	$171,028	N.A.

The table below shows how the 'Weighted Profits / Sales' aggregated value is calculated for the different radio button options on the "Options dialog: Aggregation tab".

Check box selected	What value is displayed
Show <*Non-aggregable label*>, the "values that cannot be aggregated" option, set on the Sheet Format tab	<N.A> (as in example above)
Show the sum of the values displayed in the contributing cells	4.86 (a simple addition of the Weighted Profits / Sales values)

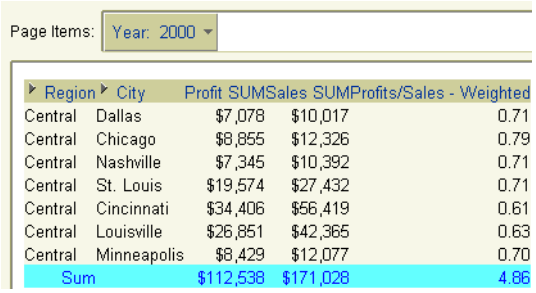
Example 3: Example of a weighted margin calculation using an Oracle8*i* database

In this example (using an Oracle8*i* database), a worksheet displays profits and sales data for cities in regions. You want to calculate a weighted margin increase of 10% for Chicago and no margin increase for other cities. You create a Discoverer calculation called 'Weighted Profits / Sales' with the following formula:

> CASE WHEN Video Analysis Information.City = 'Chicago' THEN Profit SUM / Sales SUM*1.1 ELSE Profit SUM / Sales SUM END

With an Oracle8*i* database, Discoverer cannot compute aggregated values for certain specific non-linear calculations, or worksheet items based on CASE SQL statements. Therefore, you cannot display the 'Weighted Profits / Sales' aggregated value as 0.66 (i.e. $112, 538 / $171,028). In this scenario, you can either display the non-aggregable label (e.g. N.A.) or compute an aggregated value by simply adding up the 'Weighted Profits / Sales' values to get 4.86. In this example you want to compute an aggregated value by simply adding up the 'Weighted Profits / Sales' values to get 4.86.

The worksheet below shows how Discoverer calculates the 'Weighted Profits / Sales' aggregated value as 4.86 if you select the **Show the sum of the values displayed in the contributing cells** option on the "Options dialog: Aggregation tab".



Page Items: Year: 2000

Region	City	Profit SUM	Sales SUM	Profits/Sales - Weighted
Central	Dallas	$7,078	$10,017	0.71
Central	Chicago	$8,855	$12,326	0.79
Central	Nashville	$7,345	$10,392	0.71
Central	St. Louis	$19,574	$27,432	0.71
Central	Cincinnati	$34,406	$56,419	0.61
Central	Louisville	$26,851	$42,365	0.63
Central	Minneapolis	$8,429	$12,077	0.70
Sum		$112,538	$171,028	4.86

The table below shows how the 'Weighted Profits / Sales' aggregated value is calculated for the different radio button options on the "Options dialog: Aggregation tab".

Check box selected	What value is displayed
Show <*Non-aggregable label*>, the "values that cannot be aggregated" option, set on the Sheet Format tab	<N.A>
Show the sum of the values displayed in the contributing cells	4.86 (as in example above)

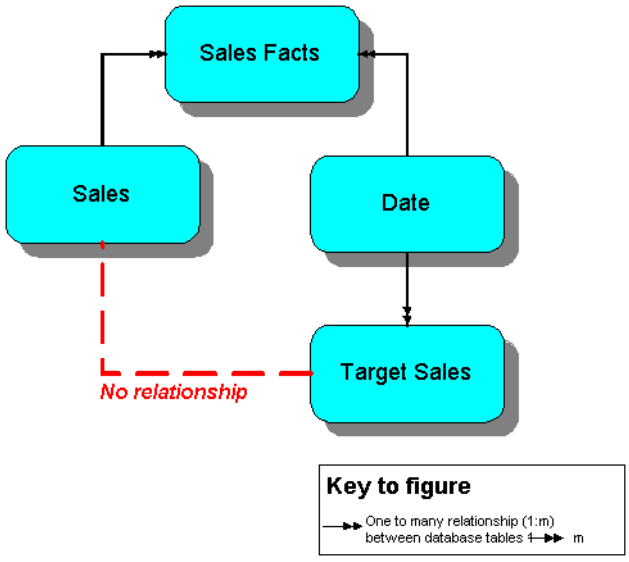
Example 4: Example showing how Discoverer does not aggregate repeated values using an Oracle9*i* database

This example (using an Oracle9*i* database) shows how Discoverer does not aggregate repeated values, whichever aggregation option you choose on the "Options dialog: Aggregation tab".

In this example, a worksheet displays sales values (i.e. the Sales SUM item) for regions for each year. The worksheet also displays the target sales value set by the company (i.e. the Target Sales SUM item) for each region. Each region has the same target sales value.

You create a Discoverer total to calculate total values for each year.

It is not meaningful to aggregate Target Sales Sum values at the Year level because there is no logical relationship between the Sales item and the Target Sales item. If you are familiar with entity-relationship diagrams, the figure below shows that this is because the Sales SUM item is dimensioned by store (i.e. in the Sales Facts table) but the Target Sales Sum item is dimensioned by date (i.e. in the Date table).



Therefore, you want Discoverer to display a non-aggregable label (e.g. N.A.) for the yearly total values for the Target Sales Sum item. The worksheet below shows how Discoverer displays a non-aggregable label (i.e. N.A.) for the yearly totals for the Target Sales Sum item (regardless of which aggregation option you choose on the "Options dialog: Aggregation tab").

Year	Region	Sales SUM	Target Sales SUM
1998	East	$368,346.57	$839,865.00
	West	$183,260.34	$839,865.00
	Central	$230,418.30	$839,865.00
Sum		$782,025.21	N.A.
1999	East	$401,982.56	$981,252.00
	West	$216,173.79	$981,252.00
	Central	$259,437.46	$981,252.00
Sum		$877,593.81	N.A.
2000	East	$273,651.37	$508,836.00
	West	$130,981.85	$508,836.00
	Central	$171,027.88	$508,836.00
Sum		$575,661.10	N.A.

The table below shows how Discoverer the Target Sales Sum aggregates are calculated for the different radio button options on the "Options dialog: Aggregation tab".

Check box selected	What value is displayed
(Oracle9i database only) Show the aggregated value calculated by the database. The database uses the same aggregation method as Discoverer	<N.A.>
Show <*Non-aggregable label*>, the "values that cannot be aggregated" option, set on the Sheet Format tab	<N.A.>
Show the sum of the values displayed in the contributing cells	<N.A.>

Notes on sharing worksheets between Discoverer Desktop and Discoverer Plus/Viewer users

This section explains how Discoverer computes aggregated values if you share Discoverer worksheets with other Discoverer Desktop or Discoverer Plus/Viewer users.

Note: If a potential fan trap situation exists, make sure that Discoverer users specify the same fan trap settings (for more information, see "About fan traps").

About sharing a Discoverer worksheet between Discoverer Plus users

To make sure that a Discoverer worksheet contain the same aggregated values regardless of which Discoverer Plus user opens it, do one or both of the following:

- explicitly set the aggregation option on the Aggregation tab (i.e. clear the **Use the aggregation behavior selected by the Discoverer manager** check box and select one of the radio button options)
- make sure that the Discoverer manager has specified the same default Aggregation option (i.e. the EnhancedAggregationStrategy preference) on all Discoverer middle-tier machines being used

About sharing a Discoverer worksheet between Discoverer Plus and Discoverer Desktop users

If you want to share a Discoverer worksheet between Discoverer Plus and Discoverer Desktop, note the following:

- if a worksheet created in Discoverer Plus against an Oracle8*i* database is opened in Discoverer Desktop, Discoverer Desktop displays the same aggregated values

- if a worksheet created in Discoverer Plus (and the **Show the aggregated value calculated by the database. The database uses the same aggregation method as Discoverer** option is selected**)** against an Oracle9*i* database is opened in Discoverer Desktop, Discoverer Desktop displays the non-aggregable label by default
- if a worksheet created in Discoverer Desktop is opened in Discoverer Plus, Discoverer Plus uses the same aggregation behavior as specified in Discoverer Desktop

Options dialog: Default Formats tab

Use this tab to change the default worksheet style that Discoverer uses for new worksheets. For example, you might want new worksheets or worksheet items to have blue headings and green text.

For more information, see:

"About editing worksheets"

Default formats

Use this list to choose what item area you want to change. To select an area, either double-click an option or select an option and click Change, as follows:

- To change how worksheet items are displayed, select Data Format and click Change to display the "Data Format dialog".
- To change how worksheet item headings are displayed, select Heading Format and click Change to display the "Heading Format dialog".
- To display how worksheet totals are displayed, select Total Format and click Change to display the "Total Format dialog".

Example

This areas shows you how the item will look on the worksheet, according to changes that you make.

Change

Use this button to display the Format dialog. Here, you choose formatting options for the currently selected area (Data Format, Heading Format, or Total Format).

Reset

Use this button to cancel any changes you have made and revert to the original default settings.

Notes

- Changing the default style does not affect existing worksheets.
- Changing the default style does affect new items on existing worksheets.

Options dialog: EUL tab

Use this tab to select a default End User Layer (EUL) to connect to when you start Discoverer. For example, the Discoverer manager have given you access to more than one EUL, to enable you to access a wide range of workbooks. If so, you can choose a default EUL here.

Contact the Discoverer manager for more information about which EULs you can access.

For more information, see:

"About default settings"

Select a default EUL

Use this drop down list to choose an EUL that you want to connect to by default.

- If you only have access to one EUL, this is a read-only field that shows you which EUL you are connected to.
- If you have access to more than one EUL, you can choose which one you want to use by default.

Options dialog: General tab

Use this tab to configure how Discoverer displays worksheets. For example, you might want Discoverer to ask worksheet users to confirm whether they want a query to be run.

For more information, see:

"What are worksheets, workbooks, and queries?"

"What are scheduled workbooks?"

"About scheduled workbooks"

Workbooks

After running a workbook

Use these radio buttons to specify how you want Discoverer to display worksheets.

- **Run query automatically**

  Use this radio button when you want Discoverer to always display up-to-date data in the worksheet.

- **Don’t run query**

  Use this radio button when you want the Discoverer user to decide when to refresh a worksheet. When a worksheet is first opened, it will be empty. Use this option when you want to work on the worksheet without looking at the data. For example, some worksheets users might want to set filtering conditions before opening a large worksheet, or change the layout of a worksheet before analyzing the data.

- **Ask for confirmation**

  Use this radio button when you want workbook users to confirm before worksheets are refreshed with up-to-date data. For example, some worksheets users might want to set filtering conditions before opening a large worksheet.

Scheduled Workbooks

Don’t show the new results window after connecting to database

Use this check box when you do not want to be informed about new scheduled workbook results that are available. The "New Scheduled Workbook Results dialog" will not be displayed when you start Discoverer.

Don’t show expired results on exit; delete results automatically

Use this check box when you do not want to be informed about expired scheduled workbook results and asked whether you want to delete them. The "Delete Scheduled Workbook Results dialog" will not be displayed when you close Discoverer.

Wizards

Show wizard graphics

Use this check box to display or hide graphics on wizard dialogs. Graphics are used as visual aids to choosing options. For example, when choosing between a table and crosstab format, the graphic shows how the data is arranged on the worksheet.

When workbook users are experienced Discoverer users, you might want to improve Discoverer performance by not displaying wizard graphics.

Options dialog: Sheet Format tabs

Use these tabs to control how Discoverer displays worksheets.

For more information, see:

"Options dialog: Sheet Format tab (on a crosstab worksheet)"

"Options dialog: Sheet Format tab (on a table worksheet)"

Options dialog: Query Governor tab

Use this tab to specify how Discoverer uses summaries and performs queries.

Note: Do not change these options unless advised to do so by the Discoverer manager.

For more information, see:

"What are summaries?"

"What are worksheets, workbooks, and queries?"

Summary Data

When do you want to use Summary data?

Use this drop down list to specify when you want Discoverer to use summaries. The table below describes options available.

Option	Use to
Always, when available	Specify that you want Discoverer to use summaries automatically where possible.
Only when summary data is not out of date (stale)	Specify that you want Discoverer to use summaries when up-to-date data is available.
Never	Specify that you do not want Discoverer to use summaries.

Query Governor

Use these radio buttons to specify how Discoverer handles queries.

- **Warn me if predicted time exceeds**

  Use this check box to display a warning when the predicted query times exceed the time that you define in the box on the right. The estimated query time is displayed so that you can choose whether to continue. If the wait time is too long, you can schedule the workbook to run at a later time. For example, you might want to schedule the workbook to run overnight so that it is ready to open in the morning.

- **Prevent queries from running greater than**

  Use this check box if you do not want to run queries when the predicted query time exceeds the time that you define in the box on the right.

- **Limit retrieved query data to**

  Use this check box to not retrieve more than the number of rows that you define in the box on the right.

- **Retrieve data incrementally in groups of**

  Use this field to define how many rows to retrieve from the database at once.

- **Cancel list of values retrieval after**

  Use this field to define the maximum time you want to wait while Discoverer retrieves list of values items.

Notes

- If you change the Query Governor settings on this tab, note the following:
  - If you set the number of **Rows per screen page** value (on the Sheet Format tab) to be greater than the **Retrieve data incrementally in groups of** value, Discoverer completes enough fetches from the database to fill the page.
  - These settings also depend on the **Limit retrieved query data to** value being high enough to satisfy the number of **Rows per screen page** setting.
  - If the **Retrieve data incrementally in groups of** value is greater than or equal to the **Limit retrieved query data to** value, only one retrieval increment is fetched from the database.

Options dialog: Sheet Format tab (on a crosstab worksheet)

Use this tab to configure the way that the current worksheet is displayed. Use this dialog to:

- Display or hide the worksheet title or gridlines
- Display or hide row numbers
- Define the number of rows displayed on each page of the worksheet

For more information, see:

"What are worksheets?"

Show

Title

Use this check box to display or hide the worksheet title. The title, if one has been defined, appears at the top of the worksheet.

Horizontal and vertical cell gridlines

Use this check box to display or hide gridlines on the worksheet.

Null values as

Use this drop down list to specify how Discoverer displays null (or empty) values.

Values that cannot be aggregated as

Use this drop down list to specify how Discoverer displays values that cannot be aggregated (typically values that are already aggregates)

Style

Use these radio buttons to configure the side (left) axis on a crosstab.

Inline

Use this check box to display the first row of a group on the same row as the parent row. For example, on a worksheet with Years and Months, January appears on the same line as the 2001.

Outline

Use this check box to display the first row of a group one row below the row showing the parent row. For example, on a worksheet with Years and Months, January appears on the row below 2001.

Screen page layout

Rows per screen page

Use this field to specify how many rows are displayed on a worksheet at one time. To change the default number, enter a new number or use the up and down arrows to increase or decrease the number.

Example

This areas shows you how the worksheet will look, according to configuration options you set.

Options dialog: Sheet Format tab (on a table worksheet)

Use this tab to configure the way that the current worksheet is displayed. Use this dialog to:

- Display or hide the worksheet title or gridlines
- Display or hide row numbers
- Define the number of rows displayed on each page of the worksheet

For more information, see:

"What are worksheets?"

Show

Title

Use this check box to display or hide the worksheet title. The title appears at the top of the worksheet.

Horizontal and vertical cell gridlines

Use this check box to display or hide gridlines on the worksheet.

Null values as

Use this drop down list to specify how Discoverer displays null (or empty) values.

Values that cannot be aggregated as

Use this drop down list to specify how Discoverer displays values that cannot be aggregated (typically values that are already aggregates).

Style

Row numbers

Use this check box to display or hide row numbers on worksheets.

Screen page layout

Rows per screen page

Use this field to specify how many rows are displayed on a worksheet at one time. To change the default number, enter a new number or use the up and down arrows to increase or decrease the number.

Example

This areas shows you how the worksheet will look, according to configuration options you set.

Percent Contribution dialog

Use this dialog to create a percent contribution calculation. A percent contribution calculation calculates how much each value contributes to the sum of a set of values, and expresses the ratio as a percentage. For example, you might want to know how each store in a group of stores contributes to annual profits.

This type of analysis is sometimes referred to as reporting analysis.

For more information, see:

"What are analytic functions?"

"How to create a new calculation using an analytic function template"

"Reporting function examples"

Percent contribution on

Use this drop down list to choose the item for which you want to calculate the percent contribution. For example, you might choose Sales SUM to calculate a percent contribution of sales values.

Restart percent contribution at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, if you have Sales SUM values for each store and you want to calculate the percentage contribution for each store in relation to annual profits, you might choose Calendar Year.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

Notes

- Discoverer uses an underlying RATIO_TO_REPORT() function for this calculation.

- For more information about calculating how running totals contribute to their group's total, see "Percent Running Contribution dialog".

Percent Difference dialog

Use this dialog to create a percent difference calculation. A percent difference calculation typically calculates the difference between an initial value and a subsequent value, and expresses the result as a percentage. For example, you might want to calculate the difference between sales in one month and sales in another month expressed as a percentage.

This type of analysis is sometimes referred to as LAG/LEAD analysis.

Note: To calculate just difference between an initial value and a subsequent value, use the Difference calculation (for more information, see "Difference dialog").

For more information, see:

"What are analytic functions?"

"Examples of using row-based and time-based intervals"

"How to create a new calculation using an analytic function template"

"LAG/LEAD function examples"

Compare values of

Use this drop down list to choose the item for which you want to calculate the percentage difference. For example, you might choose Sales SUM to calculate the change in sales values over time.

Preceding value

Use this drop down list to specify the number of rows or the number of time periods in which you want to compare the values. For example, you might choose 3 to calculate the difference in sales compared to three months previously.

Use the adjacent drop down list to choose a row-based interval or a time-based interval. For example, you might choose Months Before Current Value to compare sales values with earlier sales values.

Hint: If you have time-based data, use time-based groups (e.g. Days/Weeks/Months Before Current Value). If you do not have time-based data, use row-based groups (e.g. Rows Before Current Value). For more information about types of group, see "About windowing".

For examples of specifying row-based and time-based intervals, see "Examples of using row-based and time-based intervals".

Order rows by

Use this drop down list to specify how to order the worksheet values. For example, you might choose Calendar Month to compare sales in one month with sales in other months.

Use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Then order rows by

Use this drop down list to specify a secondary order for the values. For example, you might choose City to sort values on city within month.

Use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Restart calculation at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, to calculate the difference in Sales SUM values within year, you might choose Calendar Year.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

Notes

- A percent difference calculation will return a null value if there is no preceding value with which to compare.

Percent Rank dialog

Use this dialog to create a percent rank calculation. A percent rank calculation calculates the relative position of a value in a group of values, and expresses the result as a percentage. For example, you might want to find out which products are in the top 25% and top 50% of best selling products. In other words, if you calculate the percent rank for sales totals for 15 stores (highest value ranked 1):

- the store ranked 4th has the percent rank value of 25%
- the store ranked 8th has the percent rank value of 50%.

You can therefore find the top 25% and 50% of the best performing stores.

Note: Percent Rank analysis is similar to cumulative distribution.

For more information, see:

"What are analytic functions?"

"How to create a new calculation using an analytic function template"

"Ranking function examples"

Rank based on

Use this drop down list to choose the item for which you want to calculate the percentage rank. For example, to calculate the percent rank of stores, you might choose Sales SUM.

Use the adjacent drop down list to specify the ranking order. For example, you might choose Highest Value Ranked 1 if you want stores with the highest sales to have the highest league table positions. In other words:

- if you choose Highest Value Ranked 1, the highest ranked item has the percent rank value of 0%
- if you choose Highest Value Ranked 1, the lowest ranked item has the percent rank value of 100%

Then rank based on

Use this drop down list to choose an item that is used to determine the rank of values if they have tied ranks (i.e. the same rank in the **Rank based on** field).

For example, to find stores with the highest sales and lowest costs you might choose the following:

- Sales SUM and Highest Value Ranked 1 in the **Rank based on** field

- Costs SUM and Lowest Value Ranked 1 in the **Then rank based on** field

In other words, if you have two stores with the same Sales SUM value, you might determine the rank by looking at the Costs SUM value to see which store has the lowest costs.

Restart ranking at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, to calculate a percent rank of Sales SUM values within year, you might choose Calendar Year. In other words, if Sales SUM values span two years you will have a best performing store for each year.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

Notes

- To calculate just the league table position of items, see "Rank dialog".
- You can find the median value in a set of values by looking at the value with 50% (or nearest 50%) as the percent rank value.
- Discoverer uses an underlying PERCENT_RANK() function for this calculation.
- Percent rank is calculated as the rank of each row minus 1, divided by 1 less than the number of rows being evaluated (the entire query result set or a partition). The range of values returned is 0 to 1, inclusive. The first row in any set has a PERCENT_RANK value of 0.

  For example, a value ranked 3 in a group of 5 values has the percent rank of 0.5 (i.e. 3 minus 1 divided by 5 minus 1, or 2 divided by 4, which gives 0.5 or 50%).

Percent Running Contribution dialog

Use this dialog to create a percent running contribution calculation. A percent running contribution calculation can be used for Pareto analysis (sometimes referred to as 80-20 analysis). Pareto analysis calculates how the running total contributes to a group, and expresses the result as a percentage. For example, you might want to know how the top five stores contribute as a percentage of annual sales.

This type of analysis is sometimes referred to as reporting analysis.

For more information, see:

"What are analytic functions?"

"How to create a new calculation using an analytic function template"

"Reporting function examples"

Percent running contribution on

Use this drop down list to choose the item for which you want to calculate the running total. For example, you might choose Sales SUM to calculate a percent running total of sales values.

Order rows by

Use this drop down list to specify how to order the values. You typically order by the item specified in the **Percent running contribution on** drop down list, or a time period item.

Use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Then order rows by

Use this drop down list to specify a secondary order for the values. For example, you might choose City to sort values on city within month.

Use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Restart percent running contribution at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, to calculate the percent running contribution of each store in relation to all stores for each year, you might choose Calendar Year.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

Preceding Value dialog

Use this dialog to create a preceding value calculation. A preceding value calculation returns the value that is a specified number of rows or a specified time period before each value. For example, you might want to know what the previous month's sales are for each value.

You typically create preceding calculations for use in other calculations. For example, you might use the preceding month's sales values to calculate the change in sales from the previous month.

This type of analysis is sometimes referred to as LAG/LEAD analysis.

Note: To return a following value rather than a preceding value, use the Following Value dialog (see "Following Value dialog").

For more information, see:

"What are analytic functions?"

"Examples of using row-based and time-based intervals"

"How to create a new calculation using an analytic function template"

"LAG/LEAD function examples"

Preceding value of

Use this drop down list to choose the item for which you want to return the preceding value. For example, you might choose Sales SUM to calculate a previous sales value.

Return value

Use this drop down list to specify the number of rows or the number of time periods in which you want to compare the values. For example, you might choose '3' to compare sales values with earlier sales values.

Use the adjacent drop down list to choose a row-based interval or a time-based interval. For example, you might choose Months Preceding Current Value to compare sales values with earlier sales values.

Hint: If you have time-based data, use time-based groups (e.g. Days/Weeks/Months Before Current Value). If you do not have time-based data, use row-based groups (e.g. Rows Before Current Value). For more information about types of group, see "About windowing".

For examples of specifying row-based and time-based intervals, see "Examples of using row-based and time-based intervals".

Order rows by

Use this drop down list to specify how to order the worksheet values. For example, you might choose Calendar Month to compare sales with the previous month's sales.

Use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Hint: If you have specified a time-based group in the **Return value** fields, specify a time-based value in the **Order rows by** fields (e.g. Calendar Month).

Then order rows by

Use this drop down list to specify a secondary order for the values. For example, you might choose 'City' to sort values on city within month.

Use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Restart calculation at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, to calculate the preceding value of sales values of months within each year, you might choose Calendar Year.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

Notes

- A preceding value calculation will return a null value if there is no preceding value.

Print Wizard dialog: Define Graph tab

Use this dialog to specify how to print graph data. For example, you might want to change the graph size, ratio, or the size of the label font.

For more information, see:

"About the Print Wizard"

How do you want the graph to fit the paper?

Use these radio buttons to choose height and width ratios, and the font size, as follows:

- **Preserve the ratio of height and width**

  Use this radio button when you want to maintain the ratio of the graph. That is, the graph height and width remain of the same proportions.

- **Preserve the actual font size**

  Use this radio button when you want to print the graph text in the same font size as that used on the worksheet.

What else do you want to print with the graph?

Use these radio buttons to specify what information you want to print, as follows:

- **Print worksheet title with the graph**

  Use this option to print the worksheet title as it appears on the graph.

- **Print page item values with the graph**

  Use this item to print page item values with the graph. For example, if the page item is Department, print the name of the department that the graph relates to.

Print Wizard dialog: Select Objects tab

Use this dialog to specify what data you want to print. For example, you might want to print the current worksheet or all worksheets, or print graph data with worksheets.

For more information, see:

"About the Print Wizard"

Which worksheets do you want to print?

Use these radio buttons to choose which worksheets to print, as follows:

- **Current worksheet**

  Use this radio button to print the worksheet that you currently have open.

- **All worksheets**

  Use this radio button when you want to print all worksheets in the workbook.

What do you want to print?

Use these radio buttons to choose what data to print, as follows:

- **Both Graph and Table/Crosstab**

  Use this radio button to print worksheets with their accompanying graphs.

- **Table/Crosstab only**

  Use this radio button to print worksheets but not their accompanying graphs.

- **Graph only**

  Use this radio button to print the graph(s) only.

Print Wizard dialog: Edit Parameter Values tab

Use this dialog to limit the data that you print. You do this by entering parameter values, which act like conditions by filtering the data in the workbook or worksheet. Only data matching the criteria that you define is printed. For example, you might only want to print data where the year equals '2001'.

For more information, see:

"What are parameters?"?

Please select values for the following parameters:

This area contains one or more fields into which you enter a value on which to filter data. Each field has a prompt, which should be an instruction or question telling you what value to enter. For example, if the prompt is 'Please choose a month', enter 'January' to see data for that month.

Print Wizard dialog: Supervise tab

Use this dialog to choose whether to monitor the print process whilst it is in progress. For example, if the worksheet uses large queries, you might want to respond to warnings about how long queries will take.

For more information, see:

"About the Print Wizard"

Do you want to supervise the print process?

Use these radio buttons to specify how you want to manage the print process, as follows:

- **Supervised**

  Use this radio button when you think that printing the report might take a long time or produce more than the allowed amount of data. You can then respond to warnings during the process.

- **Unsupervised**

  Use this radio button when you want to print the report regardless of possible warnings about how long it will take or how much data will be produced.

Note: For more information about how to manage queries that run during printing, see "Options dialog: Query Governor tab".

Rank dialog

Use this dialog to create a rank calculation. A rank calculation calculates the league table position of values. For example, you might want to know what are the top ten highest performing stores based on sales.

Hint: If you want to perform top-n analysis, apply a condition to the worksheet to limit the data by rank. For example, you might use a condition where Rank is less than or equal to ten to find the top ten values.

For more information, see:

"What are analytic functions?"

"How to create a new calculation using an analytic function template"

"Ranking function examples"

Rank based on

Use this drop down list to choose the item for which you want to calculate the rank. For example, to calculate the relative position of stores based on sales, you might choose Sales SUM.

Use the adjacent drop down list to specify the ranking order. For example, you might choose Highest Value Ranked 1 if you want stores with the higher sales to have the higher rank.

Then rank based on

Use this drop down list to choose an item that is used to determine the rank of values if they have tied ranks (i.e. the same rank in the **Rank based on** field).

For example, to find stores with the highest sales and lowest costs you might choose the following:

- Sales SUM and Highest Value Ranked 1 in the **Rank based on** field
- Costs SUM and Lowest Value Ranked 1 in the **Then rank based on** field

In other words, if you have two stores with the same Sales SUM value, you might determine the rank by looking at the Costs SUM value to see which store has the lowest costs.

Restart ranking at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, to calculate a rank of Sales SUM values within year, you might choose Calendar Year. In other words, if Sales SUM values span two years you will have a best performing store for each year.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Rank Ties

Use these radio buttons to specify how you want to calculate the rank of a value following two or more identical values (known as ties).

- Normal - use non-consecutive ranking numbers when values are equal. For example, if the top five values are equal, assign the rank 1 to each value, and assign the rank 6 to the next ranked value.
- Dense - use consecutive ranking numbers when values are equal. For example, if the top five values are equal, assign the rank 1 to each value, and assign the rank 2 to the next ranked value.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

Reference Lines dialog

Use this dialog to specify reference lines for a graph. A reference line is a fixed line against which graphed values can be compared. For example, you might add a reference line to represent a sales target, to emphasize which regions achieved the sales target.

For more information, see:

"About components of a Discoverer graph"

Show

Use this field to specify whether reference lines appear in the graph.

Color

Use this field to specify the color of the reference lines.

Thickness

Use this field to specify the thickness (or weight) of the reference line.

Label

Use this field to specify a label for the reference line. Click in the box and type a label. The label is displayed in the graph legend.

Cross at

Use this field to specify the value along the axis at which the reference line is displayed. For example, to represent a sales target of $100,000, you might enter 100,000. Or, on a percentage axis, enter 40 to add a reference line at 40%.

Rename Worksheet dialog

Use this dialog to make worksheet names more meaningful by changing the default names assigned by Discoverer, or names created by other Discoverer users.

When you create worksheets, Discoverer automatically assigns a default name, Sheet1, Sheet2, Sheet3 and so on. Change these names to make the worksheet more usable for other Discoverer users.

For more information, see:

"What are worksheets?"

New name

Use this field to enter a new name for the worksheet. The existing name appears in the field by default. Type a new name then press enter or click **OK**.

Running Total dialog

Use this dialog to create a running total calculation. A running total calculation calculates the total starting with the first value in the group, adding each previous total value to the next value in the group. For example, you might want to calculate a cumulative total of sales figures.

This type of analysis is sometimes referred to as windowing.

For more information, see:

"What are analytic functions?"

"How to create a new calculation using an analytic function template"

Running total on

Use this drop down list to choose the item for which you want to calculate the running total. For example, you might choose Sales SUM to calculate a running total of sales values.

Order rows by

Use this drop down list to specify how to order the values. For example, you might choose Calendar Month if you want running total across months.

Use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Then order rows by

Use this drop down list to specify a secondary order for the values. For example, you might choose Calendar Month from the **Order rows by** list and City from the **Then order rows by** list to sort values on city within month.

Use the adjacent drop down list to specify whether to order values in ascending order (i.e. Lowest to Highest) or descending order (i.e. Highest to Lowest).

Restart running total at each change in

Use this list to specify which groups to use if you want to arrange results into groups (sometimes referred to as partitions).

For example, to calculate a running total for Sales SUM values within year, you might choose Calendar Year here. In other words, if you have Sales SUM values spanning two years, you will have a running total for each year.

If you do not specify a group, Discoverer treats all worksheet values as a single group.

Calculation

This read-only field displays the underlying formula that you are building as you specify values for the fields above. This formula is updated each time you change one of the values in the fields above. When you click OK, the formula is transferred to the **Calculation** field in the "New Calculation dialog" or the "Edit Calculation dialog".

Save Workbook to Database dialog

Use this dialog to save the current workbook under a new name in the database. For example, you might want to make a backup copy of the current workbook.

For more information, see:

"About saving workbooks to the database"

New name

Use this field to enter a new name for the workbook.

Notes

- You can enter a name in the **New name** field that:
  - has an maximum length of approximately 45 characters (depending on the language in which you are running Discoverer).
  - includes upper or lower case characters, and spaces. For example 'Jchan Sales Workbook March 2002'.
- If two users open the same workbook and try to save the workbook at the same time, Discoverer saves the changes made by the user that saves the workbook first. Discoverer displays the message "End User Layer transaction found - Object changed in the database" to the second workbook user. The second user is forced to use the Save as option with a different workbook name. Alternatively, the second user can re-open the workbook and save the workbook.
- Shared workbook names are prefixed with the name of the workbook owner.

Schedule Wizard dialog

Use this dialog to create new scheduled workbooks. For example, you might want to schedule a weekly report.

For more information, see:

"Schedule Wizard dialog: General tab"

"Schedule Wizard dialog: Parameter Values tab"

"Schedule Wizard dialog: Schedule tab"

Scheduling Manager dialog

Use this dialog to manage scheduled workbooks. For example, to create a new scheduled workbook, or change the time or frequency of an existing scheduled workbook.

For more information, see:

"What are scheduled workbooks?"

"When do I need to use scheduled workbooks?"

"About how scheduled workbooks are processed?"

Scheduled Workbooks:

Use this list to look at what workbooks are currently scheduled and find out whether the scheduled workbooks results sets are ready to open, as follows:

- use the plus symbol (+) next to each workbook to expand the list to display results for that workbook
- use the minus symbol (-) next to expanded workbooks to collapse the list

Hint: If a results set has 'Report Ready' in the **Status** field, the report has been processed and is ready to open. To open a report, double click a report or select a report and click Open.

Open

Use this button to open the currently selected scheduled workbook in Discoverer. You can then analyze the worksheet data, print reports, and share the data with other Discoverer users.

Edit

Use this button to display the "Edit Scheduled Workbook dialog", where you change how the workbook is configured.

Copy

Use this button to make a copy of the selected scheduled workbook that you can edit to create a new scheduled workbook. This provides a quick way to create a scheduled workbook when a similar scheduled workbook already exists.

Delete

Use this button to remove the currently selected results permanently. Choose one from the following:

- delete the selected results for that workbook but keep the scheduled workbook - Discoverer will continue to generate results according to the schedule (e.g. once per week)
- delete all results for that workbook and stop the scheduled workbook - Discoverer will stop generating results

Note: You can also stop a scheduled workbook from being processed using the Unschedule option.

View Error

Use this button to find out why a scheduled workbook failed. The Error Details dialog displays the error message generated when the scheduled workbook failed.

Unschedule

Use this button to stop the currently selected scheduled workbook from being processed. Discoverer displays a confirm dialog. Choose one from the following:

- Unschedule the workbook but keep all results - use this option when you want to continue to use results generated by the scheduled workbook
- Unschedule the workbook and delete all results - use this option when you want to remove results generated by the scheduled workbook

Schedule

Use this button to display the "Schedule Wizard dialog: General tab", where you create scheduled workbooks.

Refresh

Use this button to update the scheduled workbook list with up-to-date information.

Schedule Wizard dialog: General tab

Use this dialog to specify a name and description for a scheduled workbook, and specify which worksheets are included for processing. For example, you might want to schedule only one worksheet in a workbook.

For more information, see:

"What are scheduled workbooks?"

"When do I need to use scheduled workbooks?"

"About how scheduled workbooks are processed?"

What do you want to name this scheduled workbook?

Use this field to enter a short descriptive name for the scheduled workbook. This name will be used by users to identify the workbook in Discoverer.

What description do you want for this scheduled workbook?

Use this field to enter additional information about the workbook. This information is used by workbook users when they choose which workbooks to open.

Which worksheet(s) do you want to include in this scheduled workbook?

Use this list to specify which worksheets you want to include in the scheduled workbook.

To include a worksheet, select the check box next to the worksheet.

Select All

Use this button to include every worksheet in the scheduled workbook.

Select None

Use this button to deselect every worksheet in the scheduled workbook.

Hint: Do this before you selectively include worksheets using the check box next to each item.

Schedule Wizard dialog: Parameter Values tab

Use this dialog to change parameter values required by worksheets. For example, you might enter 'January' when you want to specify that the scheduled workbook contains only data for the month of January.

For more information, see:

"What are scheduled workbooks?"

"When do I need to use scheduled workbooks?"

"About how scheduled workbooks are processed?"

"What are parameters?"

"About using parameters"

Parameter list

This area contains one or more fields into which you enter parameter values. Each field has a prompt (typically an instruction or question) telling you what value to enter. For example, if the prompt is 'Please choose a month', enter 'January' to specify a month to analyze.

Use the down arrow next to each item to select from a list of valid values.

If the list of values in the drop down list is too long to display on screen, the "Select Value dialog" or "Select Values dialog" is displayed. These dialogs enable you to search for and select the values that you want to use. For more information, see "Using lists of values (LOVs)".

Schedule Wizard dialog: Schedule tab

Use this dialog to specify when you want the scheduled workbook to be processed. For example, you might want to process a workbook at 1.00 a.m. when the network has spare capacity.

For more information, see:

"What are scheduled workbooks?"

"When do I need to use scheduled workbooks?"

"About how scheduled workbooks are processed?"

When do you want to schedule this workbook?

Use these fields to specify when you want Discoverer to process the scheduled workbook.

How often do you want to schedule this workbook?

Use these fields to specify how often Discoverer processes the scheduled workbook.

- **Never**

  Use this radio button when you want Discoverer to process a scheduled workbook on demand rather than at regular intervals. For example, for an occasional report requested by your manager.

- **Repeat every**

  Use these fields when you want Discoverer to process a scheduled workbook regularly. Use the first field to specify a number, and the second field to specify an interval. For example, choose '1' and 'Week' to process a scheduled workbook once every week at the time and date specified by **When do you want to schedule this workbook?**.

Do you want to keep all versions of results?

Use these fields to specify whether to store scheduled workbook results or over-write the previous set of results each time. If a report is processed frequently, using this option might require a large amount of database space - contact the Discoverer manager for more details.

- **Yes, keep all results**

Use this radio button when you want Discoverer to store the results each time a scheduled workbook is processed. Use this option when you want to store historical data.

- **No, just keep the latest set of results**

  Use this radio button when you want Discoverer to store only the latest set of scheduled workbook results. Use this option when you do not want to store historical data.

How long do you want to keep the results?

Delete results after _ days

Use this field to specify how long you store the latest set of scheduled workbook results. For example, if you process a weekly report, you might delete the results after seven days to minimize the amount of database space used.

Select Condition dialog

Use this dialog to add an existing condition to a new condition. For example, you might want to use an existing condition to build a new complex condition.

For more information, see:

"What are conditions?"

Select a condition

Use this list to select which existing condition you want to add to the new condition. A new condition statement line is added to the condition Formula area on the "New Condition dialog" or "Edit Condition dialog" dialog.

Select Item dialog

Use this dialog to select which item you want to match against when defining a condition or a parameter, as follows.

- If you are creating a condition, you might have two items and want to display data where values in the first item match values in the second item. In other words, display data where values exist on both item one and item two. For example, if you had a condition statement:

  Data.Month = Analysis.Month

  you display data where January exists in both items Data.Month and Analysis.Month.

- If you are creating a parameter, this dialog displays all items available to the worksheet, not just items that are currently displayed. For example, although you do not display year information on a worksheet, you might want users to be able to specify which year's data they want to analyze.

Select an item

Use this list to select which item you want to match against. For example, if you are creating a parameter to enable worksheet users to choose which year's data they want to analyze, you might choose Video Analysis Information.Calendar Year.

Select item to drill dialog

Use this dialog to select which item you want to use to drill into or out of a worksheet.

Note: This dialog is displayed when there are too many items to display in a drop down list.

For more information, see:

"About drilling in Discoverer worksheets"

Select one of the following items to drill

Use this list to select the item on which you want to drill. For example, you might choose Calendar Month to display worksheet data for individual months.

Select Parameter dialog

Use this dialog when you select an item in the Item field that has a parameter created against it, and you want to match the selected item against a dynamic value entered as a parameter.

For example, you have a parameter called 'Increase amount' that is set to 1000. The 'Increase amount' parameter value entered is used to calculate a stock increase amount. You might also want to restrict the worksheet to items where the quantity is greater than the value of the 'Increase amount' parameter (i.e. 1000 in this example).

For more information, see:

"What are parameters?"

Select a parameter

Use this list to select which parameter value you want to match against the selected item.

Select Value dialog

Use this dialog to search LOV values and select the value that you want. For example, when you choose a parameter value or condition item that has a long list of values, you might want to search for values that begin with the letter 'C', and then select 'CPM'.

For more information, see:

"Using lists of values (LOVs)"

Search by

Use this drop down list to specify how you want to match values. For example, choose Starts With and enter 'T' as a Search for value to list only items beginning with the letter 'T'.

Search for

Use this field to enter the text that you want to match against. For example, enter 'T' here and choose Starts With in the Search by drop down list to list only items beginning the letter 'T'.

Go

Use this button to start the search according to the search criteria that you have specified and display matching values in the Displayed values list below. If you click Go when the Search for field is empty, the first group of values in the LOV is displayed.

Case-sensitive

Use this check box to match upper and lower case letters exactly when searching text data.

- if selected, the value 'OPM' will not find 'opm' or 'Opm'
- if not selected, the value 'OPM' will find 'opm' and 'Opm'

Displayed values

This list displays values that match the search criteria that you have specified, or values displayed by default when the dialog is first displayed.

Previous

Use this button to display the previous set of values.

Next

Use this button to display the next set of values.

Notes

- The number of values retrieved at a time is specified by the Discoverer manager.

Select Values dialog

Use this dialog to search LOV values and select the values that you want. For example, when you choose a parameter value or condition item that has a long list of values, you might want to search for values that begin with the letter 'C', and then select 'CPM' and 'CPN' and 'CPO'.

For more information, see:

"Using lists of values (LOVs)"

Search by

Use this drop down list to specify how you want to match values. For example, choose Starts With and enter 'T' as a Search for value to list only items beginning with the letter 'T'.

Search for

Use this field to enter the text that you want to match against. For example, enter 'T' here and choose Starts With in the Search by drop down list to list only items beginning the letter 'T'.

Go

Use this button to start the search according to the search criteria that you have specified and display matching values in the Displayed values list below. If you click Go when the Search for field is empty, the first group of values in the LOV is displayed.

Case-sensitive

Use this check box to match upper and lower case letters exactly when searching text data as follows:

- if selected, the value 'OPM' will not find 'opm' or 'Opm'
- if not selected, the value 'OPM' will find 'opm' and 'Opm'

Displayed values

This list displays values that match the search criteria that you have specified, or values displayed by default when the dialog is first displayed. Use this list to choose values that you want to select. To choose values, move values from the **Displayed values** list to the **Selected values** list.

Note: You can select more than one value by pressing the Ctrl key and clicking another value.

Selected values

Use this list to see which values are currently selected. To deselect values, move values from the **Selected values** list to the **Displayed values** list.

Previous

Use this button to display the previous set of values.

Next

Use this button to display the next set of values.

Notes

- The Discoverer manager specifies how many values are retrieved at a time.

Select Workbook from Database dialog (to schedule)

Use this dialog to choose which workbook you want to schedule. For example, you might have saved a Discoverer workbook previously and want to use the workbook to schedule a weekly report.

For more information, see:

"What are workbooks?"

Choose a workbook to schedule

Use this list to specify which workbook you want to schedule. To choose a workbook, either double-click a workbook name or select a workbook and click **Select**.

Select

Use this button to schedule the currently selected workbook using the Schedule Wizard.

Description

This area displays background information about the workbook entered when the workbook was created. This information helps you decide which workbook you want to schedule. This area is blank if no additional information was entered.

Share Workbook dialog: User -> Workbook tab

Use this dialog to give a single Discoverer user access to workbooks or scheduled workbooks. For example, you might want to share a number of scheduled workbooks with another Discoverer user. You can also see which workbooks a specified user has access to.

Note: To give many Discoverer users access to a single workbook, use the "Share Workbook dialog: Workbook -> User tab".

For more information, see:

"What are workbooks?"

User

Use this drop down list to specify which user you want to give workbook access to.

Workbook

- **Available**

  Use this list to specify which workbooks you want to give the selected user access to. To give access, move workbooks from the **Available** list to the **Shared** list.

  Note: You can select more than one item workbook by pressing the Ctrl key and clicking another workbook.

- **Shared**

  Use this list to see which workbooks the selected user has access to. To revoke access, move workbooks from the **Shared** list back to the **Available** list.

Description

This field displays additional information about the currently selected workbook (if specified).

Notes

- Scheduled workbooks have a clock symbol in front of the workbook name.

Share Workbook dialog: Workbook -> User tab

Use this dialog to give Discoverer users access to a single workbook or scheduled workbook. For example, you might want to share a workbook with group of Discoverer users in a department. The next time the Discoverer users connect to this Discoverer EUL, they will be able to access this workbook.

You can also see which users have access to a specified workbook.

Note: To give a single Discoverer users access to many workbooks, use the "Share Workbook dialog: User -> Workbook tab".

For more information, see:

"What are workbooks?"

Workbook

Use this drop down list to specify which workbook you want to give Discoverer users access to.

User

- **Available**

  Use this list to specify which users you want to give access to the selected workbook. To give access, move Discoverer user names from the **Available** list to the **Shared** list.

  Note: You can select more than one Discoverer user by pressing the Ctrl key and clicking another Discoverer user.

- **Shared**

  Use this list to see which users have access to the selected workbook. To revoke access, move Discoverer user names from the **Shared** list back to the **Available** list.

Description

This field displays additional information about the currently selected user (if specified).

Notes

- Scheduled workbooks have a clock symbol in front of the workbook name.

Show Condition dialog

This dialog enables you to see in detail a condition defined by the Discoverer manager. When using conditions created by the Discoverer manager, you can look at them, but you cannot change them or remove them from the worksheet.

You can turn them on and off just like other conditions created by you or other Discoverer users.

For more information, see:

"What are conditions?"

What would you like to name your condition?

This field displays the name of the condition.

What description would you like to give your condition?

This field displays additional information about the condition entered when the item was created. It is blank if no additional information was entered.

Formula

This box shows the components of the condition:

- **Item**

  This read-only field shows the item on data is matched against. For example, to filter information about people who earn more than $30,000, this field might contain 'Salary'.

- **Condition**

  This read-only field shows the operators being used to match against the Item. For example, to filter information about people who earn more than $30,000, this field might contain '>' (the greater than operator).

- **Values**

  This read-only field shows the value used to use to match against the selected Item. For example, to filter information about people who earn more than $30,000, this field might contain 30,000.

- **Case sensitive**

  This read-only field shows whether the condition is case sensitive when matching against text data. For example, if turned on, the value 'New York' would not find details containing 'NEW YORK' because the text cases do not

match exactly. If turned off, the value 'New York' would find details containing 'NEW YORK' and 'new york'.

Note: If the condition is an advanced condition containing more than one line, the formula box will show the other lines and the logical operators joining the lines.

Sort Crosstab dialog

Use this tab to change the default sort order of items on the current crosstab worksheet. For example, you might want to order numerical sales data from highest to lowest to analyze at sales performance.

For more information, see:

"About sorting on crosstab worksheets"

"How to sort data on a crosstab worksheet"

"Examples of sorting"

Item to sort

Use this list to select the item on which you want to sort. For example:

- if you have Region on the left axis, you might select Region to sort profit data vertically
- if you have Year on the top axis, you might select Year to sort profit data horizontally

Note: Group sorts automatically take precedence over non-group sorts.

Sort Details for *<worksheet item>*

Use this table to specify sort details for the worksheet item selected in the **Item to sort** list.

Data Point

Use this field to specify the data point on which you want to sort. For example, you might choose Profit SUM to order data by the amount of profit.

Row or Column

Use this field to specify which row or column you want to sort, as follows:

- if you specify an item on the left axis in the **Data Point** field, you specify which column you want to use to sort the worksheet

  For example, you might have Region on the left axis and Year on the top axis. If you choose Region in the **Data Point** field, you choose which Year column you want to sort (e.g. 1998, 1999, 2000).

- if you specify an item on the top axis in the **Data Point** field, you specify which row you want to use to sort the worksheet

For example, you might have Region on the left axis and Year on the top axis. If you choose Year in the **Data Point** field, you choose which Region row you want to sort (e.g. Central, East, West).

Note: This field is blank if the sort item is not a data point.

Direction

Use this drop down list to change how the data is ordered.

- Low to High sorts A - Z alphabetically and 1 - 10 etc. numerically (language specific).
- Hi to Low sorts Z - A alphabetically and 10 - 1 etc. numerically (language specific).

Default sort on row/column headings

Use this drop down list to choose a default sort order.

Add

Use this button to add a new sort to the **Sort details for** table. Use the Data Point, Row / Column, and Direction fields to specify sort details.

Delete

Use this button to remove the sort currently selected in the sort list from the **Sort details for** table.

Move up

Use this button to change the order of precedence of the selected sort item. Moving a sort up the list increases its precedence.

Move down

Use this button to change the order of precedence of the selected sort item. Moving a sort down the list decreases its precedence.

Notes

- You can also drag and drop items into a difference position in the sort list to change the order of precedence.

Total Format dialog

Use this tab to change the default total style for new worksheet items.

Note: Changing the default total style does not change the total style for existing worksheet items. Choose Sheet | Format to change the format of existing worksheet items.

For more information, see:

"About editing worksheets"

Font

Use this drop down list to specify a text font.

Size

Use this drop down list to specify a font size.

Style

Use this drop down list to specify a font style (for example bold, italic, underlined, or sans-serif).

Color

Text

Use this color pane to specify a color for the item text.

Actual font size

Use this check box to display text in the example area in the font size and style selected.

Workbook Wizard: Create/Open Workbook dialog

Use this dialog to specify the type of workbook you want to open. When opening a workbook, you need to know whether it is a workbook stored in the Discoverer database, or whether it is a scheduled workbook stored in the Discoverer database.

If you are not sure about the type of workbook to open, contact the Discoverer manager.

For more information, see:

"What are workbooks?"

"What are worksheets?"

What do you want to do?

- **Create a new workbook**

  Use this button to create a new workbook in which you can store worksheets containing Discoverer data.

- **Open an existing workbook**

  Use this button to open an existing workbook or scheduled workbook from the database.

How do you want to display the information?

Note: These options are displayed when you click Create a new workbook.

Use these check boxes to choose a worksheet style from those available. As you select a style, an example is displayed at the left-hand side to help you choose what style best suits your needs.

Note: You can always change the style at any time when working with the workbook.

- **Table**

  Use this radio button when you want data displayed in columns. This style is similar to a spreadsheet layout.

- **Crosstab**

  Use this radio button when you want data displayed in rows and columns. Here, you can pivot items along the top and side axes.

- **Page-Detail Table**

Use this radio button when you want data displayed in columns grouped by the items in the Page Axis area.

- **Page-Detail Crosstab**

  Use this radio button when you want data displayed in rows and columns grouped by the items in the Page Axis area.

Where is the workbook you want to open?

Note: These options are displayed when you click **Open an existing workbook**.

Use these radio buttons to choose the type of workbook to open.

- **Database**

  Use this radio button to look for a workbook in the database. Unless you work with large amounts of data, most workbooks that you access will be of this type.

- **Scheduled**

  Use this radio button to look for a scheduled workbook in the database. If you work with large amounts of data, the workbook that you want might have been scheduled. This means that because of its size or complexity it is processed at a specific time, typically overnight.

  Contact the Discoverer manager for more information.

Open

Use this button to list workbooks available of the type specified.

Workbook Properties dialog

Use this dialog to find out information about the current workbook. For example, to see when it was created or last revised, or who owns the workbook. You might also want to enter background information that will help other Discoverer users choose which workbook they want to look at.

For more information, see:

"What are workbooks?"

"How to open workbooks"

Name

This read-only field displays the name of the current workbook.

Owner

This read-only field displays the database login name of the owner of the workbook.

Date Created

This read-only field displays the date that the workbook was created.

Date Revised

This read-only field displays the date that the workbook was last changed.

Identifier

Use this field only when you want to change the unique name assigned to the workbook (known as an identifier).

Note: Do not change the **Identifier** value unless specifically asked to do so by the Discoverer manager.

Do not change identifiers except under the following circumstances:

- The identifier must be changed to comply with strict naming conventions.
- A workbook has been deleted and needs to be recreated with the same identifier as its original.

Description

Use this field to enter additional information about the workbook. This information is displayed on the Open Workbook dialog to help Discoverer users choose which workbook they want to look at.

Workbook Wizard: Create Workbook dialog

Use this dialog to choose what type of worksheet to create in the new workbook. You cannot create an empty workbook (a workbook that contains no worksheets). Here, you choose a style for the first worksheet in the workbook.

Note: For more information about maximizing Discoverer performance, see "About designing workbooks for maximum performance".

For more information, see:

"What are workbooks?"

"What are worksheets?"

"How to open workbooks"

How do you want to display the information?

Use these radio buttons to choose a worksheet style from those available. When you select a style, an example is displayed at the left-hand side to help you choose what style best suits your needs.

- **Table**

  Use this radio button when you want data displayed in columns. This style is similar to a spreadsheet layout.

- **Crosstab**

  Use this radio button when you want data displayed in rows and columns. Here, you can pivot items along the top and side axes.

- **Page-Detail Table**

  Use this radio button when you want data displayed in columns grouped by the items in the Page Axis area.

- **Page-Detail Crosstab**

  Use this radio button when you want data displayed in rows and columns grouped by the items in the Page Axis area.

Note: You can always change the style at any time when working with the workbook.

A

Discoverer calculation examples

Discoverer calculation examples

This appendix contains the following sections:

- "About getting more information"
- "About the examples in this chapter"
- "How do I create calculations?"
- "About using parameters to provide dynamic input to calculations"
- "Simple calculation examples"

  For example:

  - "Example: Calculate the number of rows returned by a query"
  - "Example: Calculate a 25% increase in sales"
  - "Example: Convert text to upper-case"
- "Oracle8i analytic function examples"

  For example:

  - "Example: Assign ranks to sales figures"
  - "Example: Calculate a three month moving sales average"
  - "Example: Compare sales figures across time using LAG/LEAD"
  - "Example: Compare sales figures across time using windowing"
  - "Example: Show the cumulative values of sales"
- "Oracle9i analytic function examples"

For example:

- "Example: Calculate hypothetical rank"
- "Example: Producing equi-width bands using WIDTH_BUCKET"
- "Example: Find the largest sales transactions in area with most sales trans'"

- "Examples of using row-based and time-based intervals"

  For example:

  - "Example: Creating a Difference calculation using a row-based interval"
  - "Example: Creating a Difference calculation using a time-based interval"
  - "Example: Creating a Preceding value calculation using a time-based interval"

About getting more information

For more information about Oracle functions in general, refer to the following Oracle publications:

- *Oracle8i SQL Reference*
- *Oracle8i Data Warehousing Guide*
- *Oracle9i SQL Reference*
- *Oracle9i Data Warehousing Guide*

About the examples in this chapter

The examples in the following sections use the Video Stores Tutorial supplied with Discoverer. If you do not have the Video Stores Tutorial installed, contact the Discoverer manager.

Note: If that database version that you are using does not support IF or CASE statements, you can use DECODE instead. Alternatively, you can create a PL/SQL function in the database.

How do I create calculations?

For information about how to create calculations, see "How to create calculations". You can also find a worked example of creating a calculation in 'Exercise 6 - Adding Calculations' in the *Oracle Application Server Discoverer Plus Tutorial*.

About using parameters to provide dynamic input to calculations

You often use parameters to provide dynamic input to calculations. This enables other values to be entered arbitrarily for more effective analysis. In other words, to provide a different value to a calculation, you simply refresh the worksheet and enter a new value in the "Edit Parameter Values dialog".

Parameter values used in calculations are prefixed with a colon (:). For example, a parameter called Hypothetical Value would be referenced in a calculation as follows:

```
RANK(:Hypothetical Value) WITHIN GROUP(ORDER BY Profit DESC NULLS FIRST)
```

For more information about using parameter values in calculations, see "About using parameters to collect dynamic user input".

Simple calculation examples

The examples in this section show you how to use basic functions with Discoverer to manipulate and analyze data.

Examples:

- "Example: Calculate the number of rows returned by a query"
- "Example: Calculate a 25% increase in sales"
- "Example: Convert text to upper-case"

Notes

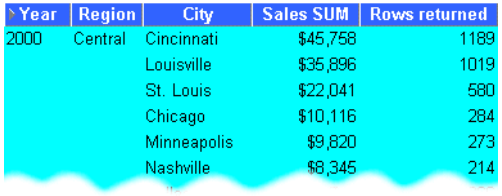
- Examples in this section use a selection of commonly used commands. For a complete list of commands and their full syntax, refer to the Oracle SQL and warehousing guides.
- For more information on how to create calculations, see "Using calculations".

Example: Calculate the number of rows returned by a query

This example calculates the number of rows returned by a query using the Oracle function ROWCOUNT().

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region, City
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Region = Central
Calculation Name	Rows returned
Calculation	ROWCOUNT

Figure 20–1 Worksheet containing the Rows returned calculation



Year	Region	City	Sales SUM	Rows returned
2000	Central	Cincinnati	$45,758	1189
		Louisville	$35,896	1019
		St. Louis	$22,041	580
		Chicago	$10,116	284
		Minneapolis	$9,820	273
		Nashville	$8,345	214

The worksheet shows the number of rows returned for each city in the central region for the year 2000.

Notes

- ROWCOUNT does not count NULL values. To calculate the number of rows returned by a query, including NULL values, do the following:
  - **a.** first create a temporary item called 'One record', with the formula = '1'
  - **b.** create a calculation called 'Rows returned' to count the occurrences of One record, with the formula = SUM(Video Sales Analysis.One record)

Example: Calculate a 25% increase in sales

This example calculates a 25% increase in sales.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region, City
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Region = Central
Calculation Name	25% Increase
Calculation	Sales SUM * 1.25

Figure 20–2 Worksheet containing the 25% sales increase calculation.

Year	Region	City	Sales SUM	25% Increase
2000	Central	Chicago	$10,116	$12,645
		St. Louis	$22,041	$27,551
		Nashville	$8,345	$10,431
		Louisville	$35,896	$44,870
		Minneapolis	$9,820	$12,275
		Dallas	$7,749	$9,686
		Cincinnati	$45,758	$57,198

The worksheet shows a 25% increase in sales for cities in the central region.

Example: Convert text to upper-case

As well as the extensive range of mathematical functions available in Discoverer, you also have access to a wide range of number and text formatting functions. This example uses a calculation to re-format City text data to upper-case

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region

Worksheet options	Set to:
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Region = Central
Calculation Name	City(Upper Case)
Calculation	UPPER(City)

Figure 20–3 Worksheet containing the City(Upper Case) calculation

Year	Region	City	Sales SUM	City (Upper Case)
2000	Central	Chicago	$10,116	CHICAGO
		Cincinnati	$45,758	CINCINNATI
		Dallas	$7,749	DALLAS
		Louisville	$35,896	LOUISVILLE
		Minneapolis	$9,820	MINNEAPOLIS
		Nashville	$8,345	NASHVILLE
		St. Louis	$22,041	ST. LOUIS

The figure above shows a worksheet containing the city names for the central region converted to upper case.

Oracle8i analytic function examples

The examples in this section show you how to use the Oracle8*i* analytic functions with Discoverer to perform detailed data analysis.

This section contains the following topics:

Notes

- Oracle Discoverer supports all functions that are supported by the version of the Oracle database being used. For example, analytic functions are supported by Oracle 8.1.7 (or later) Enterprise Edition databases.
- Examples in this section use a selection of commonly used functions. For a complete list of functions and their full syntax, refer to *Oracle8i SQL Reference* and *Oracle8i Data Warehousing Guide.*
- For more information on how to create calculations, see "How to create calculations".
- Discoverer provides easy-to-use templates for the most popular analytic functions (for more information, see "What analytic function templates are available in Discoverer").

About analytic function categories

Analytic functions are classified in the following categories:

- **Ranking** - Address business questions like: ‘What are the top 10 and bottom 10 salespeople per region?’.
- **Banding** - Address business questions like ‘What brands make up 25% of sales?’.
- **Windowing** - Address business questions like ‘What is the 13-week moving average of a stock price?’ or ‘What is the cumulative sum of sales per region?’.
- **Reporting Aggregates -** After a query has been processed, aggregate values like the number of resulting rows, or the sum of a column in a set of rows. Address questions like ‘What are each product’s Sales as a percentage of Sales for its product group?’.
- **Lag/Lead -** Address business questions like ‘What was the value of sales for the same period one year ago?’.
- **Statistics** - Perform statistical analysis with Business Intelligence OLAP / spreadsheet applications. For example, covariance and linear regression functions.

About analytic functions and drilling into and out of data

When you use analytic functions, note that they have a precise definition which might not change as you drill, pivot, or sort the result set. For example, if you use

the Rank function to assign ranks to sales figures partitioned by quarter, if you drill down to the month level, the rank still only applies to the quarter level.

About creating analytic functions

Discoverer Plus provides easy-to-use templates for the most popular analytic functions (for more information, see "What analytic function templates are available in Discoverer").

If you want to create an analytic function that does not have a template, you can either type or paste it directly into the **Calculation** field on the "New Calculation dialog", or you can select it from the function list.

If you select analytic functions from the function list on the "New Calculation dialog", Discoverer copies a blank analytic function into the **Calculation** field. The blank analytic function contains *expr* prompts for missing values that tell you what information you might need to provide. The *expr* prompts are designed to cover most types of usage, and should be used only as a guide. In other words, you will not always need to use every *expr* prompt to define an analytic function.

For example, when you select the RANK analytic function in the "New Calculation dialog", Discoverer types the following text into the **Calculation** field:

RANK() OVER (PARTITION BY expr1 ORDER BY expr2)

Although you can define a complex function using both expressions (expr1 and expr2), you can often define a simple function using only the ORDER BY expression; for example:

RANK() OVER(ORDER BY 'Sales')

This example ranks sales figures (defined in the 'Sales' item).

Notes

- By default, results data is sorted in ascending order (ASC), nulls first (NULLS FIRST).
- For more information about entering analytic functions, see "More about analytic functions expressions".

Ranking function examples

About ranking

Ranking functions compute the league table position (or rank) of an item with respect to other items in an ordered list.

Examples:

- "Example: Assign ranks to sales figures"
- "Example: Assign ranks to sales figures within region"
- "Example: Show the top three selling cities per region"
- "Example: Show the top three and bottom three selling cities per region"

Hint: You can also use analytic function templates to quickly and easily create calculations based on ranking functions (for more information, see "How to create a new calculation using an analytic function template".

Example: Assign ranks to sales figures

This example calculates the league table position (or rank) of a set of sales figures.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Rank Sales, Year, Region
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000
Calculation Name	Rank Sales
Calculation	RANK() OVER(ORDER BY Sales SUM DESC)

Figure 20–4 Worksheet containing the Rank Sales calculation

Year	Region	City	Sales SUM	Rank Sales
2000	East	New York	$85,974.23	1
2000	Central	Cincinnati	$48,371.47	2
2000	West	San Francisco	$40,516.78	3
2000	West	Seattle	$37,436.28	4
2000	Central	Louisville	$36,526.55	5
2000	East	Washington	$35,569.79	6
2000	East	Philadelphia	$27,143.73	7
2000	Central	St. Louis	$23,670.97	8
2000	East	Pittsburgh	$22,961.40	9
2000	East	Atlanta	$21,577.62	10
2000	East	Boston	$20,358.90	11
2000	West	Denver	$20	

The worksheet shows the league table position of sales figures for cities in the year 2000.

Notes

- By default, ranked results data is sorted in ascending order (ASC), nulls first (NULLS FIRST). The additional DESC parameter sorts the results in descending order, which ranks the highest value with the Rank 1.

Example: Assign ranks to sales figures within region

This example calculates the league table position (or rank) of a set of sales figures within each region.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000
Calculation Name	Rank sales within Region
Calculation	RANK() OVER(PARTITION BY Year, Region ORDER BY Sales SUM DESC)

Figure 20–5 Worksheet containing the Rank sales within Region calculation

Year	Region	City	Sales SUM	Rank sales within Region
2000	Central	Cincinnati	$48,371.47	1
		Louisville	$36,526.55	2
		St. Louis	$23,670.97	3
		Minneapolis	$10,276.97	4
		Chicago	$10,231.29	5
		Dallas	$8,470.30	6
		Nashville	$8,407.65	7
	East	New York	$85,974.23	1
		Washington	$35,569.79	2
		Philadelphia	$27,143.73	3
		Pittsburgh	$22,961.40	4
		Atlanta	$21,577.62	5
		Boston	$20,358.90	6
		New Orleans	$11,458.96	7
		Miami	$7,483.01	8
	West	San Francisco	$40,516.78	1

The worksheet shows the league table position of sales figures for cities grouped by region within year.

Notes

- By default, ranked results data is sorted in ascending order (ASC), nulls first (NULLS FIRST). The additional DESC parameter sorts the results in descending order, which ranks the highest value with the Rank 1.

Example: Show the top three selling cities per region

This example calculates the league table position (or rank) of a set of sales figures and displays the top three selling cities.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Rank Top <= 3
Calculation Name	Rank Top

Worksheet options	Set to:
Calculation	RANK() OVER(PARTITION BY Year, Region ORDER BY Sales SUM DESC)

Figure 20–6 Worksheet containing the Rank Top calculation used in a condition

Year	Region	City	Sales SUM	Rank Top
2000	Central	Cincinnati	$48,371.47	1
		Louisville	$36,526.55	2
		St. Louis	$23,670.97	3
	East	New York	$85,974.23	1
		Washington	$35,569.79	2
		Philadelphia	$27,143.73	3
	West	San Francisco	$40,516.78	1
		Seattle	$37,436.28	2
		Denver	$20,111.32	3

The worksheet shows a league table of the top three highest sales figures for each region within year.

Notes

- By default, ranked results data is sorted in ascending order (ASC), nulls first (NULLS FIRST). The additional DESC parameter sorts the results in descending order, which ranks the highest value with the Rank 1.
- **Hint:** To quickly filter the list to the first, second, or third ranked cities, pivot the Rank Top item to the page axis.

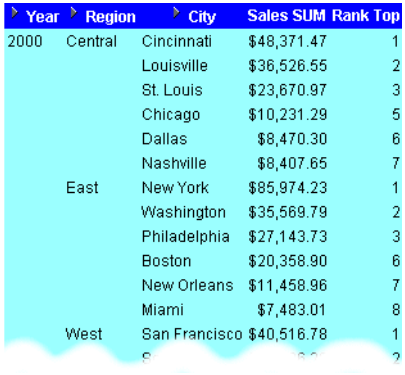
Example: Show the top three and bottom three selling cities per region

This example calculates the league table position (or rank) of a set of sales figures and displays the top three and bottom three performing cities per region.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region, Rank Top

Worksheet options	Set to:
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Rank Top <= 3 OR Rank Bottom <= 3
Calculation Name	Rank Top
Calculation	RANK() OVER(PARTITION BY Year, Region ORDER BY Sales SUM DESC)
Additional Calculations Required	Rank Bottom = RANK() OVER(PARTITION BY Year, Region ORDER BY Sales SUM ASC)

Figure 20–7 Worksheet containing the Rank Top calculation used in a condition



Year	Region	City	Sales SUM	Rank Top
2000	Central	Cincinnati	$48,371.47	1
		Louisville	$36,526.55	2
		St. Louis	$23,670.97	3
		Chicago	$10,231.29	5
		Dallas	$8,470.30	6
		Nashville	$8,407.65	7
	East	New York	$85,974.23	1
		Washington	$35,569.79	2
		Philadelphia	$27,143.73	3
		Boston	$20,358.90	6
		New Orleans	$11,458.96	7
		Miami	$7,483.01	8
	West	San Francisco	$40,516.78	1

The worksheet shows a league table of the three highest and three lowest sales figures for each region within year.

Notes

- This analysis involves three steps:
  1. Assign ranks to Cities on Sales SUM in descending order, as Rank Top.
  2. Assign ranks to Cities on Sales SUM in ascending order, as Rank Bottom.
  3. Displaying only Rank Top, filter the data using a Condition to return only the top three and bottom three ranked Cities.
- In the example, in the ‘Central’ Region, the top three cities are ranked 1, 2, and 3; the bottom three cities are ranked 5, 6, and 7.

In the ‘East’ Region, the top three cities are ranked 1, 2, and 3; the bottom three cities are ranked 6, 7, and 8, and so on.

Banding function examples

About banding

Banding is a type of ranking that divides a list of values in a partition into a specified number of groups called bands (also known as buckets) and assigns each value to a band.

Examples:

- "Example: Banding by value (1)"
- "Example: Banding by value (2)"
- "Example: Banding by rank"

Hint: You can also use analytic function templates to quickly and easily create calculations based on banding functions (for more information, see "How to create a new calculation using an analytic function template".

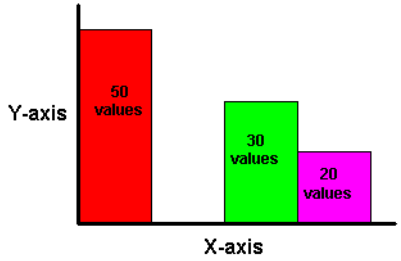
Two common types of banding are:

- **Banding by value** - this divides values into groups according to their **value** (also known as equi-width bands). This type of analysis is also known as frequency distribution.

  Here, the function typically takes the largest value minus the lowest value, and divides the result by the number of bands required. This value defines the range of each Band.

  Values are then assigned to bands according to which range they fall into. Therefore, the number of values in each Band might differ. For example, if we have 100 values and divide them into four equi-width bands, each band might contain different numbers of values.

Figure 20–8 Banding By value



Use the GREATEST function or the CASE function to produce equi-width bands based on value.

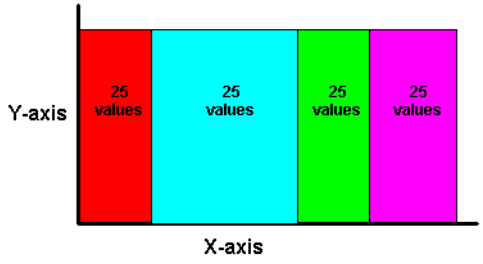
Note: If that database version that you are using does not support IF or CASE statements, you can use DECODE instead. Alternatively, you can create a PL/SQL function in the database.

Hint: If you are using an Oracle9*i* database, use the WIDTH_BUCKET function to produce equi-width bands (see "Example: Producing equi-width bands using WIDTH_BUCKET").

- **Banding by rank** - this divides values into groups according to their **rank** (also known as equi-height bands). This type of analysis is also known as percentile analysis (e.g. 4 bands give quartiles).

  Here, the function divides the number of values in the partition by the number of bands, which gives the number of values in each band. An equal number of values are then placed in each band. For example, if we have 100 values and divide them into four equi-height bands, each band contains 25 values.

Figure 20–9 Banding By Rank



Use the NTILE function to produce equi-height bands based on rank.

Example: Banding by value (1)

This example divides sales figures into bands according to their value (e.g. for frequency analysis). For more information, see "Example: Banding by value (2)".

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Region = Central
Calculation Name	Sales Bands
Calculation	GREATEST(1,4-FLOOR((Sales SUM-Min Sales for Region)/GREATEST(1,FLOOR((Max Sales for Region-Min Sales for Region+1)/4))))
Additional Calculations Required	Max Sales for Region = MAX(Sales SUM) OVER(PARTITION BY Region,Year) Min Sales for Region = MIN(Sales SUM) OVER(PARTITION BY Region,Year)

Figure 20–10 Worksheet containing the Sales Bands calculation

Year	Region	City	Sales SUM	Sales Bands
2000	Central	Cincinnati	$45,758	1
		Louisville	$35,896	2
		St. Louis	$22,041	3
		Minneapolis	$9,820	4
		Nashville	$8,345	4
		Dallas	$7,749	4

The worksheet shows equi-width bands for sales figures for cities in the central region within year.

Notes

- Using the Central Region and Year 2000 as an example, this function takes the largest value (45,758) minus the smallest value (7,749) and divides it by four

((45,758-7,749) / 4), giving four equal Bands of 9,502.25. This gives four bands with the following ranges:

- Band 1 - 36,255.75 to 45,758
- Band 2 - 26,753.5 to 36,255.75
- Band 3 - 17,251.25 to 26,753.5
- Band 4 - 7,749 to 17,251.25

- Each value is placed in one of the four Bands depending on which range the Sales SUM value falls into.
- The FLOOR function returns the largest integer equal to or less than n. For example, in Dallas, the expression FLOOR(Sales SUM-Min Sales for Region) returns the smallest integer value from 7,749 minus 7,749, which returns 0. When used in conjunction with the GREATEST function (see calculation above), the expression GREATEST(1,4-FLOOR((Sales SUM-Min Sales for Region) returns the largest value from either 1 or, 4 minus the smallest integer value from 7,749 minus 7,749 (4 minus 0 equals 4). In other words, the expression returns the value 4.
- If you are using an Oracle9*i* database, use the WIDTH_BUCKET function to produce equi-width bands (see "Example: Producing equi-width bands using WIDTH_BUCKET").

Example: Banding by value (2)

This example divides sales figures into bands according to their value. The example creates the same results as the example in "Example: Banding by value (1)", except that it uses a CASE statement rather than the GREATEST function (e.g. for frequency analysis).

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Region = Central
Calculation Name	Sales Bands 2

Worksheet options	Set to:
Calculation	CASE WHEN Sales SUM < Q1 THEN 4 WHEN Sales SUM < Q2 THEN 3 WHEN Sales SUM < Q3 THEN 2 WHEN Sales SUM >= Q3 THEN 1 END
Additional Calculations Required	MAX Sales = MAX(Sales SUM) OVER(PARTITION BY Year) MIN Sales = MIN(Sales SUM) OVER(PARTITION BY Year) Range = (MAX Sales - MIN Sales) / 4 Q1 = MIN Sales + Range Q2 = MIN Sales + (Range*2) Q3 = MAX Sales - Range

Figure 20–11 Worksheet containing the Sales Bands 2 calculation

Year	Region	City	Sales SUM	Sales Bands 2
2000	Central	Cincinnati	$45,758	1
		Louisville	$35,896	2
		St. Louis	$22,041	3
		Minneapolis	$9,820	4
		Nashville	$8,345	4
		Dallas	$7,749	4

The worksheet shows equi-width bands for sales figures for cities in the central region within year.

Notes

- This function uses a series of IF statements in the form of a CASE function to assign sales figures into bands (see Band ranges below).

- If you are using an Oracle9*i* database, use the WIDTH_BUCKET function to produce equi-width bands (see "Example: Producing equi-width bands using WIDTH_BUCKET").

Example: Banding by rank

This example divides sales figures into two bands according to their rank (e.g. for percentile analysis).

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Region = Central
Calculation Name	Sales Bands 3
Calculation	NTILE(2) OVER(PARTITION BY Year, Region ORDER BY Sales SUM DESC)

Figure 20–12 Worksheet containing the Sales Bands 3 calculation

Year	Region	City	Sales SUM	Sales Bands 3
2000	Central	Cincinnati	$45,758	1
		Louisville	$35,896	1
		St. Louis	$22,041	1
		Minneapolis	$9,820	2
		Nashville	$8,345	2
		Dallas	$7,749	2

The worksheet shows equi-height bands for sales figures for cities in the central region within year.

Notes

- Using the Central Region and Year 2000 as an example, this function takes the number of values (which is six) and divides it by two, giving three values per Band. It then takes the list of values ordered by Sales SUM and places values one, two, and three in band 1, values four, five, and six in band 2.

Windowing function examples

About windowing

Windowing functions are used to compute aggregates using values from other rows. For example, cumulative, moving, and centered aggregates.

Note: For more information about using row-based and time-based intervals, see "Examples of using row-based and time-based intervals".

Examples:

- "Example: Calculate a three month moving sales average"
- "Example: Show the cumulative values of sales"
- "Example: Compare sales figures across time using windowing"

Hint: You can also use analytic function templates to quickly and easily create calculations based on windowing functions (for more information, see "How to create a new calculation using an analytic function template".

Two common types of windowing are:

- **Windowing with time-based intervals** - here, a time-based interval is based on a value relative to an existing value. For example, three months preceding a date value.

  Note: Time-based intervals are also known as logical offsets.

  Time-based intervals are useful when data has missing rows. For example, you might not have seven rows for sales figures for seven days in a week, but you still want to find a weekly average.

  For example, if we have a list of monthly sales figures, a logical window might compute a moving average of the previous three months (inclusive of the current month). When calculating the average, the calculation assumes a NULL value for months missing from the list. In the example below, the three-month moving average for November assumes NULL values for the missing months September and October.

Figure 20–13 Using a time-based interval

Month	Sales	Rolling Average
January	10,000	-
February	20,000	-
March	40,000	23,333
June	20,000	20,000
July	10,000	15,000
November	30,000	30,000

- **Windowing with row-based intervals** - here, a row-based interval is based on a value that is a specified number of rows from an existing value. For example, three rows from the current item.

  Note: Time-based intervals are also known as physical offsets.

  Row-based intervals are useful when data does not have missing rows. For example, if you know that you have seven rows for sales figures for seven days in a week, you can calculate a weekly average by starting the interval six rows before the current row (inclusive).

  For example, if we have a list of monthly sales figures, a physical window might compute a moving average of the previous three rows. When calculating the average, the calculation ignores months missing from the list. In the example below, the three-month moving average for November uses June, July, and November in the calculation.

Figure 20–14 Using a row-based interval

Month	Sales	Rolling Average
January	10,000	-
February	20,000	-
March	40,000	23,333
June	20,000	26,666
July	10,000	23,333
November	30,000	20,000

Note: For more information about using row-based and time-based intervals, see "Examples of using row-based and time-based intervals".

Example: Calculate a three month moving sales average

This example uses a time-based interval to calculate a moving three month sales average.

Note: Moving averages are also known as rolling averages.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Calendar Month, Sales SUM
Sort Order	Year, Month
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Region = Central
Calculation Name	Moving Average
Calculation	AVG(Sales SUM) OVER(ORDER BY "Calendar Month" RANGE INTERVAL '2' MONTH PRECEDING)

Figure 20–15 Worksheet containing the Moving Average calculation

Year	Month	Sales SUM	Moving Average
2000	Jan	$32,568	$32,568
2000	Feb	$21,292	$26,930
2000	Mar	$17,315	$23,725
2000	Apr	$34,893	$24,500
2000	May	$21,395	$24,535
2000	Jun	$18,491	$24,927

The worksheet shows a moving three month average for sales figures for months in the year 2000.

Notes

- Note that you define the RANGE INTERVAL as ‘2’, not ‘3’, even though you want a three month window. This is because the window expression implicitly includes the current row. Therefore, in this example, the INTERVAL ‘2’ plus the current row gives a total of three months (2 + current row = 3).

Example: Show the cumulative values of sales

This example uses a row-based interval to calculate the cumulative value of sales.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM

Worksheet options	Set to:
Sort Order	Year, Region
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Region = Central
Calculation Name	Cumulative Total
Calculation	SUM(Sales SUM) OVER(PARTITION BY "Calendar Year", Region ORDER BY Sales SUM ROWS UNBOUNDED PRECEDING)

Figure 20–16 Worksheet containing the Cumulative Total calculation

Year	Region	City	Sales SUM	Cumulative Total
2000	Central	Nashville	$8,408	$8,408
		Dallas	$8,470	$16,878
		Chicago	$10,231	$27,109
		Minneapolis	$10,277	$37,386
		St. Louis	$23,671	$61,057
		Louisville	$36,527	$97,584
		Cincinnati	$48,371	$145,955

The worksheet shows a cumulative total for sales figures for cities in the central region.

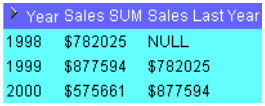
Example: Compare sales figures across time using windowing

This example uses a time-based interval to calculate sales figures for previous years. This enables you to compare sales figures over different years, or compare previous years' sales figures with other values, such as spending in previous years.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Sales SUM
Sort Order	N / A
Conditions	N / A
Calculation Name	Sales Last Year

Worksheet options	Set to:
Calculation	SUM(Sales SUM) OVER(ORDER BY "Calendar Year" RANGE BETWEEN INTERVAL '1' YEAR PRECEDING AND INTERVAL '1' YEAR PRECEDING)

Figure 20–17 Worksheet containing the Sales Last Year calculation



Year	Sales SUM	Sales Last Year
1998	$782025	NULL
1999	$877594	$782025
2000	$575661	$877594

For each row, the worksheet shows the sales total for the previous year.

Notes

- In the example above, the Sales Last Year value for 1998 is NULL because the database does not contain information for 1997.
- You can also use LAG/LEAD functions to compare values across time (see "LAG/LEAD function examples".

Reporting function examples

About reporting functions

Reporting functions are used to compute aggregates.

Examples:

- "Example: Calculate annual sales"
- "Example: Calculate annual sales by region"
- "Example: Calculate percentage of annual sales by region"
- "Example: Calculate city sales as a percentage of total sales"

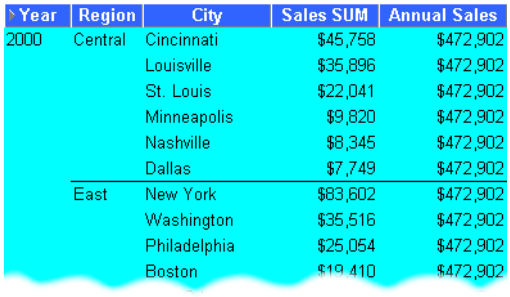
Hint: You can also use analytic function templates to quickly and easily create calculations based on reporting functions (for more information, see "How to create a new calculation using an analytic function template".

Example: Calculate annual sales

This example calculates annual sales.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000
Calculation Name	Annual Sales
Calculation	SUM(Sales SUM) OVER()

Figure 20–18 Worksheet containing the Annual Sales calculation



Year	Region	City	Sales SUM	Annual Sales
2000	Central	Cincinnati	$45,758	$472,902
		Louisville	$35,896	$472,902
		St. Louis	$22,041	$472,902
		Minneapolis	$9,820	$472,902
		Nashville	$8,345	$472,902
		Dallas	$7,749	$472,902
	East	New York	$83,602	$472,902
		Washington	$35,516	$472,902
		Philadelphia	$25,054	$472,902
		Boston	$19,410	$472,902

The worksheet shows the annual sales value for cities in the year 2000.

Notes

- On table worksheets, the calculation displays the returned value for each row in the worksheet. To return a single value, move the calculation into the Page Items area (for more details see Additional Notes in "Example: Find the largest sales transactions in area with most sales trans'".

Example: Calculate annual sales by region

This example calculates the total annual sales by region.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000
Calculation Name	Annual Sales by Region
Calculation	SUM(Sales SUM) OVER(PARTITION BY Year, Region ORDER BY Year, Region)

.

Figure 20–19 Worksheet containing the Annual Sales by Region calculation

Region	City	Sales SUM	Annual sales by region
Central	Cincinnati	$48,371	$145,955
	Louisville	$36,527	$145,955
	St. Louis	$23,671	$145,955
	Minneapolis	$10,277	$145,955
	Chicago	$10,231	$145,955
	Dallas	$8,470	$145,955
	Nashville	$8,408	$145,955
		Sum: $145,955	
East	New York	$85,974	$232,528
	Washington	$35,570	$232,528
	Philadelphia	$27,144	$232,528
	Pittsburgh	$22,961	$232,528
	Atlanta	$21,578	$232,528
	Boston	$20,359	$232,528
	New Orleans	$11,459	$232,528
	Miami	$7,483	$232,528
		Sum: $232,528	
West	San Francisco	$40,517	$110,940

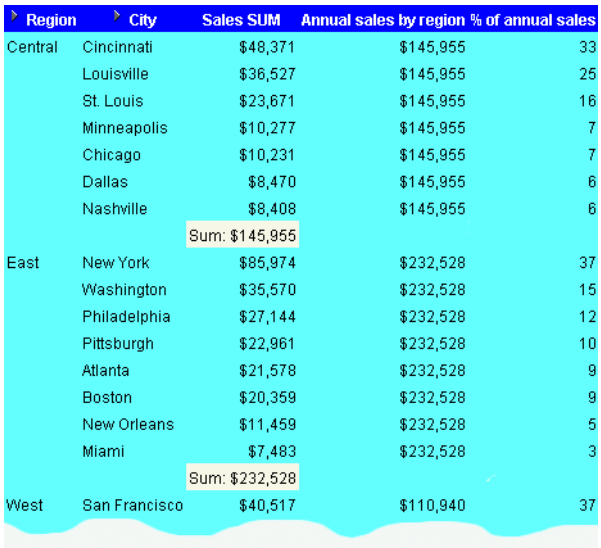
The worksheet shows the annual sales total for cities, grouped by region within year.

Example: Calculate percentage of annual sales by region

This example calculates the percentage of annual sales per region for each city in each year.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region, % of Annual Sales
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000
Calculation Name	% of Annual Sales
Calculation	Sales SUM*100 / Annual Sales by Region
Additional Calculations Required	Annual Sales by Region = SUM(Sales SUM) OVER(PARTITION BY Year, Region ORDER BY Year, Region)

Figure 20–20 Worksheet containing the % of Annual Sales calculation



Region	City	Sales SUM	Annual sales by region	% of annual sales
Central	Cincinnati	$48,371	$145,955	33
	Louisville	$36,527	$145,955	25
	St. Louis	$23,671	$145,955	16
	Minneapolis	$10,277	$145,955	7
	Chicago	$10,231	$145,955	7
	Dallas	$8,470	$145,955	6
	Nashville	$8,408	$145,955	6
		Sum: $145,955		
East	New York	$85,974	$232,528	37
	Washington	$35,570	$232,528	15
	Philadelphia	$27,144	$232,528	12
	Pittsburgh	$22,961	$232,528	10
	Atlanta	$21,578	$232,528	9
	Boston	$20,359	$232,528	9
	New Orleans	$11,459	$232,528	5
	Miami	$7,483	$232,528	3
		Sum: $232,528		
West	San Francisco	$40,517	$110,940	37

The worksheet shows sales as a percentage of annual sales, grouped by region within year.

Example: Calculate city sales as a percentage of total sales

This example calculates city sales as a percentage of total sales.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, City, Sales SUM
Sort Order	Year, Region, % of Annual Sales
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Region = Central
Calculation Name	% of total Sales
Calculation	RATIO_TO_REPORT(Sales SUM) OVER()*100

Figure 20–21 Worksheet containing the % of Annual Sales calculation

Year	Region	City	Sales SUM	% of Total Sales
2000	Central	Cincinnati	$45,758	32.75
		Louisville	$35,896	25.69
		St. Louis	$22,041	15.77
		Minneapolis	$9,820	7.03
		Nashville	$8,345	5.97
		Dallas	$7,749	5.55

The worksheet shows the sales value for cities as a percentage of total sales.

Notes

- The function RATIO_TO_REPORT computes the ratio of a value to the sum of a set of values.

LAG/LEAD function examples

About LAG/LEAD functions

LAG and LEAD functions are typically used to compare values in different time periods. For example, compare sales figures in 2000 with sales figures in 2001.

- LAG - provides access to more than one row of a table at the same time without a self-join.
- LEAD - provides access to a row at a given offset after the current position.

You can also use windowing functions to compare values over time (see "Example: Compare sales figures across time using windowing".

Hint: You can also use analytic function templates to quickly and easily create calculations based on LAG/LEAD functions (for more information, see "How to create a new calculation using an analytic function template".

Examples:

- "Example: Compare sales figures across time using LAG/LEAD"
- "Example: Calculate sales growth across time"
- "Example: Rank sales growth"

Example: Compare sales figures across time using LAG/LEAD

In this example, you want to compare monthly sales figures with sales figures for the same month in the previous year. For example, to look at how January 1999 sales compare with January 1998 sales.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Calendar Quarter, Calendar Month, Sales SUM
Sort Order	Calendar Year, Calendar Quarter, Calendar Month
Conditions	Department = Video Sale OR Department = Video Rental
Calculation Name	Previous Year
Calculation	LAG(Sales SUM,1) OVER(PARTITION BY "Calendar Month" ORDER BY "Calendar Year")

Figure 20–22 Worksheet containing the Previous Year calculation partitioned by Calendar Month

Year	Quarter	Month	Sales SUM	Previous year
1998	Q1	Jan	$50889	NULL
		Feb	$46760	NULL
		Mar	$51121	NULL
	Q2	Apr	$48309	NULL
		May	$52009	NULL
		Jun	$53465	NULL
	Q3	Jul	$52089	NULL
		Aug	$54118	NULL
		Sep	$51546	NULL
	Q4	Oct	$52650	NULL
		Nov	$48131	NULL
		Dec	$59341	NULL
1999	Q1	Jan	$67887	$50889
		Feb	$54163	$46760
		Mar	$48799	$51121
	Q2	Apr	$60895	$48309
		May	$61528	$52009
		Jun	$61276	$53465
	Q3	Jul	$67933	$52089
		Aug	$57168	$54118

The worksheet shows contains the calculation Previous Year, which shows for each Sales SUM amount the sales amount for one year previously. For example, the Previous Year value for January 1999 is $50889, which is the Sales SUM value for January 1998.

Notes

- Because there are no comparative figures for 1998, the Previous Year values for 1998 are blank.
- Notice that the value '1' in the LAG(Sales SUM,1) clause calculates the value from one year previously. For example, if you changed this value to '2', you would calculate the value from two years previously.
- Notice that the calculation includes the clause 'PARTITION BY Calendar Month', which gives you a value for each combination of Calendar Year (in the ORDER BY clause) and Calendar Month (in the PARTITION BY clause). In other words, the Previous Year value for February 1999 is the Sales SUM value for February 1998. If you removed this clause, you would calculate the value for

the previous month (see example below). In other words, the Previous Year value for February 1999 would be the Sales SUM value for January 1999.

Figure 20–23 Worksheet containing the Previous Year calculation with the partition removed

Year	Quarter	Month	Sales SUM	Previous year
1998	Q1	Jan	$50889	NULL
		Feb	$46760	$50889
		Mar	$51121	$46760
	Q2	Apr	$48309	$51121
		May	$52009	$48309
		Jun	$53465	$52009
	Q3	Jul	$52089	$53465
		Aug	$54118	$52089
		Sep	$51546	$54118
	Q4	Oct	$52650	$51546
		Nov	$48131	$52650
		Dec	$59341	$48131
1999	Q1	Jan	$67887	$59341
		Feb	$54163	$67887
		Mar	$48799	$54163
	Q2	Apr	$60895	$48799
		May	$61528	$60895
		Jun	$61276	$61528
	Q3	Jul	$67933	$61276
		Aug	$57168	$67933

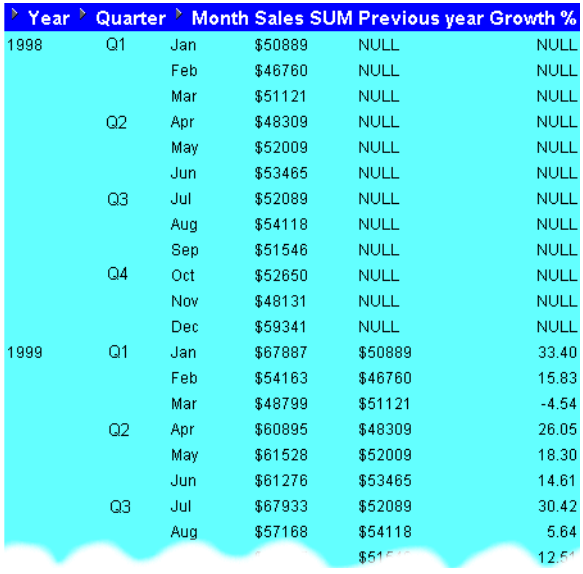
Example: Calculate sales growth across time

In this example, you want to calculate the percentage growth of sales across years by comparing the sales figures with sales figures for the same month in the previous year. You will do this using the comparative sales figures from example "Example: Compare sales figures across time using LAG/LEAD".

Worksheet option	Set to:
Items	Video Analysis Information: Calendar Year, Calendar Quarter, Calendar Month, Sales SUM
Sort Order	Calendar Year, Calendar Quarter, Calendar Month
Conditions	Department = Video Sale OR Department = Video Rental
Calculation Name	Growth %

Worksheet option	Set to:
Calculation	(Sales SUM-"Previous year")*100/"Previous year"
Additional Calculations Required	LAG(Sales SUM,1) OVER(PARTITION BY "Calendar Month" ORDER BY "Calendar Year")

Figure 20–24 Worksheet containing the Growth calculation



Year	Quarter	Month	Sales SUM	Previous year	Growth %
1998	Q1	Jan	$50889	NULL	NULL
		Feb	$46760	NULL	NULL
		Mar	$51121	NULL	NULL
	Q2	Apr	$48309	NULL	NULL
		May	$52009	NULL	NULL
		Jun	$53465	NULL	NULL
	Q3	Jul	$52089	NULL	NULL
		Aug	$54118	NULL	NULL
		Sep	$51546	NULL	NULL
	Q4	Oct	$52650	NULL	NULL
		Nov	$48131	NULL	NULL
		Dec	$59341	NULL	NULL
1999	Q1	Jan	$67887	$50889	33.40
		Feb	$54163	$46760	15.83
		Mar	$48799	$51121	-4.54
	Q2	Apr	$60895	$48309	26.05
		May	$61528	$52009	18.30
		Jun	$61276	$53465	14.61
	Q3	Jul	$67933	$52089	30.42
		Aug	$57168	$54118	5.64
					12.51

The worksheet shows contains the calculation Growth %, which shows for each month the percentage increase in sales since the previous year. For example, the Growth % value for January 1999 is 30.40% (i.e. from $50889 to $67887).

Notes

- Because there are no comparative figures for 1998, the Growth values for 1998 are blank.
- The calculation subtracts the Previous Year value from the Sales SUM value, then multiplies the result by the Sales SUM value divided by the Previous Year value. For example, if sales have risen from 75 to 100, the calculation becomes 25 * 1.33, giving 33.33% increase.
- For more information about the calculation Previous Year, see "Example: Compare sales figures across time using LAG/LEAD".

Example: Rank sales growth

In this example, you want to create a league table of sales growth, to show which months show the highest year on year increase in sales.

You will do this using the comparative sales figures and growth figures from examples "Example: Compare sales figures across time using LAG/LEAD" and "Example: Calculate sales growth across time", and a RANK function.

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Calendar Quarter, Calendar Month, Sales SUM
Sort Order	Calendar Year, Calendar Quarter, Calendar Month
Conditions	Department = Video Sale OR Department = Video Rental
Calculation Name	Rank Growth
Calculation	RANK() OVER(PARTITION BY "Calendar Year" ORDER BY "Growth %" DESC)
Additional Calculations Required	Previous Year = LAG(Sales SUM,1) OVER(PARTITION BY "Calendar Month" ORDER BY "Calendar Year") Growth % = (Sales SUM-"Previous year")*100/"Previous year"

Figure 20–25 Worksheet containing the Rank Growth calculation

Year	Quarter	Month	Sales SUM	Previous year Growth	% Rank Growth
1998	Q1	Jan	$50889	NULL	NULL	1
		Feb	$46760	NULL	NULL	1
		Mar	$51121	NULL	NULL	1
	Q2	Apr	$48309	NULL	NULL	1
		May	$52009	NULL	NULL	1
		Jun	$53465	NULL	NULL	1
	Q3	Jul	$52089	NULL	NULL	1
		Aug	$54118	NULL	NULL	1
		Sep	$51546	NULL	NULL	1
	Q4	Oct	$52650	NULL	NULL	1
		Nov	$48131	NULL	NULL	1
		Dec	$59341	NULL	NULL	1
1999	Q1	Jan	$67887	$50889	33.40	3
		Feb	$54163	$46760	15.83	7
		Mar	$48799	$51121	-4.54	12
	Q2	Apr	$60895	$48309	26.05	5
		May	$61528	$52009	18.30	6
		Jun	$61276	$53465	14.61	8
	Q3	Jul	$67933	$52089	30.42	4
		Aug	$57168	$54118	5.64	11
		Sep	$57997	$51546	12.51	9
		Oct	$73719	$52650	40.02	1
		Nov	$65851	$48131	36.82	2

The worksheet shows the league table position of sales growth. For example, the Rank Growth value for January 1999 is 3, which means that January was the third best performing month (i.e. the sales growth for the month of January between 1998 and 1999 was the third highest in the league table).

Notes

- Because there are no comparative figures for 1998, the Rank Growth values for 1998 are 1.
- Looking at the example above, you can see that sales growth was highest between October 1998 and October 1999 (40.02%)
- For more information about the calculation Previous Year, see "Example: Compare sales figures across time using LAG/LEAD".
- For more information about the calculation Growth, see "Example: Calculate sales growth across time".

Statistical function examples

About statistics functions

Statistics functions are used to compute covariance, correlation, and linear regression statistics. Each function operates on an unordered set. They also can be used as windowing and reporting functions.

Examples:

"Example: Calculate linear regression"

Example: Calculate linear regression

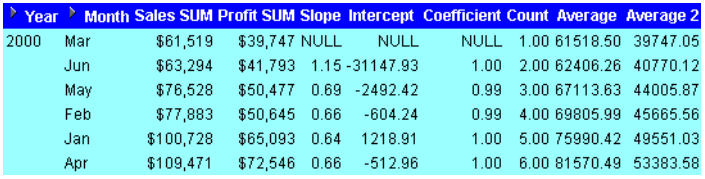
This example computes an ordinary least-squares regression line that expresses the Profit SUM per month as a linear function of its Sales SUM. The following functions are used:

- SLOPE - slope of determination of the regression line
- INTERCEPT - intercept of determination of the regression line
- REGR_R2 - coefficient of determination of the regression line
- REGR_COUNT - number of items
- REGR_AVGX - average sales
- REGR_AVGY - average profit

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Calendar Month, Sales SUM, Profit SUM
Sort Order	Calendar Year
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000

Worksheet options	Set to:
Calculations	Slope = REGR_SLOPE(Profit SUM,Sales SUM) OVER(PARTITION BY Calendar Year ORDER BY Profit SUM) Intercept = REGR_INTERCEPT(Profit SUM,Sales SUM) OVER(PARTITION BY Calendar Year ORDER BY Profit SUM) Coefficient = REGR_R2(Profit SUM,Sales SUM) OVER(PARTITION BY Calendar Year ORDER BY Profit SUM) Count = REGR_COUNT(Profit SUM,Sales SUM) OVER(PARTITION BY Calendar Year ORDER BY Profit SUM) Average = REGR_AVGX(Profit SUM,Sales SUM) OVER(PARTITION BY Calendar Year ORDER BY Profit SUM) Average 2 = REGR_AVGY(Profit SUM,Sales SUM) OVER(PARTITION BY Calendar Year ORDER BY Profit SUM)

Figure 20–26 Worksheet containing the statistical calculations



Year	Month	Sales SUM	Profit SUM	Slope	Intercept	Coefficient	Count	Average	Average 2
2000	Mar	$61,519	$39,747	NULL	NULL	NULL	1.00	61518.50	39747.05
	Jun	$63,294	$41,793	1.15	-31147.93	1.00	2.00	62406.26	40770.12
	May	$76,528	$50,477	0.69	-2492.42	0.99	3.00	67113.63	44005.87
	Feb	$77,883	$50,645	0.66	-604.24	0.99	4.00	69805.99	45665.56
	Jan	$100,728	$65,093	0.64	1218.91	1.00	5.00	75990.42	49551.03
	Apr	$109,471	$72,546	0.66	-512.96	1.00	6.00	81570.49	53383.58

The worksheet shows for each month the slope, intercept, coefficient, count, and average values.

Notes

- For more information about regression analysis, refer to *Oracle8i SQL Reference* and *Oracle8i Data Warehousing Guide.*

More about analytic functions expressions

When you select an analytic function in the "New Calculation dialog", Discoverer types generic text into the **Calculation** field to help you define the function. This generic text includes:

OVER (PARTITION BY expr1 ORDER BY expr2)

The expressions are used as follows.

- OVER - indicates that the function operates on a query result set, after the other query clauses have been applied (e.g. FROM, WHERE, HAVING).

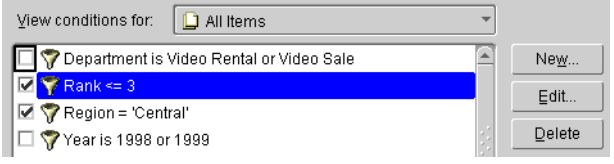
- PARTITION BY - partition (or group) the query results set (e.g. PARTITION BY ‘Region’).
- ORDER BY - specify how the results set is logically ordered (e.g. ORDER BY ‘Sales SUM’).

For more information about Oracle expressions, see "About getting more information".

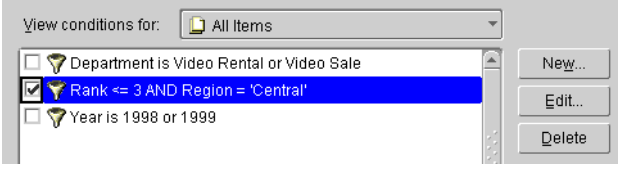
About analytic functions and sequencing

When you use analytic functions in conditions, the way that you combine them with non-analytic functions affects the Discoverer data returned by the query. The following sequencing rules apply (for more information, see "Examples of sequencing"):

- Where conditions contain only non-analytic functions, these are applied before conditions that contain analytic functions.
  In the example below, the ‘Region = ‘Central’ condition is applied first, then the rank is computed, then the ‘Rank <= 3’ condition is applied (which contains an analytic function).



- Where conditions contain a combination of non-analytic functions and analytic functions, the analytic functions are applied before the non-analytic functions.
  In the example below, the rank is evaluated, then the ‘Rank <= 3’ condition is applied, then the ‘Region = ‘Central’ condition is applied.



Examples of sequencing

To illustrate how sequencing affects the Discoverer data returned by a query, consider the following two examples:

Example one

In the first scenario, we apply two single conditions: Region = 'Central', and Rank <= 3 (where Rank is an analytic function).

- The Region = 'Central' condition is applied first, then Rank <= 3.
- Therefore, only sales figures for the Central region that have a ranking of three or less are included in the Results Set.

Region	Sales	Rank	Results Set
Central	10,000	3	3
Central	8,000	4	
Central	20,000	1	1
Central	10,000	2	2
East	70,000		
East	50,000		

Example two

In the second scenario, we apply a multiple condition: Region = 'Central' AND Rank <= 3 (where Rank is an analytic function).

- The Rank <= 3 condition is applied first, then the Region = 'Central' condition.
- Therefore, only figures in the Central region that have an overall ranking of three or less are included in the Results Set.

Region	Sales	Rank	Results Set
Central	10,000	4	
Central	8,000	5	
Central	20,000	3	3
Central	10,000	4	
East	70,000	1	
East	50,000	2	

Oracle9i analytic function examples

The examples in this section show you how to use the Oracle9*i* analytic functions with Discoverer to perform detailed data analysis.

This section contains the following topics:

Notes

- Examples in this section use a selection of commonly used commands. For a complete list of commands and their full syntax, refer to the *Oracle9i SQL Reference* and the *Oracle9i Data Warehousing Guide*.
- For more information on how to create calculations, see "Using calculations".

Hint: You can also use analytic function templates to quickly and easily create calculations based on the most popular analytic functions (for more information, see "How to create a new calculation using an analytic function template".

About getting more information

For more information about Oracle9*i* functions, refer to the following Oracle publications:

- *Oracle9i SQL Reference*
- *Oracle9i Data Warehousing Guide*

About inverse percentile examples

You use inverse percentile functions to work out what value computes to a certain percentile (i.e. the cumulative distribution of a set of values). For example, to calculate the median (i.e. middle value in a series) profit value.

Examples:

Inverse percentile functions can be used as window reporting functions and aggregate functions.

Two inverse percentile functions are available:

1. PERCENTILE_CONT - a continuous function defined by interpolation (i.e. an estimate of a value of a function or series between two known values). Here, the function computes the percentile by linear interpolation between ordered rows.
2. PERCENTILE_DISC is a step function that assumes discrete values. Here, the function scans the cumulative distribution value (using CUME_DIST) in each group to find the first value greater than or equal to the specified percentile value.

Note: Inverse percentile functions do the opposite of the CUME_DIST function, which works out the cumulative distribution of a set of values.

About differences between PERCENTILE_CONT and PERCENTILE_DISC

PERCENTILE_CONT and PERCENTILE_DISC might return different results, depending on the number of rows in the calculation. For example, if the percentile value is 0.5, PERCENTILE_CONT returns the average of the two middle values for groups with even number of elements. In contrast, PERCENTILE_DISC returns the value of the first one among the two middle values. For aggregate groups with an odd number of elements, both functions return the value of the middle element.

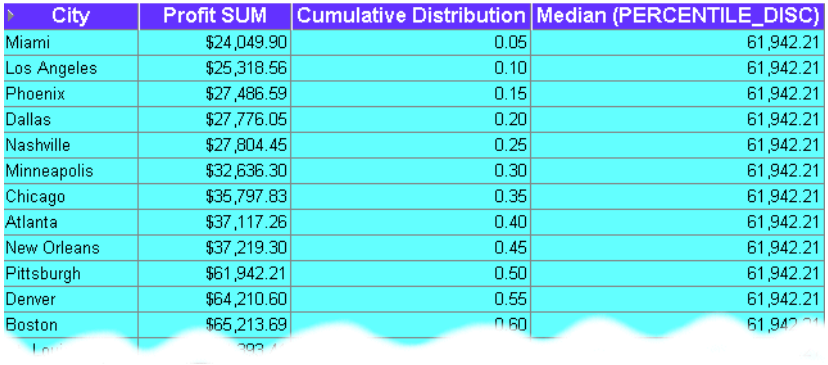
Example: Compute the median profit using the PERCENTILE_DISC function

This example computes the median profit value for cities using the PERCENTILE_ DISC function as a reporting aggregate function.

Worksheet options	Set to:
Items	Video Analysis Information: City, Profit SUM
Sort Order	Not applicable
Conditions	Not applicable
Calculation Name	Median (PERCENTILE_DISC)
Calculation	PERCENTILE_DISC(0.5) WITHIN GROUP(ORDER BY Profit SUM) OVER()

Worksheet options	Set to:
Additional Calculations Required	Cumulative Distribution = CUME_DIST() OVER(ORDER BY Profit SUM)

Figure 20–27 Worksheet containing the Median(PERCENTILE_DISC) calculation



City	Profit SUM	Cumulative Distribution	Median (PERCENTILE_DISC)
Miami	$24,049.90	0.05	61,942.21
Los Angeles	$25,318.56	0.10	61,942.21
Phoenix	$27,486.59	0.15	61,942.21
Dallas	$27,776.05	0.20	61,942.21
Nashville	$27,804.45	0.25	61,942.21
Minneapolis	$32,636.30	0.30	61,942.21
Chicago	$35,797.83	0.35	61,942.21
Atlanta	$37,117.26	0.40	61,942.21
New Orleans	$37,219.30	0.45	61,942.21
Pittsburgh	$61,942.21	0.50	61,942.21
Denver	$64,210.60	0.55	61,942.21
Boston	$65,213.69	0.60	61,942.21

The worksheet shows the median profit value for cities. The median profit value (i.e. 0.50 in the Cumulative Distribution column) is $61,942,21 (i.e. the value for Pittsburgh, which has the value 0.50 in the Cumulative Distribution column).

Notes

- On table worksheets, the calculation displays the returned value for each row in the worksheet. To return a single value, move the calculation into the Page Items area.

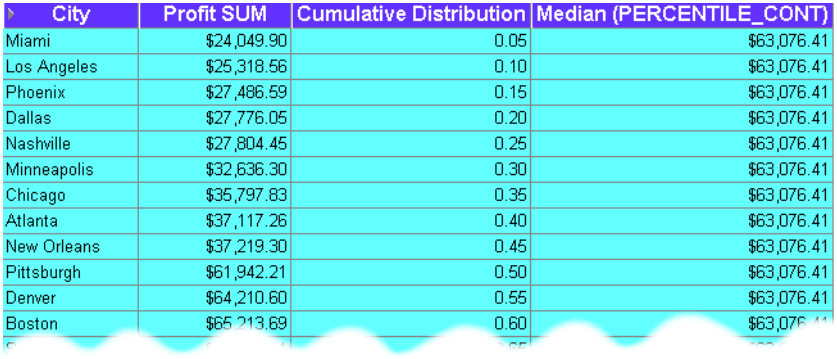
Example: Compute the median profit using the PERCENTILE_CONT function

This example computes the median profit value for cities using the PERCENTILE_CONT function as a reporting aggregate function.

Worksheet options	Set to:
Items	Video Analysis Information: City, Profit SUM
Sort Order	Not applicable
Conditions	Not applicable
Calculation Name	Median (PERCENTILE_CONT)

Worksheet options	Set to:
Calculation	PERCENTILE_CONT(0.5) WITHIN GROUP(ORDER BY Profit SUM) OVER()

Figure 20–28 Worksheet containing the Median(PERCENTILE_CONT) calculation



City	Profit SUM	Cumulative Distribution	Median (PERCENTILE_CONT)
Miami	$24,049.90	0.05	$63,076.41
Los Angeles	$25,318.56	0.10	$63,076.41
Phoenix	$27,486.59	0.15	$63,076.41
Dallas	$27,776.05	0.20	$63,076.41
Nashville	$27,804.45	0.25	$63,076.41
Minneapolis	$32,636.30	0.30	$63,076.41
Chicago	$35,797.83	0.35	$63,076.41
Atlanta	$37,117.26	0.40	$63,076.41
New Orleans	$37,219.30	0.45	$63,076.41
Pittsburgh	$61,942.21	0.50	$63,076.41
Denver	$64,210.60	0.55	$63,076.41
Boston	$65,213.69	0.60	$63,076.41

The worksheet shows the median profit value for cities. The median profit value is $63,076.41, which is the average profit value for the 0.50 and 0.55 percentile. In other words, the value for Pittsburgh plus the value for Denver, divided to two ($61,942.21 + $64,210.60) / 2. For more information about how this function is calculated, see "About differences between PERCENTILE_CONT and PERCENTILE_DISC".

Notes

- If the number of rows in the calculation is even, the two middle results are averaged. In the example above, the values for the .50 and .55 percentile are averaged.
- On table worksheets, the calculation displays the returned value for each row in the worksheet. To return a single value, move the calculation into the Page Items area.

Hypothetical rank and distribution examples

You use hypothetical rank and distribution functions for 'what-if?' analysis. These functions work out the position of a value if the value was inserted into a set of

other values. For example, where would a person who generated sales of $1,200,000 be positioned in a league table of sales peoples' performance.

Note: You can also calculate the hypothetical values of the following:

- DENSE_RANK - computes the rank of values where equal values receive the same rank (e.g. you can have more than one value ranked as top of the league)
- CUME_DIST - computes the relative position of a specified value in a group of values
- PERCENT_RANK - similar to CUME_DIST, this function calculates the rank of a value minus 1, divided by 1 less than the number of rows being evaluated

Examples:

- "Example: Calculate hypothetical rank"

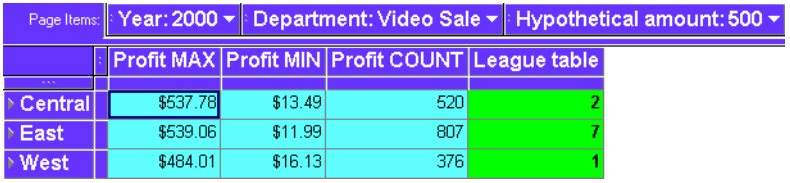
Example: Calculate hypothetical rank

This example calculates the hypothetical rank of profit values in relation to profit values for departments and regions. For example, to answer the question, how would a sales value of $500.00 be positioned in a league table of values for the Video Sale department in each region?

Note: This example uses a parameter to provide dynamic input to the calculation (for more information see "About using parameters to provide dynamic input to calculations").

Worksheet options	Set to:
Items	Video Analysis Information: Calendar Year, Region, Department, Profit, Profit COUNT, Profit MAX, Profit MIN
Sort Order	Region (Lo to Hi)
Conditions	Not applicable
Page Items	Calendar Year=2000, Department=Video Sale, Value of Parameter Hypothetical Value=500
Parameters	Hypothetical Value - this value is entered by the Discoverer user when the worksheet is opened or refreshed.
Calculation Name	League table
Calculation	RANK(:Hypothetical Value) WITHIN GROUP(ORDER BY Profit DESC NULLS FIRST)

Figure 20–29 Worksheet containing the League table calculation



Page Items:	Year: 2000	Department: Video Sale	Hypothetical amount: 500

	Profit MAX	Profit MIN	Profit COUNT	League table
Central	$537.78	$13.49	520	2
East	$539.06	$11.99	807	7
West	$484.01	$16.13	376	1

- The worksheet shows where the hypothetical value of $500 would rank in a league table of regions:
  - The hypothetical profit amount of $500 would rank number 2 in the Central region containing 520 profit values (range $13.49 to $537.78).
  - The hypothetical profit amount of $500 would rank number 7 in the East region containing 807 values (range $11.99 to $539.06).

    Notice that because the hypothetical amount ($500) is greater than the Profit MAX amount in the West region ($484.01), the amount $500 has the hypothetical rank of number 1 for the West region.

Notes

- The items Profit COUNT, Profit MAX, Profit MIN are not used in the calculation. They are displayed on the worksheet to help illustrate how the function is working. For example, if you can see that the Profit MAX value is $484.01 in the West region, you can see why a hypothetical value of $500.00 ranks as 1. This is because the hypothetical value is greater than the maximum value (i.e. the item Profit MAX).
- The League table calculation uses the value of the :Hypothetical Value parameter, entered when the worksheet is opened or refreshed. In the example below, the Hypothetical Value (displayed in the Hypothetical amount page item) is set to 500. For more information about using parameter values in calculations, see "About using parameters to provide dynamic input to calculations".
- The Rank function must take a non-aggregated value as an ORDER BY argument. For example, you could not perform this function on SUM(Profit) or Profit AVG.
- As an alternative to setting the Hypothetical Value as a parameter, you could enter the rank value directly into the calculation as the Rank() argument. For example:

RANK(500) WITHIN GROUP(ORDER BY Profit DESC NULLS FIRST)

- If you do not use a parameter, you will have to change the calculation to change the hypothetical value.

Banding example

You use the Oracle9*i* WIDTH_BUCKET function to divide values into groups (sometimes called bands or buckets) according to their value (for more information, see "About banding"). For example, to group data for a bar graph.

Hint: You can also use the GREATEST and the CASE functions to calculate equi-width bands (see "Example: Banding by value (1)" and "Example: Banding by value (2)".

Examples:

- "Example: Producing equi-width bands using WIDTH_BUCKET"

Example: Producing equi-width bands using WIDTH_BUCKET

This example divides profit figures into three bands according to their value.

Worksheet options	Set to:
Items	Video Analysis Information: City, Profit SUM
Sort Order	Equi-width bands
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Region = Central
Calculation Name	Equi-width bands
Calculation	WIDTH_BUCKET(Profit SUM,0,30000,3)

Figure 20–30 Worksheet containing the Equi-width bands calculation

City	Profit SUM	Equi-width bands
Cincinnati	$29,478	3
Louisville	$23,096	3
St. Louis	$16,300	2
Nashville	$5,945	1
Minneapolis	$7,046	1
Dallas	$5,777	1
Chicago	$7,010	1

The worksheet shows equi-width bands for profit values for cities. The first band (0 to 9,999) contains Nashville, Minneapolis, Dallas, and Chicago. The second band (10,000 to 19,999) contains St. Louis. The third band (20,000 to 30,000) contains Cincinnati and Louisville.

Notes

- The WIDTH_BUCKET function takes four arguments:
  - worksheet item = Profit SUM
  - minimum value = 0
  - maximum value = 30000
  - number of bands = 3
- To assign bands in reverse order, reverse the minimum and maximum values. For example, WIDTH_BUCKET(Profit SUM,30000,0,3). This function produces the worksheet below.

Figure 20–31 Worksheet containing the Equi-width bands calculation with reversed order

City	Profit SUM	Equi-width bands
Cincinnati	$29,478	1
Louisville	$23,096	1
St. Louis	$16,300	2
Chicago	$7,010	3
Dallas	$5,777	3
Minneapolis	$7,046	3
Nashville	$5,945	3

The worksheet shows equi-width bands for profit values for cities. The first band (20,000 to 30,000) contains Cincinnati and Louisville. The second band (10,000 to 19,999) contains St. Louis. The third band (0 to 9,999) contains Chicago, Dallas, Minneapolis, and Nashville.

FIRST/LAST aggregate examples

You use FIRST/LAST aggregate functions to find the first or last value within an ordered group. This enables you to order data on one column but return another column. For example, to find the average sales transaction amount for the region with the largest number of sales transactions in a period.

Examples:

- "Example: Find the largest sales transactions in area with most sales trans'"
- "Example: Find the average sales transaction in area with least sales trans'"

Using FIRST/LAST functions maximizes Discoverer performance by avoiding the need to perform self-joins or sub-queries.

Note: You can use FIRST/LAST functions with the following:

- MIN - find the smallest value in a list of values
- MAX - find the largest value in a list of values
- AVG - find the average value of a list of values
- STDDEV - find the standard deviation of a list of values
- VARIANCE - find the variance of a list of values

Example: Find the largest sales transactions in area with most sales trans'

This example finds the largest sales transaction amount for the city with the most sales transactions in a period.

Worksheet options	Set to:
Items	Video Analysis Information: City, Sales MAX, Sales Count
Sort Order	Not applicable
Conditions	Department = Video Sale OR Department = Video Rental Calendar Year = 2000 Region = Central
Calculation Name	Maximum sales in city with largest sales volume

Worksheet options	Set to:
Calculation	MAX(Sales MAX) KEEP(DENSE_RANK LAST ORDER BY Sales COUNT) OVER(PARTITION BY "Calendar Year", Region)

Figure 20–32 Worksheet containing the Maximum sales in city with largest sales volume calculation

City	Sales MAX	Sales COUNT	Maximum sales in city with largest sales volume
St. Louis	$741.70	589	$667.53
Louisville	$699.72	1035	$667.53
Chicago	$667.53	288	$667.53
Dallas	$667.53	266	$667.53
Cincinnati	$667.53	1220	$667.53
Nashville	$519.19	219	$667.53
Minneapolis	$445.02	277	$667.53

The worksheet shows the largest sales transaction value in the city with the largest number of sales transactions. Cincinnati has the largest number of sales transactions (1220). The largest sales transaction for Cincinnati is $667.53.

Notes

- Sales MAX - contains the largest sales transaction amount.
- Sales COUNT - contains the number of sales transactions in the period.
- To apply the function, Discoverer does the following:
  - orders the Sales COUNT column in the database (default order is ascending)
  - takes the last value in Sales COUNT column (i.e. the LAST argument), which is the largest number, and looks up the city name for this row (Cincinnati)
  - orders transactions in the database for Cincinnati and returns the LAST value, $667.53 (the default order is ascending)
- The Sales COUNT and Sales MAX items are included to demonstrate that the calculation returns the correct result. The Sales COUNT and Sales MAX items are not used to calculate the result, which is calculated using aggregation in the database.
- **Hint:** On table worksheets, the calculation displays the returned value for each row in the worksheet. To return a single value, move the calculation into the Page Items area.

Example: Find the average sales transaction in area with least sales trans'

This example calculates the average sales transaction amount for the city with the smallest number of sales transactions in a period.

Worksheet options	Set to:
Items	Video Analysis Information: City, Sales COUNT, Sales AVG
Sort Order	Not applicable
Conditions	Department = Video Sale OR Department = Video Rental Region = Central Calendar Year = 2000
Calculation Name	Average sales in city with smallest sales volume
Calculation	MIN(Sales AVG) KEEP(DENSE_RANK FIRST ORDER BY Sales COUNT) OVER(PARTITION BY "Calendar Year", Region)

Figure 20–33 Worksheet containing the Average sales in city with smallest sales volume calculation

City	Sales COUNT	Sales AVG	Average sales in city with smallest sales volume
Chicago	288	$35.53	$38.39
Cincinnati	1220	$39.65	$38.39
Dallas	266	$31.84	$38.39
Louisville	1035	$35.29	$38.39
Minneapolis	277	$37.10	$38.39
Nashville	219	$38.39	$38.39
St. Louis	589	$40.19	$38.39

The worksheet shows the average sales transaction value in the city with the smallest number of sales transactions. Nashville has the smallest number of transactions in the period (219). Therefore, the calculation returns the average transaction value for Nashville ($38.39).

Notes

- Sales COUNT - contains the number of sales transaction in the period.
- Sales AVG - contains the average sales transaction amount in the period.
- To apply the function, Discoverer does the following:

- orders the Sales COUNT column in the database (default order is ascending)
- takes the first value in Sales COUNT column (i.e. the FIRST argument), which is the smallest number, and looks up the city name for this row (Nashville)
- calculates the average sales value for Nashville, $38.39

- The Sales COUNT and Sales AVG items are included to demonstrate that the calculation returns the correct result. The Sales COUNT and Sales AVG items are not used to calculate the result, which is calculated using aggregation in the database.
- **Hint:** On table worksheets, the calculation displays the returned value for each row in the worksheet. To return a single value, move the calculation into the Page Items area.

Examples of using row-based and time-based intervals

The examples in this section show you how to use analytic functions with row-based and time-based intervals to get the best results with Discoverer. For example, you might was to create a calculation that returns the value of the previous row, or the value one year previously.

Note: Using row-based and time-based intervals is also known as windowing. For more information about windowing, see "About windowing". For more examples of using windowing in Discoverer, see "Windowing function examples".

The examples use analytic functions created using Discoverer's analytic functions templates. Each example shows how selecting intervals in the **Restart calculation at each change in** list on the analytic function template dialogs affects the calculation. For example, you might specify 1 Month Before Current Value as the interval, to compare sales in one month with sales in another month. For more information about creating calculation formulas using analytic function templates, see "How to create a new calculation using an analytic function template".

Note: If you are entering analytic function text in the **Calculation** field manually, you can specify an interval by adding a PARTITION BY clause to the formula. For more information about creating calculation formulas manually, see "How to create calculations".

This section contains the following examples:

- "Example: Creating a Difference calculation using a row-based interval"

- "Example: Creating a Difference calculation using a time-based interval"
- "Example: Creating a Preceding value calculation using a time-based interval"

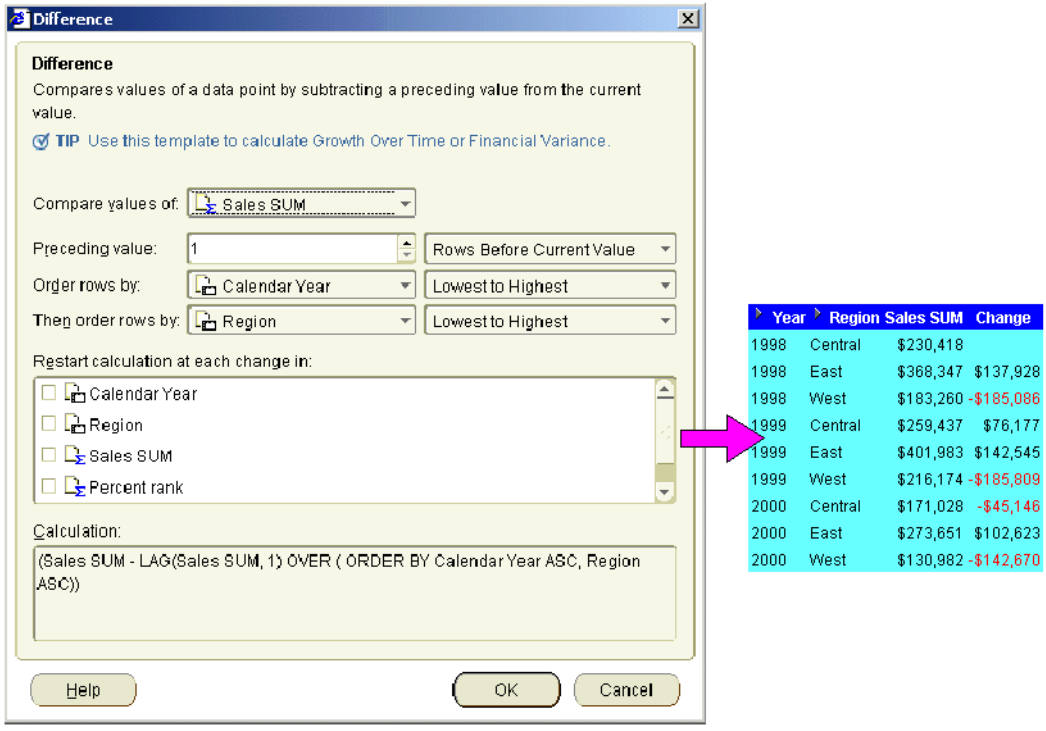
Example: Creating a Difference calculation using a row-based interval

This example uses a difference calculation based on a row-based interval. The example worksheet displays the Year, Region, and Sales SUM items. To return the previous row's value for each sales value, add a calculation called 'Change' to the worksheet using the "Difference dialog", as follows:

- select Sales SUM from the **Compare values of** drop down list
- select the '1' and 'Rows Before Current Value' from the **Preceding value** fields
- select 'Calendar Year' from the **Order rows by** field.
- select 'Region' from the **Then order rows by** field.
- accept default values for the remaining fields

The example worksheet shows the Change item containing the difference formula. For example, the Change column for the West region in 2000 is -$142,670. This value is derived from the West region value for 2000 (i.e. 130,982) minus the East region value for 2000 (i.e. 273,651).

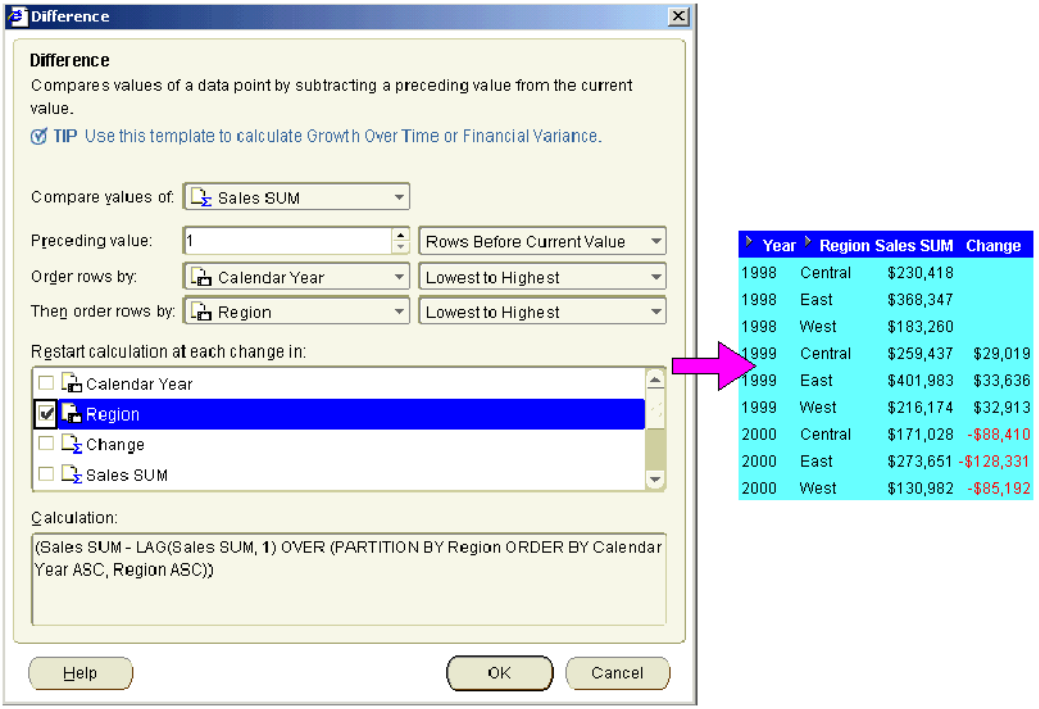
Note: Positive values are shown in black. Negative values are shown in red.



Note: If you selected the Region check box in the **Restart calculation at each change in** list, you would always compare each value with the Sales SUM value for the same region in the previous year.

The example worksheet below shows the Change item containing the difference formula where the Region check box in the **Restart calculation at each change in** list is selected. In other words:

- The Change value for the West region in 2000 is -$85,192. This value is derived from the Sales SUM value for the West region in 2000 (i.e. 130,982) minus the Sales SUM value for the West region in 1999 (i.e. 216.174).
- The Change value for the East region in 2000 is -$128,331. This value is derived from the Sales SUM value for the East region in 2000 (i.e. 273,651) minus the Sales SUM value for the East region in 1999 (i.e. 401,983).



Note: When you choose a row-based interval and select the Region check box in the the **Restart calculation at each change in** list, you compare values with values from the previous year. You can also compare values with values from a previous year using a time-based interval (for more information about using time-based intervals, see "Example: Creating a Difference calculation using a time-based interval").

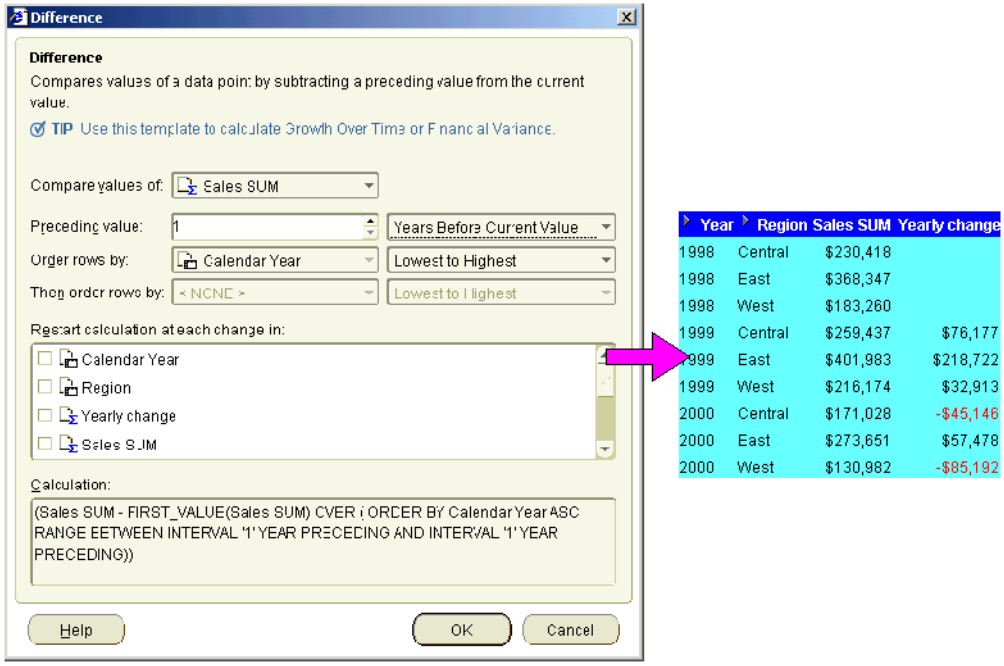
Example: Creating a Difference calculation using a time-based interval

This example uses a difference calculation based on a time-based interval. The example worksheet displays the Year, Region, and Sales SUM items. To calculate the change in sales from the previous year, add a calculation called Yearly change to the worksheet using the "Difference dialog", as follows:

- select Sales SUM from the **Compare values of** drop down list
- select the '1' and 'Years Before Current Value' from the **Preceding value** fields
- select the Region check box in the **Restart calculation at each change in** list
- accept default values for the remaining fields

The example worksheet shows the Yearly change item containing the difference formula. For example, you can see in the Yearly change column that Sales SUM value for the West region in 2000 is $85,192 less that the West region in 1999.

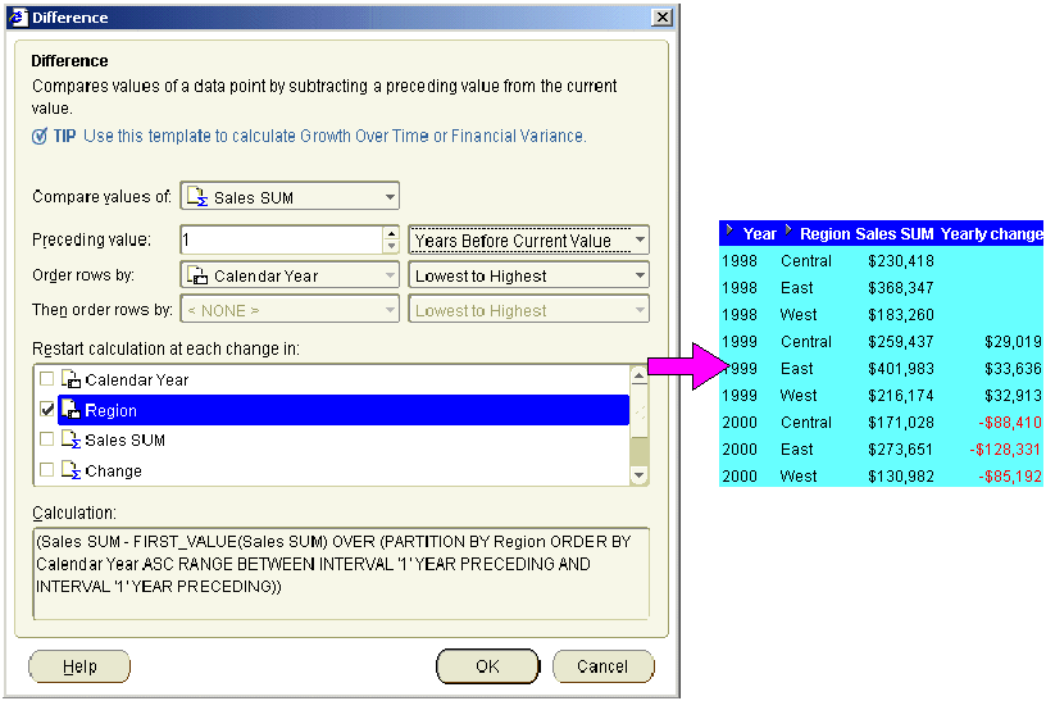
Note: Positive values are shown in black. Negative values are shown in red.



Note: If you did not select the Region check box in the **Restart calculation at each change in** list, you would always compare each value with the Sales SUM value for the last region in the previous year.

The example worksheet below shows the Yearly change item containing the preceding value formula where the Region check box in the **Restart calculation at each change in** list is cleared. In other words:

- The Yearly change value for the West region in 2000 is -$85,192. This value is derived from the Sales SUM value for the West region in 2000 (i.e. 130,982) minus the Sales SUM value for the West region in 1999 (i.e. 216.174).
- The Yearly change value for the East region in 2000 is $57,478. This value is derived from the Sales SUM value for the East region in 2000 (i.e. 273,651) minus the Sales SUM value for the West region in 1999 (i.e. 216.174).

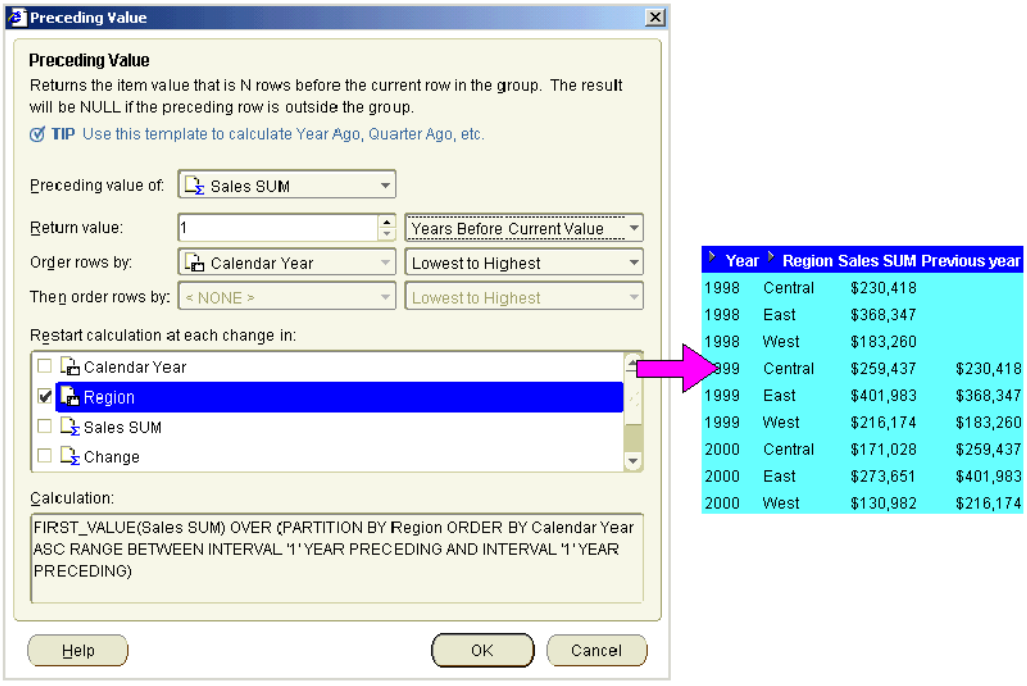


Example: Creating a Preceding value calculation using a time-based interval

This example uses a preceding value calculation based on a time-based interval. The example worksheet displays the Year, Region, and Sales SUM items. To return the previous year's value for each sales value, add a calculation called Previous year to the worksheet using the "Preceding Value dialog", as follows:

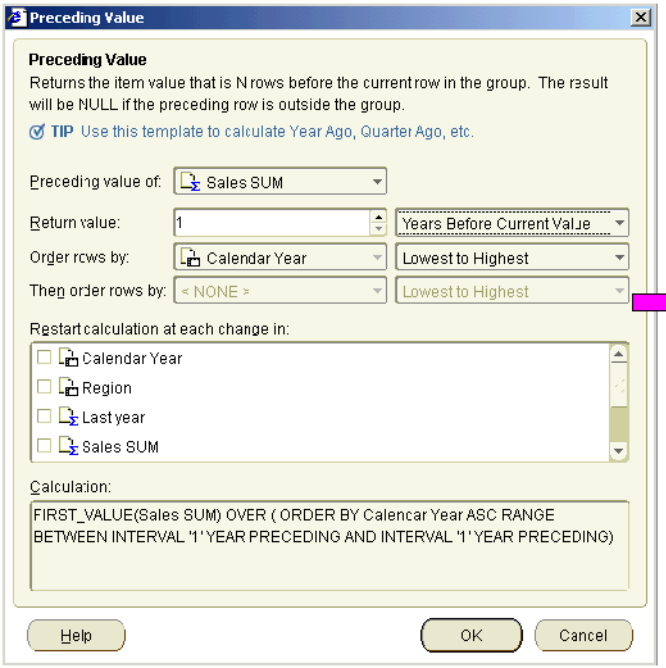
- select Sales SUM from the **Preceding value of** drop down list
- select the '1' and 'Years Before Current Value' from the **Return value** fields
- select the Region check box in the **Restart calculation at each change in** list
- accept default values for the remaining fields

The example worksheet shows the Previous year item containing the preceding value formula. For example, you can see in the Previous year value for the West region in 2000 is $216,174, which is the same as the Sales SUM value for 1999 in the West region.



Note: If you did not select the Region check box in the **Restart calculation at each change in** list, you would always return the Sales SUM value for the last region in the previous year.

The example worksheet below shows the Previous year item containing the preceding value formula where the Region check box in the **Restart calculation at each change in** list is cleared. In other words, the Previous year value for the West, East, and Central regions in 2000 is $216,174, which is the same as the Sales SUM value for 1999 in the West region.



Year	Region	Sales SUM	Previous year
1998	Central	$230,418	
1998	East	$368,347	
1998	West	$183,260	
1999	Central	$259,437	$183,260
1999	East	$401,983	$183,260
1999	West	$216,174	$183,260
2000	Central	$171,028	$216,174
2000	East	$273,651	$216,174
2000	West	$130,982	$216,174

B

Discoverer support for Oracle Applications

Discoverer support for Oracle Applications

This appendix contains the following sections:

What are Oracle Applications?

Oracle Applications are Oracle's integrated enterprise resource planning (ERP) and customer relationship management (CRM) solution. Oracle Applications enable companies to run their entire worldwide operations from a central site. For further information see *http://www.oracle.com/*.

Note: For more information about Oracle Applications mode End User Layers, see *Oracle9i Discoverer Administrator Administration Guide.*

What features does Discoverer support for Oracle Applications users?

Discoverer supports the following features for Oracle Applications users:

- access to Oracle Applications databases using Oracle Applications user names, passwords and responsibilities

- access to Oracle Applications mode EULs
- support for Oracle Applications implementations of multiple organizations and multiple reporting currencies

Notes

- Using Discoverer with Oracle Applications multiple organizations support enables you to work with data from more than one organization. Discoverer end users can query and analyze data from a set of organizations to which they have been granted access. The folders in the EUL you are connecting to must be based on Oracle Business Views (available in Oracle Applications 11*i*).
- Using Discoverer with Oracle Applications multiple reporting currencies enables you to work with data in the appropriate currency based on your assigned Applications user ID and responsibility.
- Contact the Discoverer manager for more information about using Discoverer with an Oracle Applications database.

What are the prerequisites to run Discoverer with Oracle Applications?

To start Discoverer as an Oracle Applications user, the following conditions must be met:

- one of the following Oracle Applications versions must be installed:
  - Release 10.7 (SmartClient and Character mode)
  - Release 11
  - Release 11*i*
- you have created an Applications mode EUL (contact the Discoverer manager for more information about Applications mode EULs)

How to start Discoverer in Oracle Applications mode using an existing connection

Before you can start Discoverer as an Oracle Applications user, certain conditions must be met (for more information, see "What are the prerequisites to run Discoverer with Oracle Applications?").

To start Discoverer in Oracle Applications mode using an existing connection:

1. Launch a Web browser.

2. Go to the Discoverer Web site address given to you by the Discoverer manager.

Note: The Discoverer web site address might be:

- the default web page that you access when you start a browser
- a URL that you type in Internet address field in the browser
- a link from a portal or other internet or intranet site that you are using

The Connect to Discoverer Plus page is displayed (see figure below).

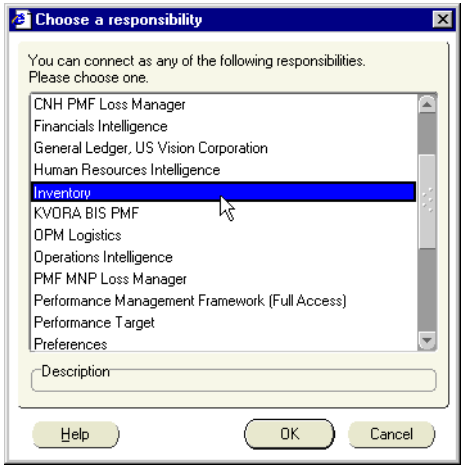
A list of the existing Discoverer connections is displayed in the Connection column.

3. To select a connection and start Discoverer, click a connection name in the Connection column.

Note: If the Oracle Applications username that you are using has only one responsibility assigned to it, Discoverer starts and displays the "Workbook Wizard: Create/Open Workbook dialog". If so, skip step 4 and move to step 5.

If the Oracle Applications username that you are using has more than one responsibility assigned to it, Discoverer displays the "Choose a responsibility dialog".

Figure 20–34 Choose a responsibility dialog



4. (optional) Select a responsibility from the **You can connect as any of the following responsibilities** list and click OK.

   Discoverer starts and displays the "Workbook Wizard: Create / Open Workbook dialog".

5. Follow the steps in the Workbook Wizard to either open a workbook or create a new workbook.

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

Notes

- If the Connections page does not contain an existing connection to an Oracle Applications database, you must create a new connection (for more information, see "How to create a new connection to start Discoverer as an Oracle Applications user").

How to create a new connection to start Discoverer as an Oracle Applications user

You create a Discoverer connection when you want to enter Oracle Applications Discoverer login details and save the details in a connection. Discoverer login details include a database user name, password, database name, and responsibility.

To create a Discoverer connection:

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

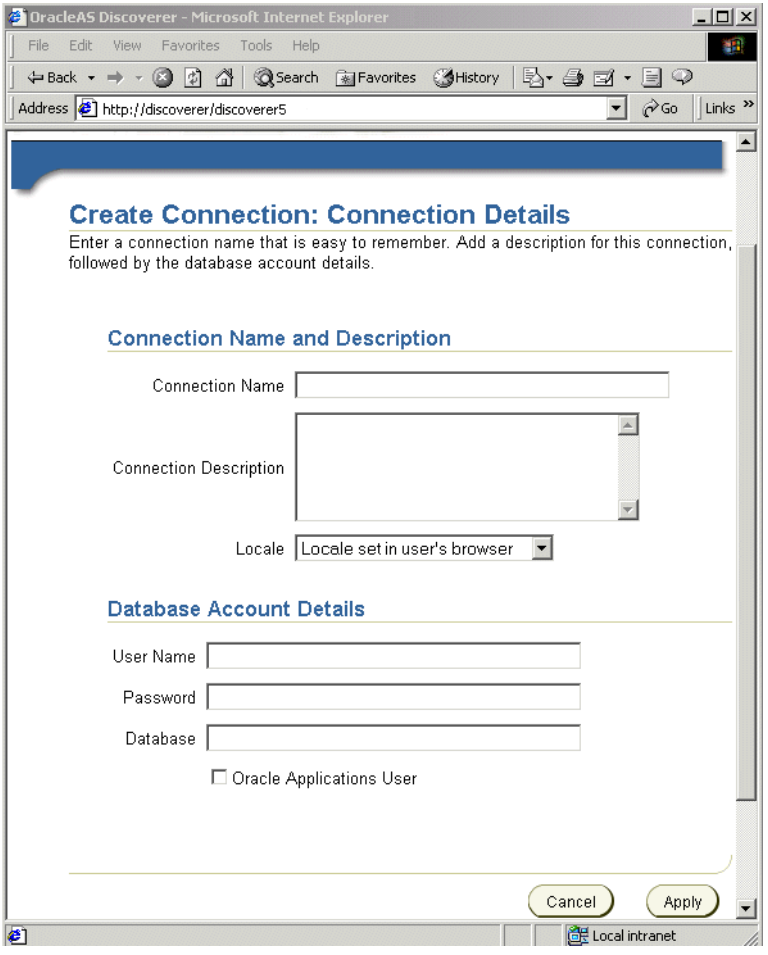
   Note: The Discoverer web site address might be:

   - the default web page that you access when you start a browser
   - a URL that you type in the Internet address field in the browser
   - a link from a portal or other internet or intranet site that you are using

   The Connect to OracleAS Discoverer Viewer/Plus page is displayed. A list of the available Discoverer connections is displayed in the Connection column.

3. Click Create New Connection to display the Create Connection: Connection Details page.

Figure 20–35 The Create Connection: Connection Details page



4. Enter a connection name into the **Connection Name** field.

   This name is used to identify the login details entered, and is displayed in the Connection column on the Connect to Discoverer Plus page.

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

For example, you might want to add hints and tips about which workbooks the connection is used for.

6. Select the language that you want to use from the **Locale** drop down list.
7. Using the Discoverer connect details given to you by the Discoverer manager, specify the Oracle Applications **User Name**, **Password**, and **Database** details for the connection that you want to create.
8. Select the **Oracle Applications User** check box.
9. Click Apply to save the details entered.

   The Select Oracle Applications Responsibility page is displayed.
10. Select a responsibility from the **Oracle Applications** drop down list.
11. Click Apply to save the details specified.
12. (optional) If the user name has access to more than one End User Layer, 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.

       Note: Contact the Discoverer manager for information about which End User Layer to select.

    b. Click Apply to save the details specified.

    The Connect to Discoverer Plus page is displayed. The new connection that you have just created is displayed in the list of connections.

Notes

- To connect to Discoverer using a new connection that you have just created, click the Discoverer connection name in the **Connection** list.

Glossary

Analytic functions

Analytic functions compute an aggregate value based on a group of rows. The group of rows is called a window and is defined by the analytic clause. Analytic functions differ from aggregate functions in that they return one value for each row. For example, if you create a ranking function, you create a rank value for each row.

For more information about Oracle9*i* functions, refer to *Oracle9i SQL Reference* or *Oracle9i Data Warehousing Guide.*

Business area

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.

Calculation

Calculations are worksheet items based on formulas or expressions (e.g. mathematical formulas, text handling functions, analytic functions).

Condition

Conditions are worksheet items that enable you to select what data to display on worksheets. Conditions filter out data that you are not interested in, enabling you to concentrate on data that you want to analyze. For example, you might use a condition to display only data for the month January.

Item

Items are different types of information stored in a folder. For example, if a Products folder contains reference numbers, descriptions, and the price of each product, the items in the Products folder are reference number, description, and price.

List of values

A List of values (LOV) is a list of valid values for an item. For example, a LOV for a year item might contain the values 1998, 1999, and 2000.

Page Item

A page item is a filtering item located above a worksheet in the Page Items area. Page items enable you to look at one area of information at a time. For example, if an item called Month is placed in the Page Items area, you might select January from the page item drop down list to produce a January report, then select February to produce a February report and so on.

Parameter

Parameters are workbook items that enable Discoverer end users to specify dynamic input values that are used to analyze worksheets. Input values are typically used to:

- provide input to conditions that are used to filter worksheets - for example, when a workbook or worksheet is opened or refreshed, the parameter is used to first ask the worksheet user 'What month do you want to analyze?'. A worksheet user can choose to look at data for the month of January only.
- provide input to calculations - for example, a worksheet user can enter the value '3' when prompted, which is then used to divide data into three bands using a predefined calculation containing a banding function

Query

A query is a question that Discoverer asks the database in order to get the data that you want to analyze.

Every time you open a worksheet or create a new worksheet, Discoverer sends a query to your company's database. For example, how did Product A sell last month?

Note: Queries are written in Structured Query Language (SQL), a language that databases understand. You do not need to understand SQL to communicate with the database - Discoverer writes the SQL query for you!

Workbook

Workbooks are Discoverer files that contain worksheets displaying data retrieved from the database.

If you are familiar with spreadsheet applications (e.g. Microsoft Excel), think of a workbook as a spreadsheet file.

Worksheet

Worksheets contain the data that you want to analyze, together with a number of Discoverer components to help you analyze the data. For example, a worksheet can contain parameters, totals, percentages, exceptions, and calculations.

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

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