Analyzing data

This part explains the analysis tools available in Discoverer Plus Relational (for example, pivoting, drilling, sorting) and explains how to create powerful worksheets using parameters, conditions, percentages, totals, and calculations.

Pivoting data

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

About pivoting worksheet items

You pivot worksheet items to arrange data on a crosstab worksheet for more effective analysis. For example, on a crosstab worksheet you might move an item from the left axis to the top axis to analyze new data relationships.

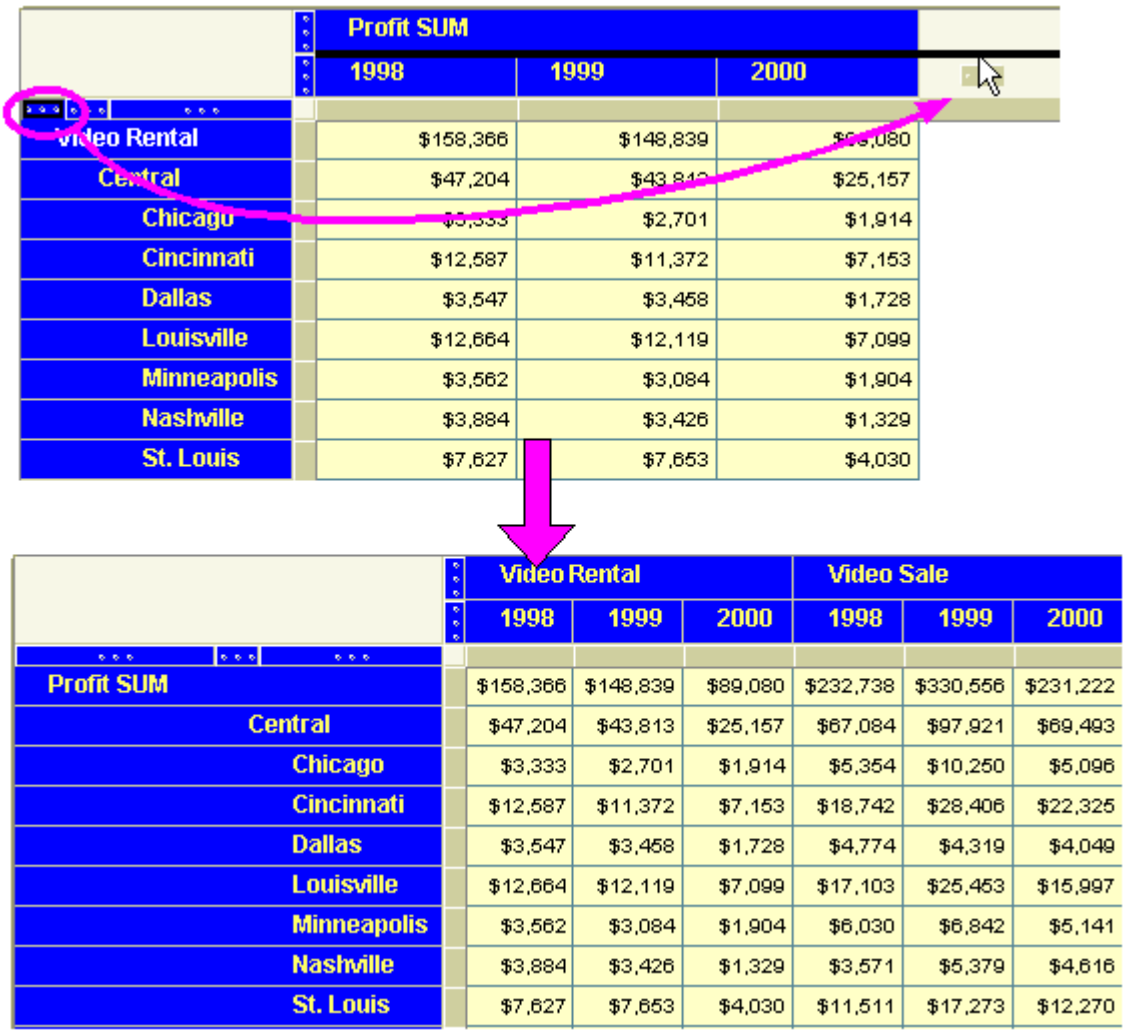
Pivoting is a powerful analysis tool enabling you to explore data relationships that might initially be hidden.

You can pivot worksheet data in the following ways:

- in the Discoverer work area, you can drag and drop a worksheet item heading into a different position and see the new data layout instantly

  In the example below, the Department item is dragged from the left axis to the top axis in the Discoverer work area.

Pivoting in the Discoverer work area

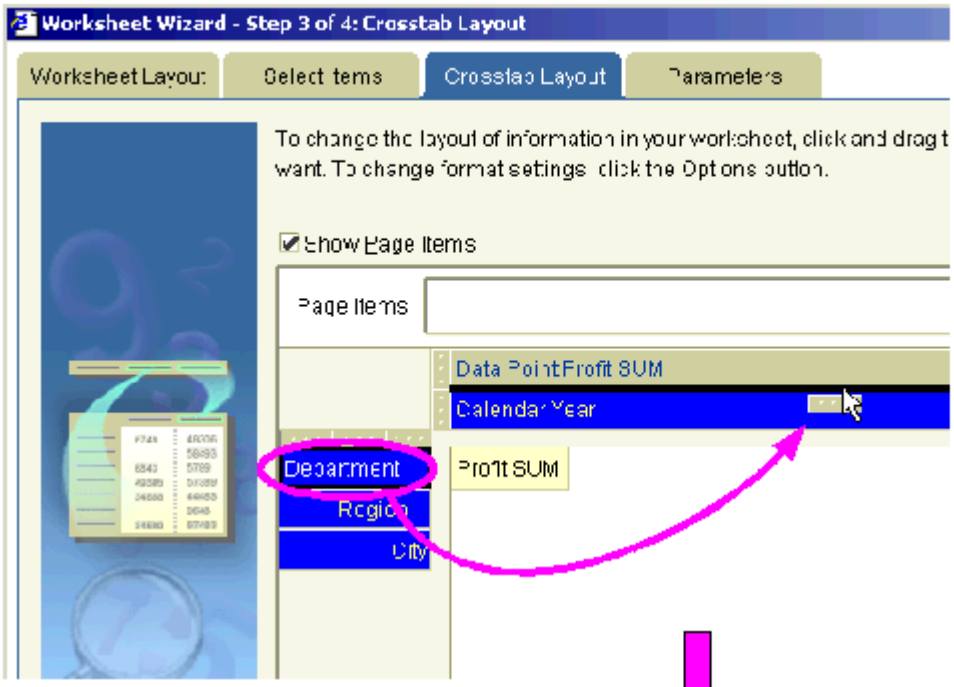


For more information about pivoting worksheet items in the Discoverer work area, see "How to pivot worksheet items in the Discoverer work area".

- in the Edit Worksheet dialog (that is, in worksheet design mode), you can drag and drop a worksheet item into a different position and see the new data layout when you close the Edit Worksheet dialog and display the Discoverer work area.

  In the example below, the Department item is dragged from the left axis to the top axis using the Edit Worksheet dialog: Table Layout tab.

Pivoting in the Edit Worksheet dialog: Crosstab Layout tab



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

For more information about pivoting worksheet items using the Edit Worksheet dialog, see "How to pivot worksheet items using the Edit Worksheet dialog".

About pivoting data on a crosstab worksheet

On crosstab worksheets, you can pivot items to and from the left axis and top axis.

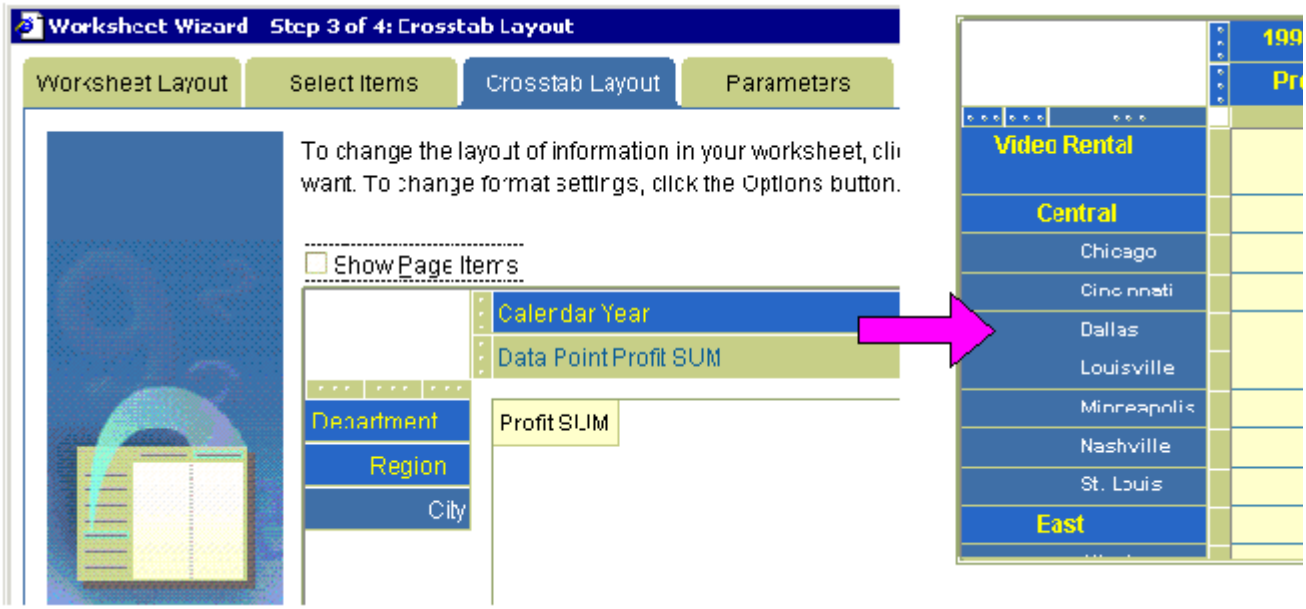
Because the data relationships on a crosstab depend on the intersection of the rows and columns, pivoting data from one axis to another creates a new set of data relationships.

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 (for example, Region, City, and Store Name), pivoting the Year item to the side axis adds a fourth level of data to that axis.

The figure below shows how you might use the Crosstab layout dialog to arrange worksheet data, by positioning items as follows:

- Calendar Year and Profit SUM items are placed on the top axis
- Department, Region, and City items are placed on the left axis

Laying out data on a crosstab worksheet



How to pivot worksheet items in the Discoverer work area

You pivot worksheet items in the Discoverer work area to rearrange items on a worksheet. For example, you might want to move a Department item to the Page Items area so that you can analyze individual departments.

To pivot worksheet items in the Discoverer work area:

1. Display the worksheet you want to analyze.
2. Select the grab handle of the worksheet item you want to pivot.

	Profit SUM		
	1998	1999	2000
Video Rental	$158,366	$148,839	$89,080
Central	$47,204	$43,813	$25,157
Chicago	$3,333	$2,701	$1,914
Cincinnati	$12,587	$11,372	$7,153
Dallas	$3,547	$3,458	$1,728
Louisville	$12,664	$12,119	$7,099
Minneapolis	$3,562	$3,084	$1,904
Nashville	$3,884	$3,426	$1,329
St. Louis	$7,627	$7,653	$4,030
East	$71,766	$67,249	$40,402
Atlanta	$2,865	$2,468	$1,635
Boston	$6,998	$6,423	$3,285

3. Drag the grab handle to the required position and release the mouse button.

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

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

Discoverer repositions the worksheet item as you specified.

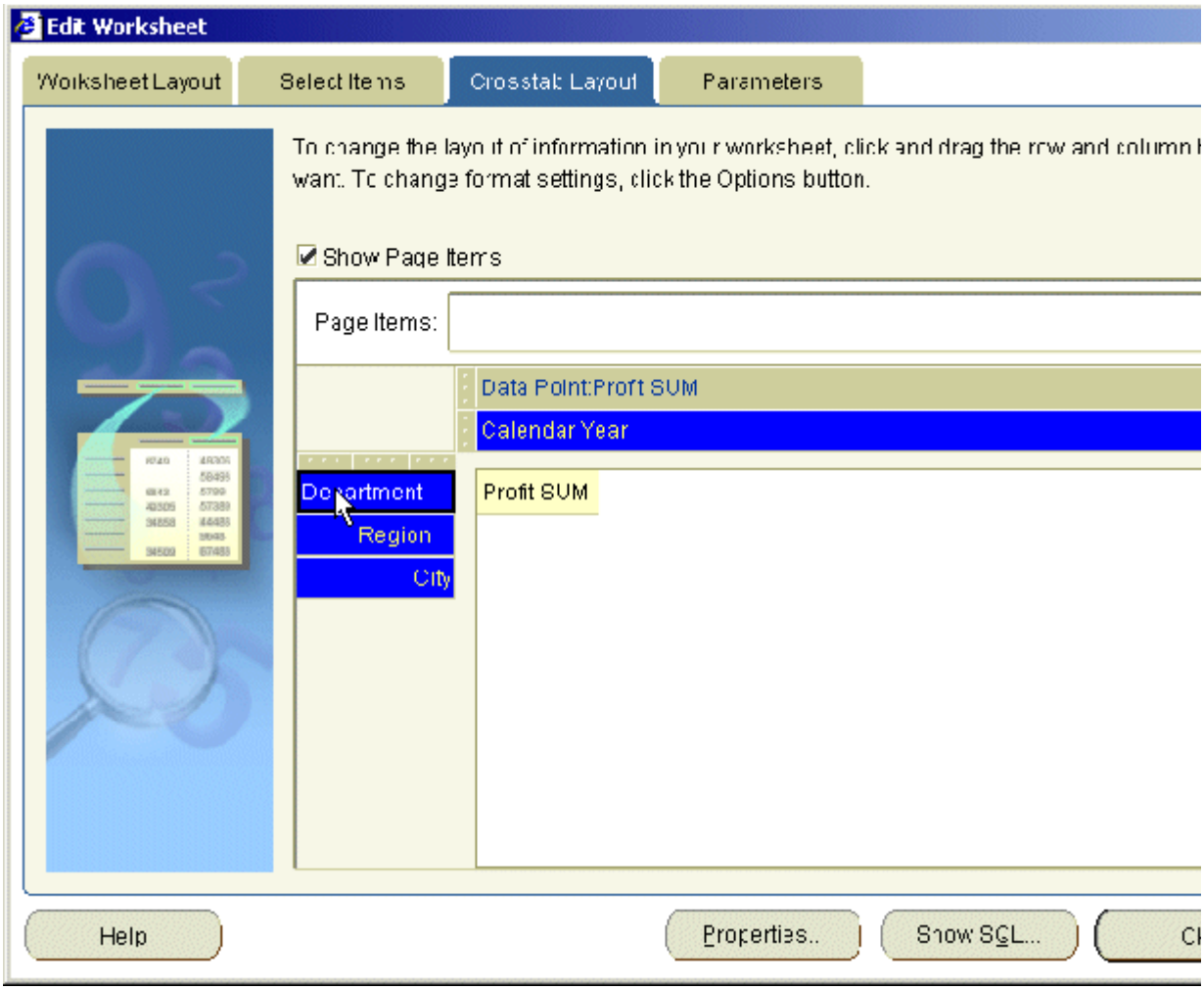
		Video Rental			Video Sale		
		1998	1999	2000	1998	1999	2000
Profit SUM		$158,366	$148,839	$89,080	$232,738	$330,556	$231,222
	Central	$47,204	$43,813	$25,157	$67,084	$97,921	$69,493
	Chicago	$3,333	$2,701	$1,914	$5,354	$10,250	$5,096
	Cincinnati	$12,587	$11,372	$7,153	$18,742	$28,406	$22,325
	Dallas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

How to pivot worksheet items using the Edit Worksheet dialog

You pivot worksheet items using the Edit Worksheet dialog to rearrange items in worksheet design mode. In the Edit Worksheet dialog, you see only item headings, not the data itself. For example, you might have a large worksheet that is difficult to edit in the Discoverer work area because you cannot see all worksheet items in the same window.

To pivot worksheet items using the Edit Worksheet dialog:

1. Display the worksheet you want to analyze.
2. Choose Edit | Crosstab to display the "Edit Worksheet dialog: Crosstab Layout tab".

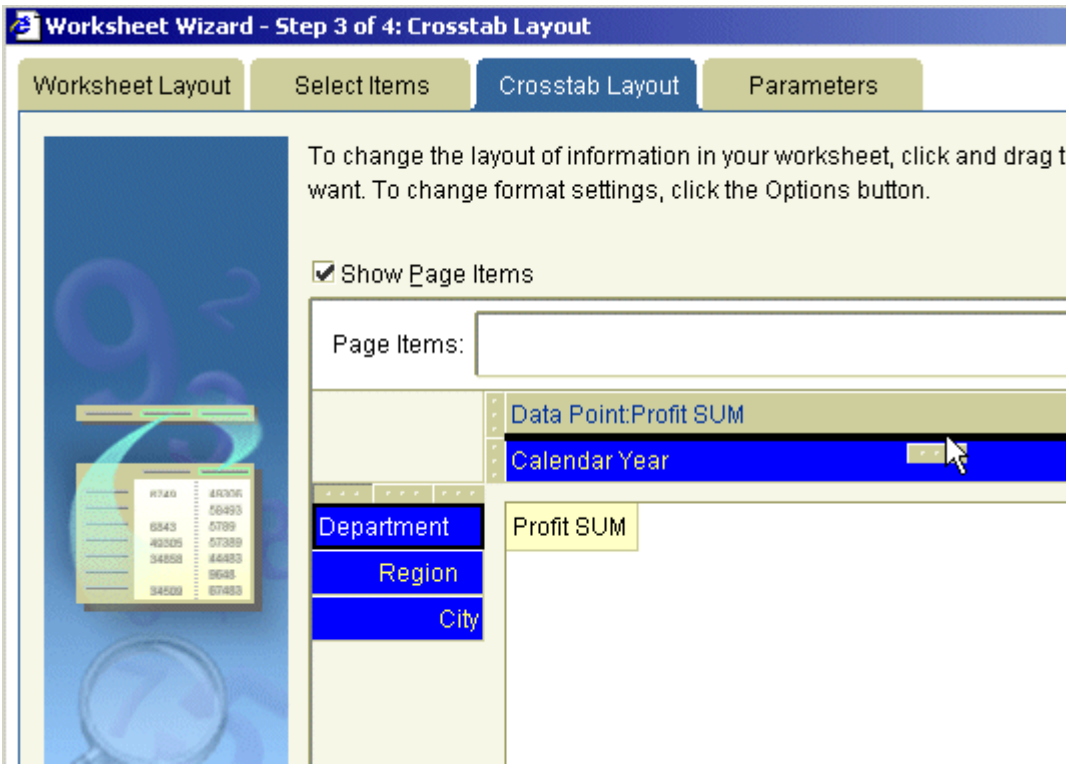


3. Select the name or grab handle of the item you want to pivot.

   Hint: To help you pivot items, ensure that the item labels are displayed in the Crosstab Layout tab. To display item names, choose Edit | Worksheet from the main Discoverer menu, click Properties, display the Sheet Properties tab, and select the Show item labels check box.

4. Drag the item to the required position 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.

Discoverer repositions the worksheet item as you specified.

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

About unexpected results with pivoting

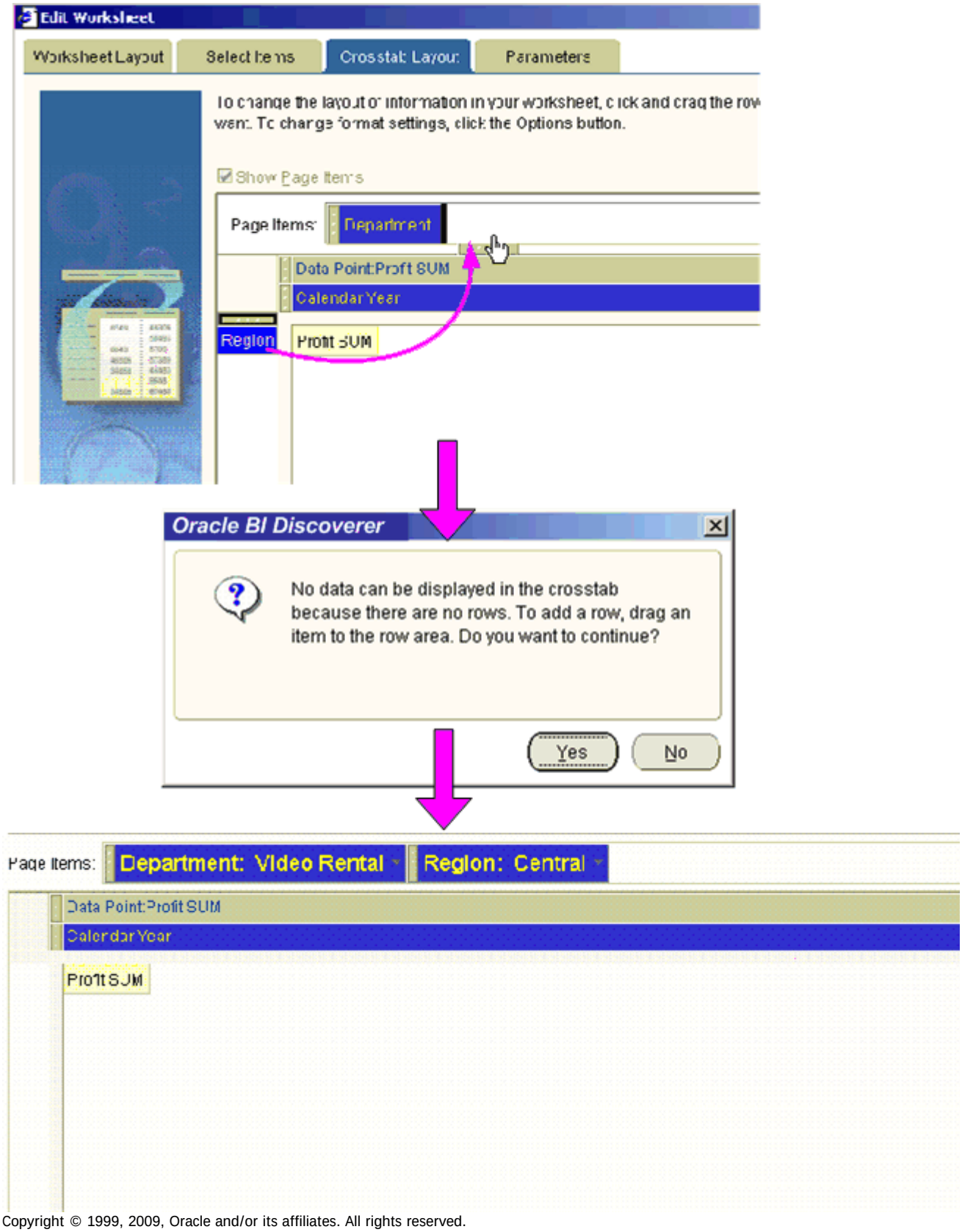
Discoverer makes it easy to pivot data on worksheets. However, it is also easy to produce unexpected results.

For example, on a crosstab worksheet, you must have the following:

- one or more items on the left axis
- one or more items on the top axis
- one or more data points (for example, Profit SUM) in the worksheet data area

In the figure below, when the Region item on a crosstab worksheet 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.

Pivoting to produce unexpected results



Drilling to analyze data

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

About drilling in Discoverer worksheets

Discoverer enables you to navigate worksheet data quickly and easily using a powerful set of drilling tools

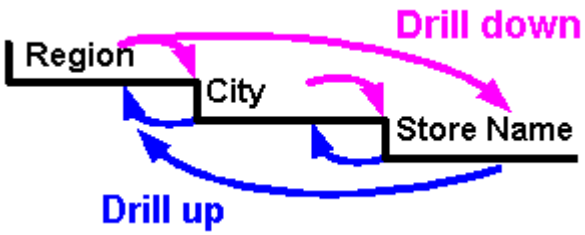
The table below lists the types of drill supported by Discoverer:

Drill type	Description	Drill icon used in worksheets
Drill up and down	Drill up and down a drill hierarchy created by the Discoverer manager. You can drill up and down in both worksheet data and graph data. For more information, see "How to drill up and down").	
Drill to a related item	Drill to a related worksheet item. You can drill to a related item in worksheet data, but not graph data. For more information, see "About drilling to related items" .	
Drill to detail	Drill to a level of detail set up by the Discoverer manager. You can drill to detail in worksheet data, but not graph data. For more information, see "About drilling to detail").	Use the Drill dialog
Drill out	Drill out to a worksheet, Internet URL, or file stored in the database. You can drill out in worksheet data, but not graph data. For more information, see "About drill links" .	
Drill out to worksheet (displayed when you click a drill out icon)	Drill out to a worksheet. For more information, see "About drill links" .	
Drill out to Internet URL (displayed when you click a drill out icon)	Drill out to an Internet URL. For more information, see "About drill links" .	

What are drill hierarchies?

A drill hierarchy is a set of related items that provide a predefined path to help Discoverer users navigate worksheets. The figure below shows a typical drill hierarchy based on geographical region (that is, Regior City, and Store Name).

Typical Discoverer drill hierarchy

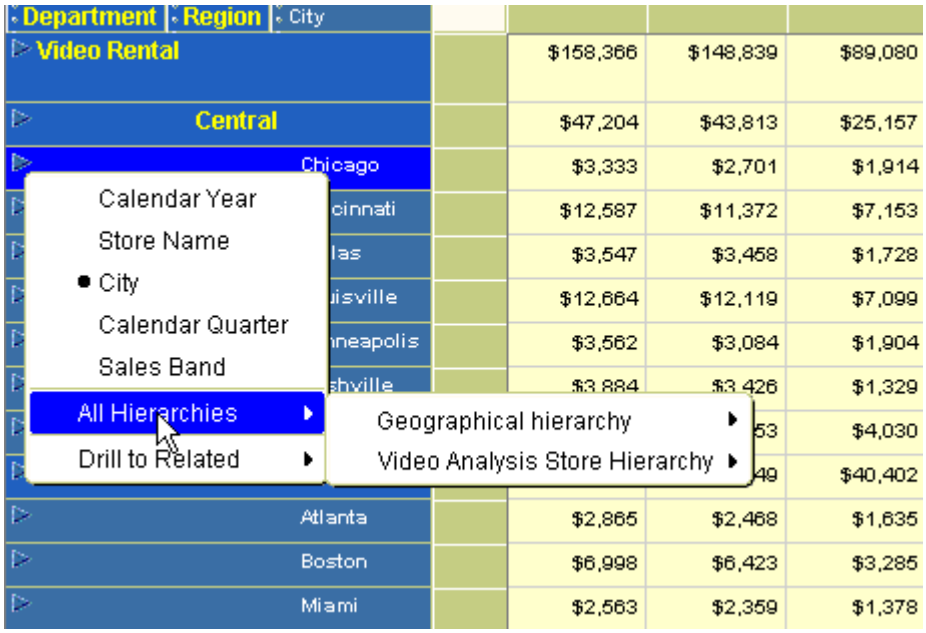


Using the example drill hierarchy above, drilling down into a region enables a worksheet user to analyze data about cities in the selected region.

Drill hierarchies are created by the Discoverer manager. If a worksheet item is included in multiple drill hierarchies, Discoverer assigns the last hierarchy used and saved as the default drill hierarchy. The defaul hierarchy items are displayed in a -drill menu. Other hierarchy items are displayed under the All Hierarchies menu option.

To select a drill level from other hierarchies available, select the All Hierarchies option on the drill menu. I the example below, the other hierarchies available are Geographical hierarchy and Video Analysis Store Hierarchy.

Multiple hierarchies in Discoverer



When you drill into numeric data, Discoverer behaves as follows:

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

Note: When you drill into a 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").

How to drill up and down

You can drill up and down on any worksheet item that has a drill hierarchy associated with it, as follows:

- You drill up to see consolidated data. For example, you might drill up from weekly data to monthly data.
- You drill down to see data in more detail. For example, you drill down from monthly data to weekly data.

For more information about drill hierarchies, see "What are drill hierarchies?".

You can drill up and down using:

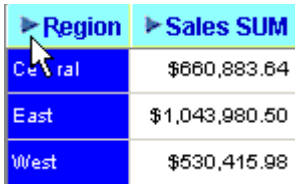
- a drill icon in worksheet data (for more information, see "How to drill up and down using a drill icon in worksheet data")
- a graph (for more information, see "How to drill up and down using a graph label in graph data")
- the Drill dialog (for more information, see "How to drill up and down using the Drill dialog")

How to drill up and down using a drill icon in worksheet data

To drill down using a drill icon:

1. Click the drill icon next to the heading of the worksheet item you want to drill down into.

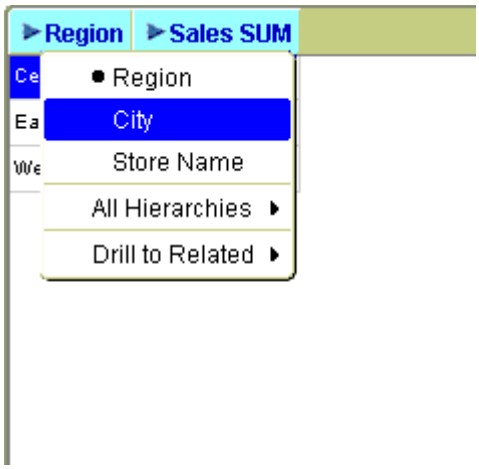
   For example, to drill down from Region to City, select the drill icon in the Region item heading.



Description of the illustration drill14.gif

2. Select a level of detail below the current level of detail.

   Hint: The current level of detail is indicated by a black dot.



   For example, to drill down from Region to City, select the City option.

   Discoverer updates the worksheet with the drill level you selected. For example, if you drill down from Region to City, Discoverer expands the worksheet to show City information.

To drill up using a drill icon:

1. Click the drill icon next to the heading of the worksheet item you want to drill up from.

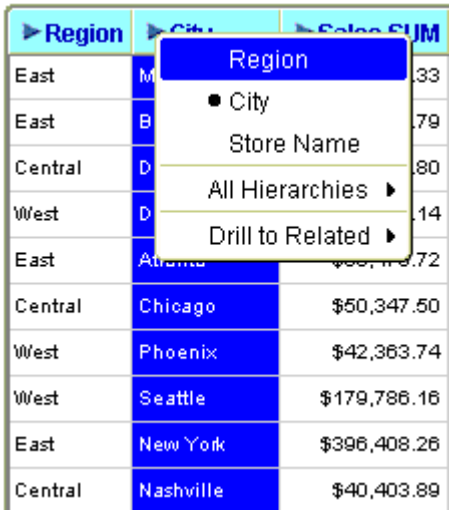
   For example, to drill up from City to Region, select the drill icon in the City item heading.

Region	City	Sales SUM
East	M ni	$41,603.33
East	Boston	$92,032.79
Central	Dallas	$39,707.80
West	Denver	$90,674.14
East	Atlanta	$93,476.72
Central	Chicago	$50,347.50
West	Phoenix	$42,363.74
West	Seattle	$179,786.16
East	New York	$396,408.26
Central	Nashville	$40,403.89
Central	St. Louis	$105,522.13
Central	Cincinnati	$204,164.95

Description of the illustration drill15.gif

2. Select a level of detail above the current level of detail.

   Hint: The current level of detail is indicated by a black dot.



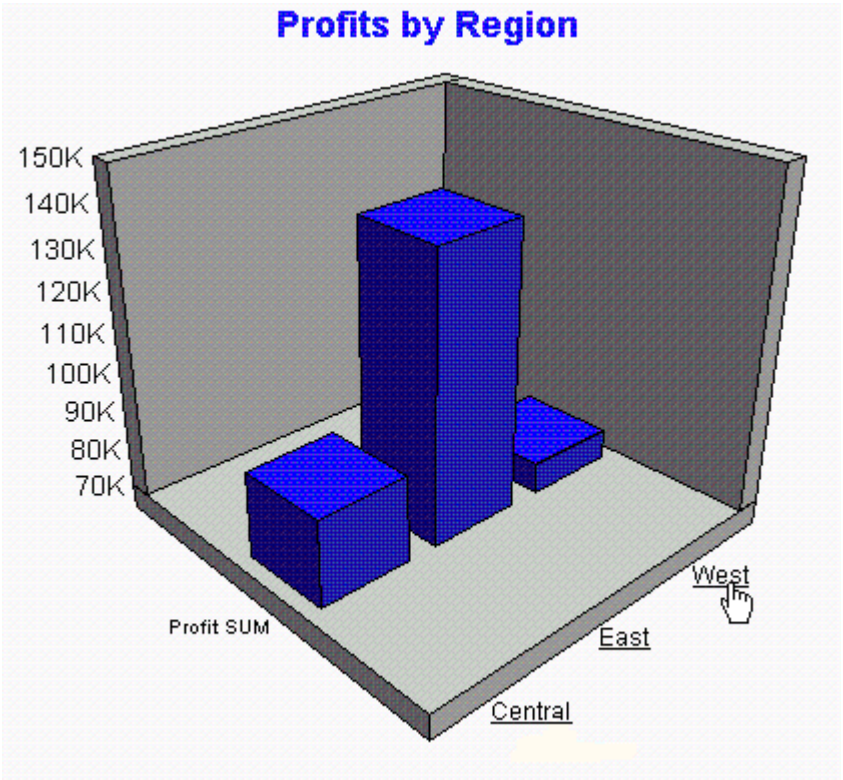
   For example, to drill up from City to Region, select the Region option.

   Discoverer updates the worksheet with the drill level you selected. For example, if you drill up from City to Region, Discoverer collapses the worksheet to only show data summarized at the Region level.

How to drill up and down using a graph label in graph data

To drill down using a graph label in graph data:

1. Display the graph you want to analyze.

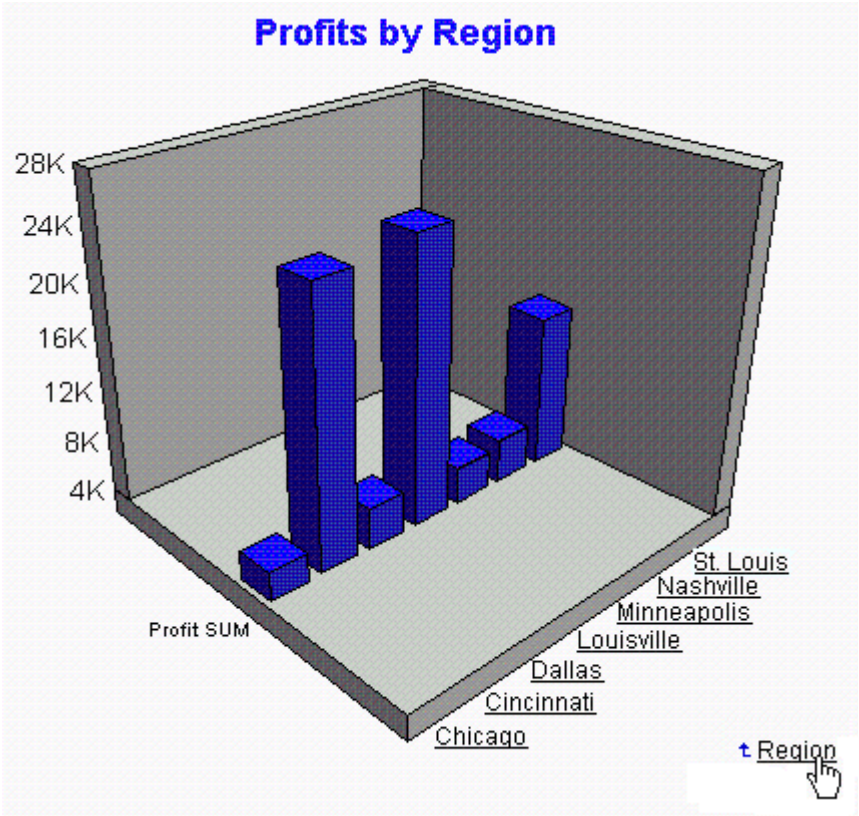


2. Select the underlined graph label for the item value you want to drill down into.

   For example, select the West graph label to drill down to data for the West region. Discoverer displays data for the next level down in the current drill hierarchy.

To drill up using a graph label in graph data:

1. Display the graph you want to analyze.



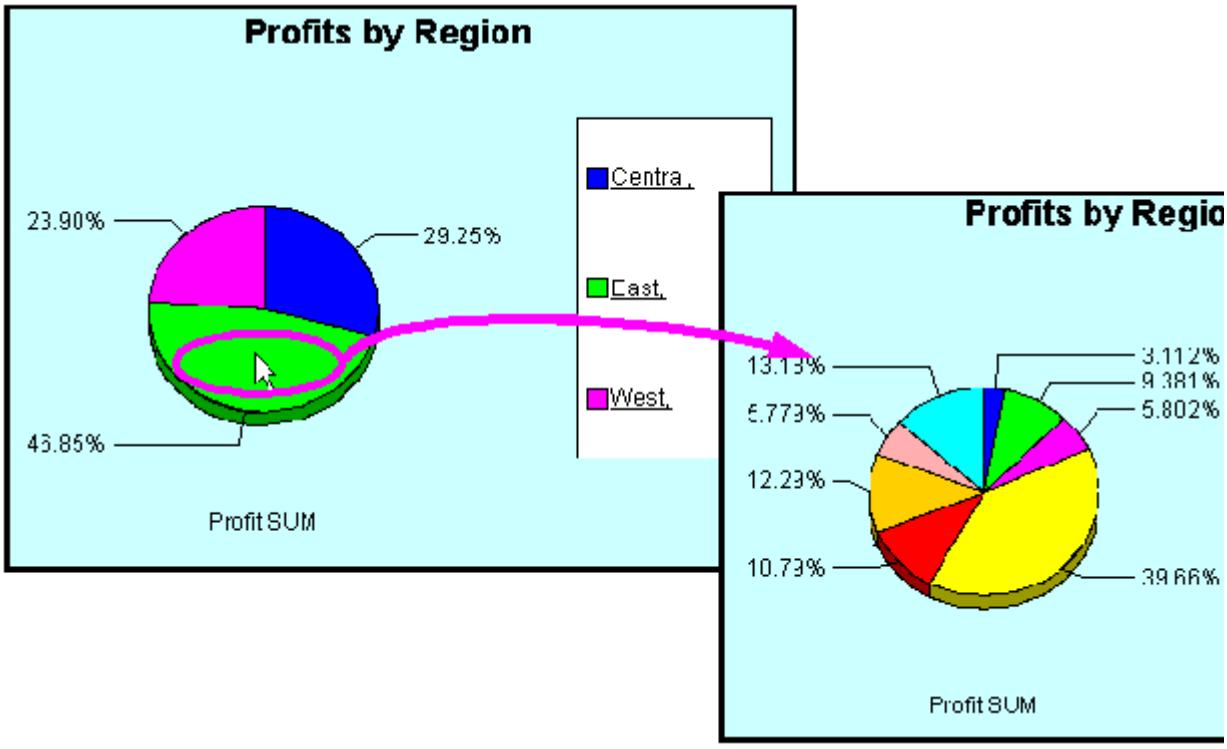
2. Select the underlined graph label with an up arrow beside it to drill up to that level of data.

   For example, select the Region drill link to drill up to Region level data. Discoverer displays the data at the next level up in the drill hierarchy.

Notes

- When you drill in a graph you only drill using the current drill hierarchy.
- In pie charts, you can also drill directly down into each segment. In the example below, to display detailed profits data about cities in the East region, you double click on the East segment (that is, labeled 46.85%). Alternatively, select the axis label East in the graph legend to drill down.

  Drilling directly into a pie chart



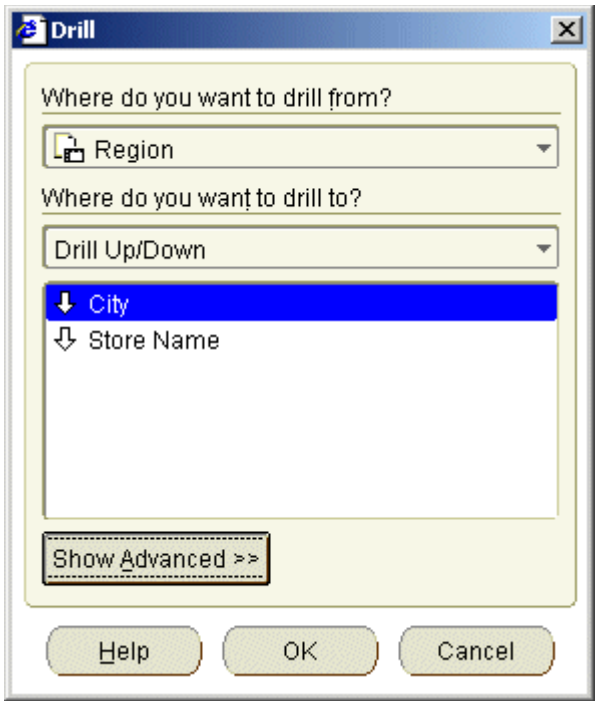
When you drill into a graph, the worksheet data is also updated (if displayed) to match the graph.

- You can drill directly into a bar on a bar graph by double clicking on the bar.

How to drill up and down using the Drill dialog

To drill up and down using the Drill dialog:

1. (optional) Select the worksheet item you want to drill on.
2. Choose Tools | Drill to display the"Drill dialog".



   Hint: You can also display the Drill dialog by right-clicking on a worksheet cell and selecting the Drill option.

3. If you did not select a worksheet item in step 1, use the**Where do you want to drill from?** drop down list to select the worksheet item you want to drill from.
4. Select Drill Up/Down from the**Where do you want to drill to?** drop down list.
5. Select an item from the list.

   For example, to drill from Region to City, select City.

6. (optional) To change the default advanced drill options, click Show Advanced to display the extra options and select as required.
7. Click OK.

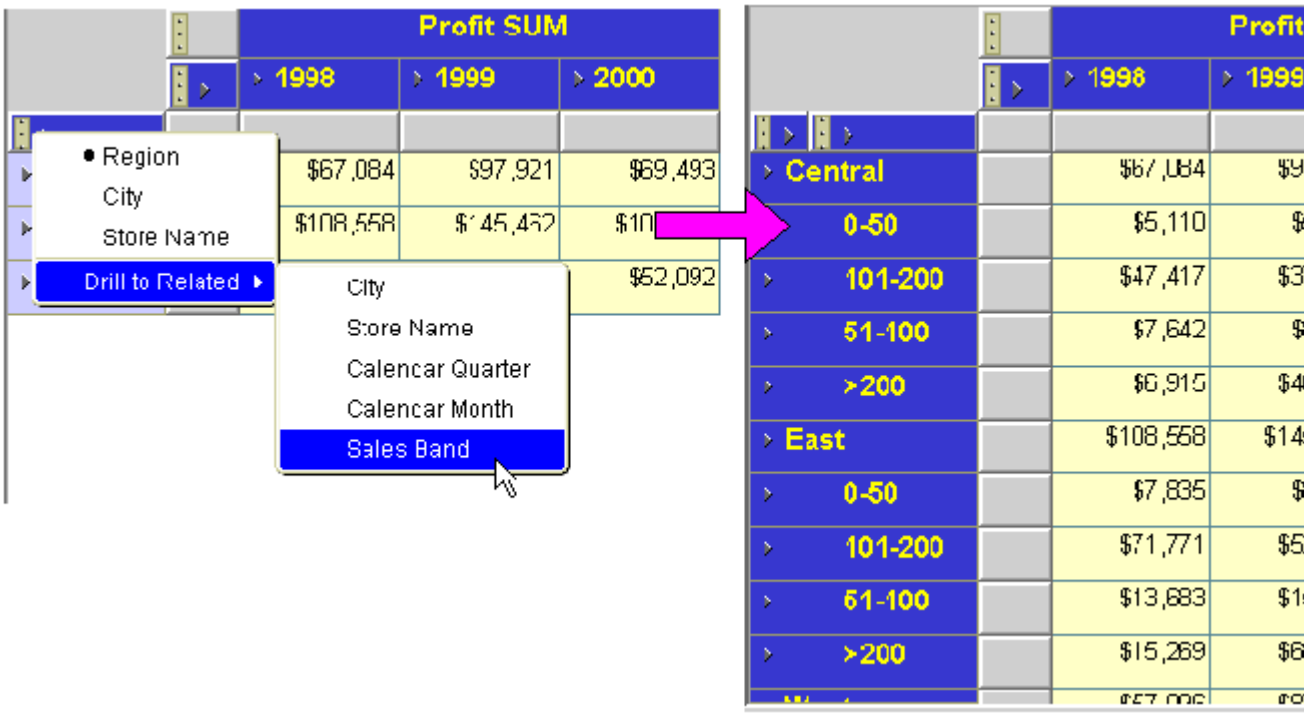
   Discoverer updates the worksheet with the options you selected. For example, if you drill down from Region to City, Discoverer adds City data to the worksheet.

About drilling to related items

You drill to a related item to add a related item to the worksheet. For example, if you select Department, the Department item is added to the worksheet. Related items are items that are not currently in the worksheet but are in folders used by the worksheet. The item you drill to does not have to be in the same drill hierarchy as the item you drill from.

In the example below, you want to add information on sales bands to a worksheet. Although you could do this by editing the worksheet to add the Sale Band item to the worksheet, you can also use the drill menu to quickly add this information.

Drilling to a related item



You can drill to a related item from worksheet data, but not from graph data.

For more information, see "How to drill to a related item".

How to drill to a related item

You drill to a related item to add a related item to the worksheet. For example, if you select Department, the Department item is added to the worksheet. Related items are items that are not currently in the worksheet but are in folders used by the worksheet. Discoverer sets up the drill to related item options automatically.

You can drill to a related item using:

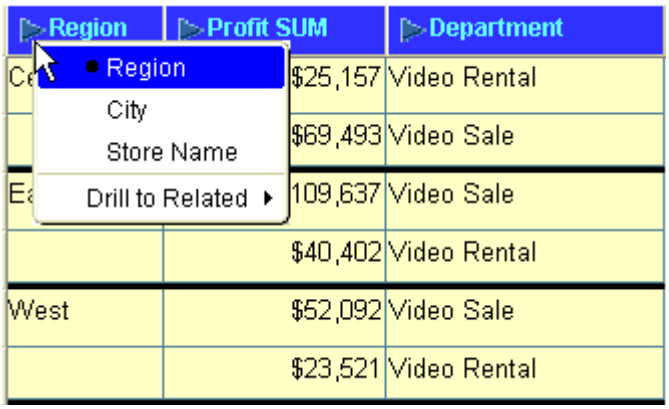
- a drill icon (for more information, see"How to drill to a related item using a drill icon")
- the Drill dialog (for more information, see"How to drill to a related item using the Drill dialog")

How to drill to a related item using a drill icon

To drill to a related item using a drill icon:

1. Click the drill icon next to the heading of the worksheet item you want to drill from.

   A pop up list is displayed.

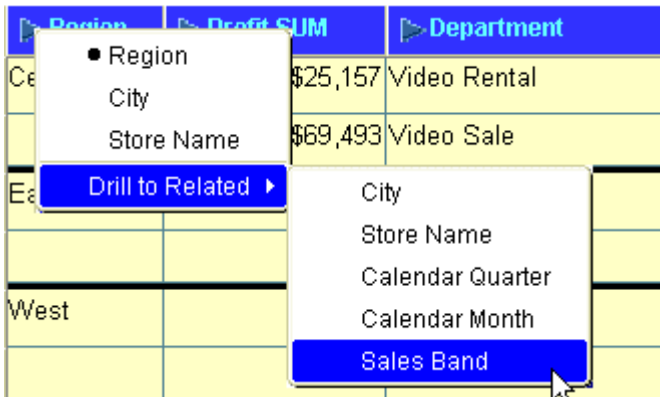


Description of the illustration drill19.gif

   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 pop up list, select the Drill to Related option.

   Discoverer displays a list of related worksheet items.



3. Select a worksheet item from the pop up list to drill to that item.

   Discoverer adds the related item that you selected to the worksheet (unless you changed the advanced settings on the Drill dialog).

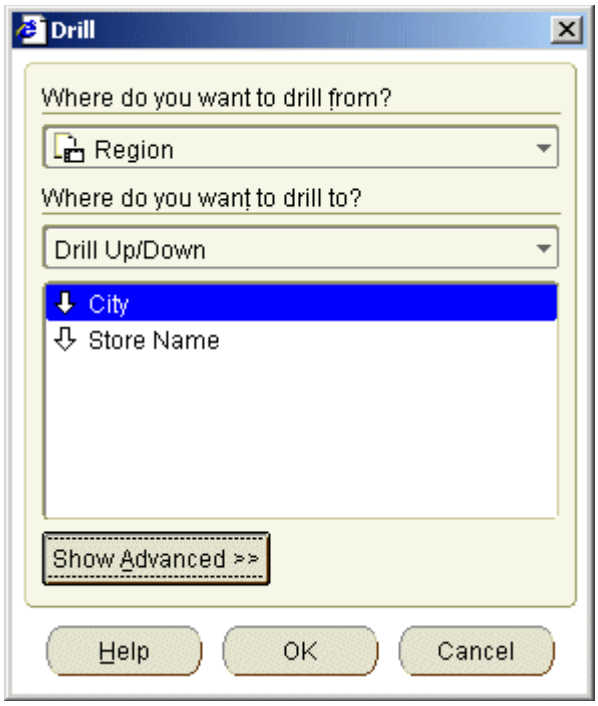
Region	Sales Band	Profit SUM	Department
Central	0-50	$25,157	Video Rental
	0-50	$2,703	Video Sale
	101-200	$13,673	Video Sale
	51-100	$3,021	Video Sale
	>200	$50,095	Video Sale
East	0-50	$40,402	Video Rental
	0-50	$3,669	Video Sale
	101-200	$16,687	Video Sale

Description of the illustration drill20.gif

How to drill to a related item using the Drill dialog

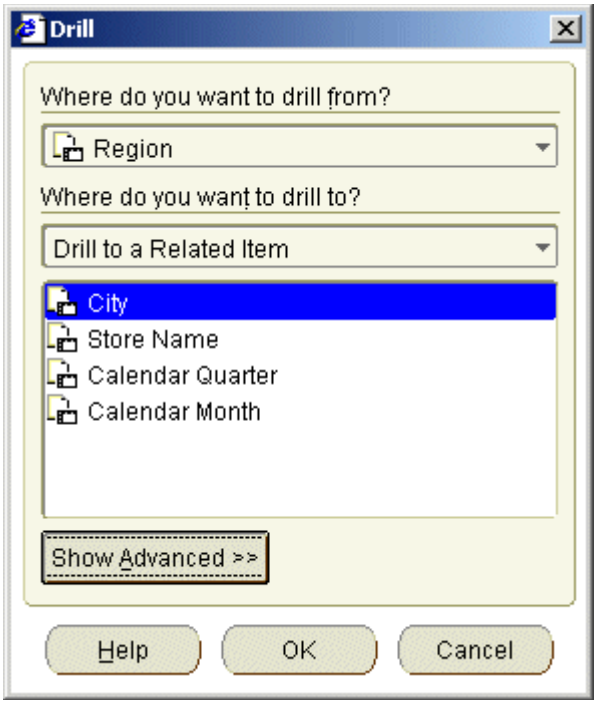
To drill to a related item using the Drill dialog:

1. (optional) Select a worksheet cell or the heading of the item you want to drill from.
2. Choose Tools | Drill to display the "Drill dialog".



Hint: You can also display the Drill dialog by right-clicking on a worksheet cell and selecting the Drill option.

3. If you did not select a worksheet cell or item heading in step 1, use the **Where do you want to drill from?** drop down list to select the worksheet item you want to drill from.
4. Select Drill to a Related Item from the **Where do you want to drill to?** drop down list.



Description of the illustration drill21.gif

5. Select an item from the list.
6. Click OK.

   Discoverer updates the worksheet according to the default drill options currently selected.

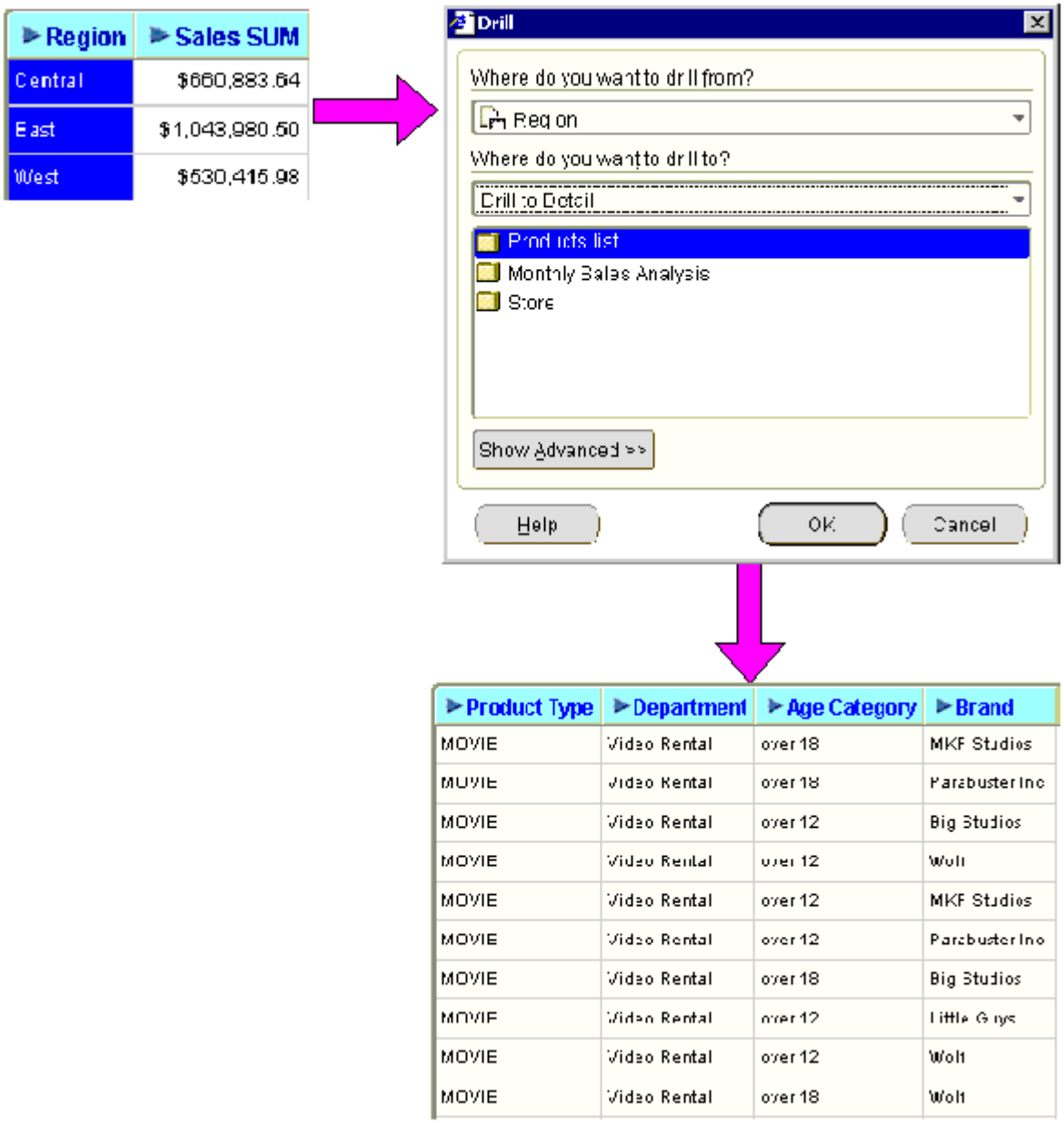
   Hint: Click Show Advanced to display extra drill options that enable you to specify how Discoverer adds the new item to the worksheet. For example, if you click Show Advanced and select the **Place drill results in a new sheet** check box, Discoverer creates a new worksheet that includes the related item.

About drilling to detail

You drill to detail to analyze a particular folder in a business area or to see what values constitute a particular summarized or aggregated value. Discoverer displays the detail data in a new worksheet. Drill t detail is set up by the Discoverer manager. For example, you might drill from Department in a sales worksheet to display information on all departments in a new worksheet.

In the example below, you want to analyze the component values that constitute the Region summary values. You select the Region item then display the drill dialog and select Products list.

Drill to detail



You can drill to detail from worksheet data, but not from graph data.

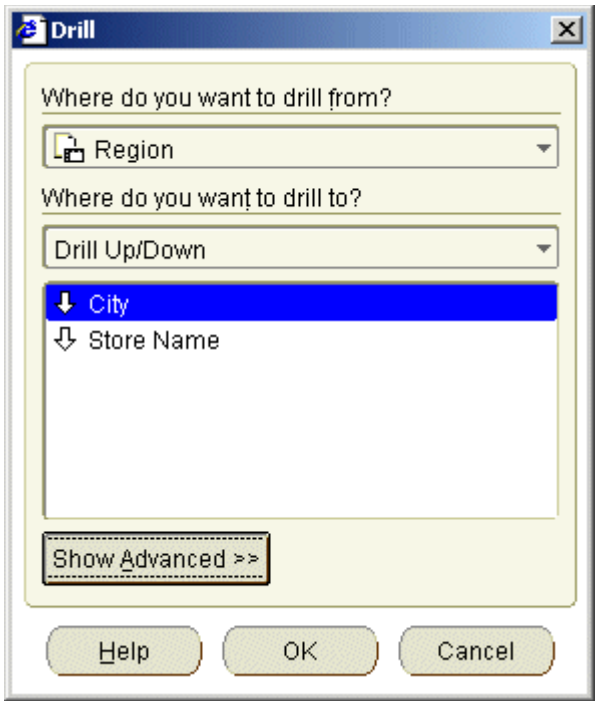
For more information, see "How to drill to detail".

How to drill to detail

You drill to detail to analyze all worksheet items in a folder or to analyze the individual rows that constitute summary values. For example, you might want to drill from a worksheet item called Month to analyze a folder called Monthly Sales Analysis in a separate window. Or you might want to click on a summary Sales value and analyze the individual values that contribute to the sales total.

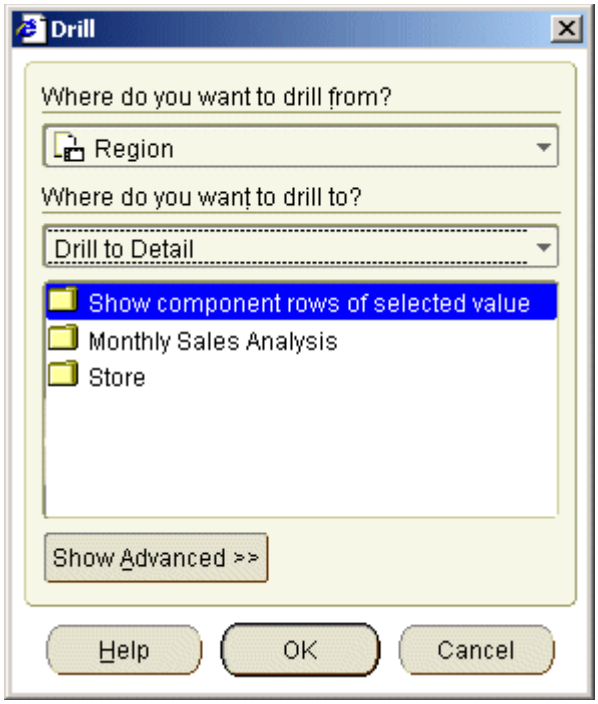
To drill to detail:

1. (optional) Select the worksheet item you want to drill from.
2. Choose Tools | Drill to display the"Drill dialog".



Hint: You can also display the Drill dialog by right-clicking on a worksheet cell and selecting the Drill... option.

3. Select Drill to Detail from the**Where do you want to drill to?** drop down list.



The list shows the Drill to Detail options available.

4. Select a Drill to Detail option from the list of available options.
5. (optional) To change the default worksheet style for the Drill to Detail data, click Show Advanced and select a worksheet style from the Advanced options.
6. Click OK.

   Discoverer displays the folder you selected in a new worksheet (unless you changed the advanced settings on the Drill dialog). To save the new worksheet, you must save the Discoverer workbook (for more information, see "How to save workbooks").

About drill links

This section explains how to use drill links in Discoverer, and contains the following topics:

- "About user defined drill links"
- "About drill links defined by the Discoverer manager"
- "About using drill links"

About user defined drill links

A user defined drill link is a way to access (or drill out to) another worksheet or Internet page from a particular worksheet cell value. For example, you might select a drill link in a worksheet cell in the Region item to display a worksheet containing more detailed information about the region in the cell you selected. Or, an Internet site containing a map of the region.

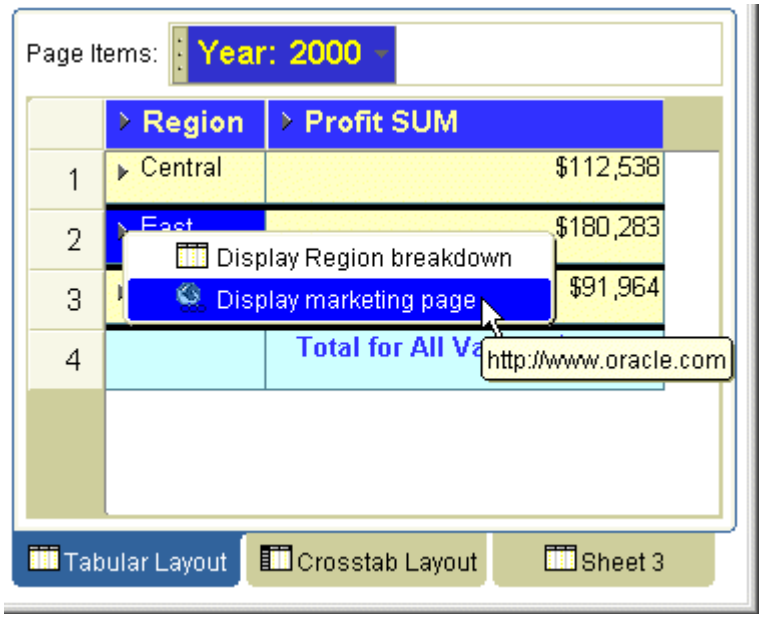
In Discoverer Plus Relational, you can create you own drill links in worksheet items. When you add drill links to a worksheet, the drill links are available when the worksheet is accessed in Discoverer Viewer and Discoverer Desktop. In addition, the Discoverer manager might set up drill links for database files (for more information, see "About drill links defined by the Discoverer manager").

Drill links enable you to navigate from one worksheet to another (in any workbook that you have access to) and from a worksheet to an Internet URL.

When you create a drill link for a worksheet item, a drill link icon is displayed in every worksheet cell value in the worksheet for that item.

You can create multiple drill links for a worksheet item. When you select a drill link on a worksheet item that has multiple drill links, Discoverer displays a list of drill links available. In the example below, the Region worksheet cell has two drill links (that is, Display Region breakdown, and Display marketing page)

Multiple drill links in a worksheet cell



Description of "Multiple drill links in a worksheet cell"

In Discoverer you can create:

- static drill links (that is, drill links that always display the same worksheet or Internet page)

- dynamic drill links (that is, drill links that display different worksheet data or Internet pages depending on the value of the worksheet cell where the drill link is selected)

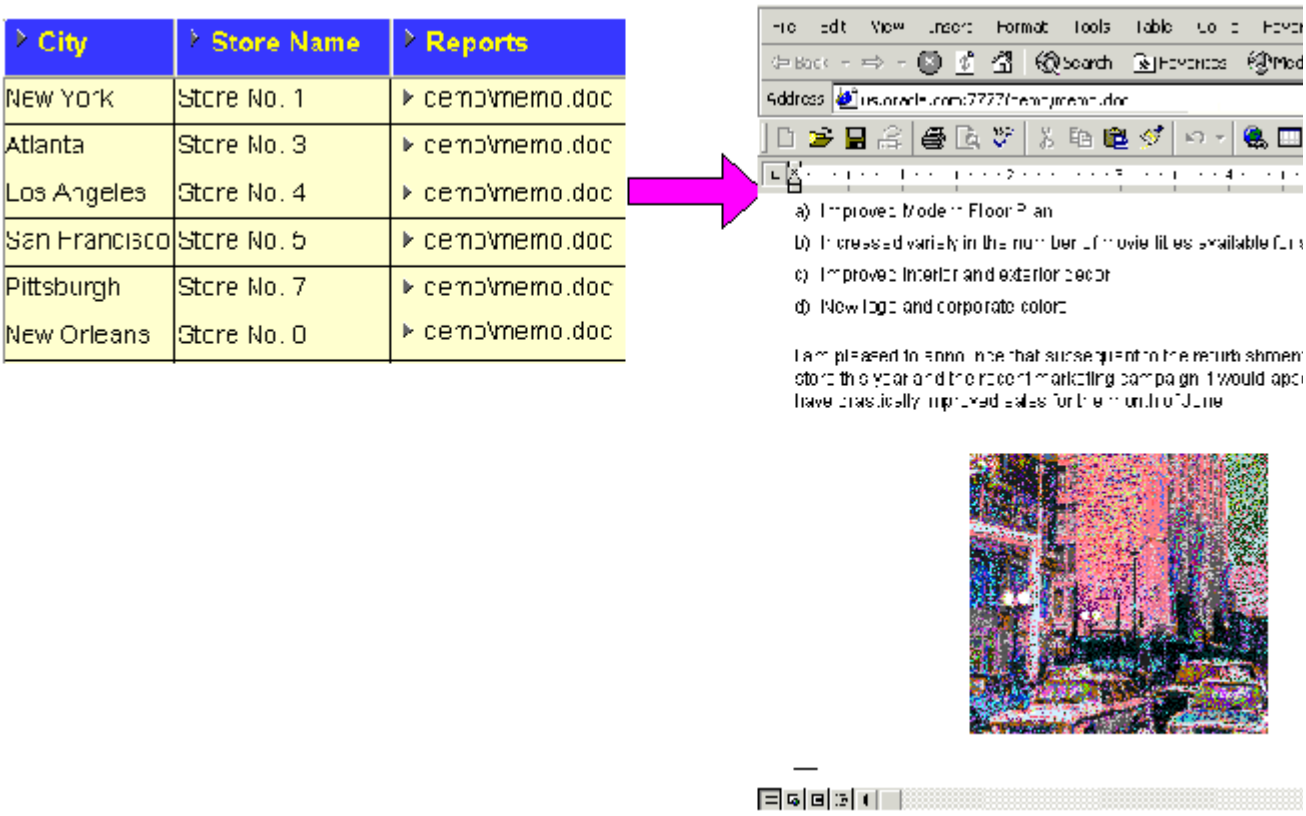
The table below explains when to use different types of drill link.

Drill link type	**Use when:**
Static drill link to a worksheet	The worksheet data displayed in the second worksheet is the same for each cell in the item. For example, you might select a drill link in a cell of a worksheet item called Year to display a worksheet showing a sales summary for all years. For more information, see "How to create drill links to Discoverer worksheets" .
Dynamic drill link to a worksheet	The worksheet data displayed in the second worksheet depends on the value in the cell where the drill link was selected (that is, the target worksheet is filtered by a parameter). For example, you might select a drill link in a cell of a worksheet item called Year to display sales information for that particular year. The value of the worksheet cell is passed to the target worksheet using a worksheet parameter. For more information, see "How to create drill links to Discoverer worksheets" .
Static drill link to an Internet URL	The Internet URL opened is the same for each cell in the item. For example, you might select a drill link in a cell of a worksheet item called Region to display an Internet page containing a map of all regions. For more information, see "How to create drill links to Internet URLs" .
Dynamic drill link to an Internet URL	The Internet page displayed is different for each cell in the item (that is, the Internet URL can accept the value of the cell). For example, you might select a drill link in a cell of a worksheet item called Region to display an Internet page containing a map of the region in the selected cell. For more information, see "How to create drill links to Internet URLs" .

About drill links defined by the Discoverer manager

When files are stored on the middle-tier system, the Discoverer manager can make drill links available in worksheets to drill out to the file. The example below shows how clicking the drill link displays the report in the default text editor (in this case Microsoft Word) inside an Internet browser.

Drilling out to a text document in the database



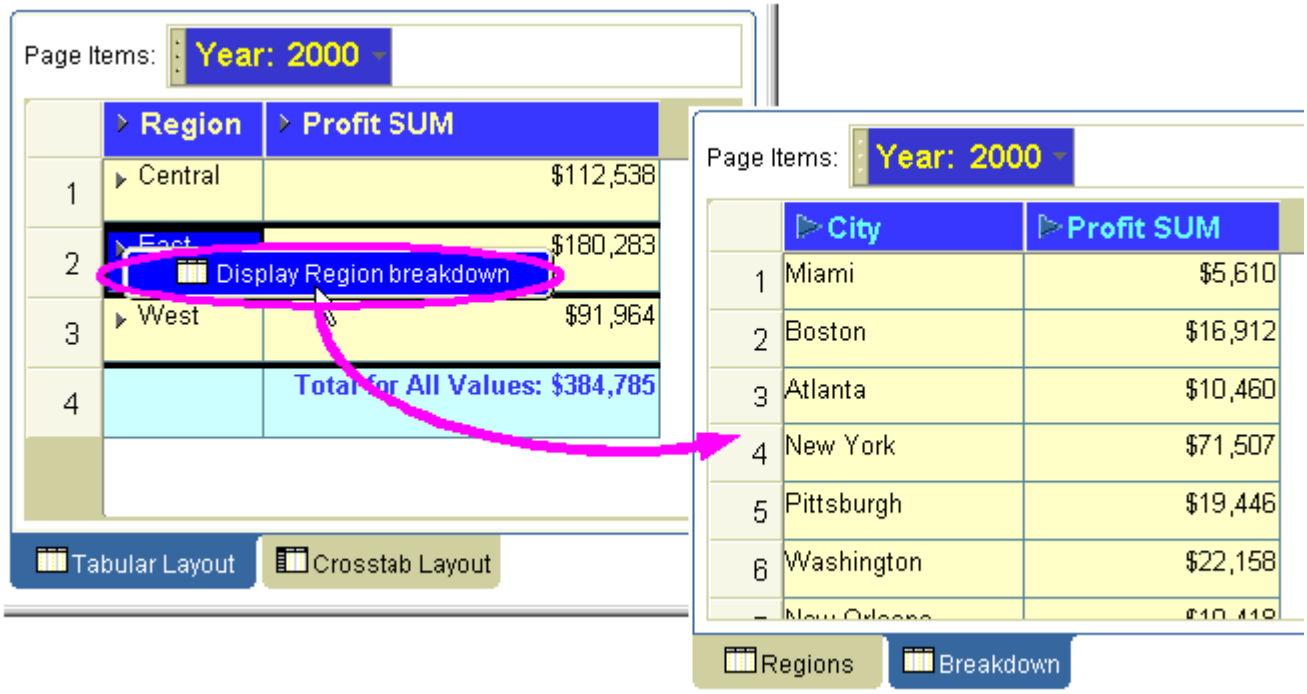
About using drill links

You use drill links that you set up yourself (or are set up by the workbook creator) to drill out to other worksheets or Internet URLs (for more information, see"About user defined drill links").

Drill links enable you to interconnect worksheets and Internet pages to enable both Discoverer Plus Relational and Discoverer Viewer users to analyze a wider range of data quickly and easily. For more information about creating drill links, see"How to create drill links".

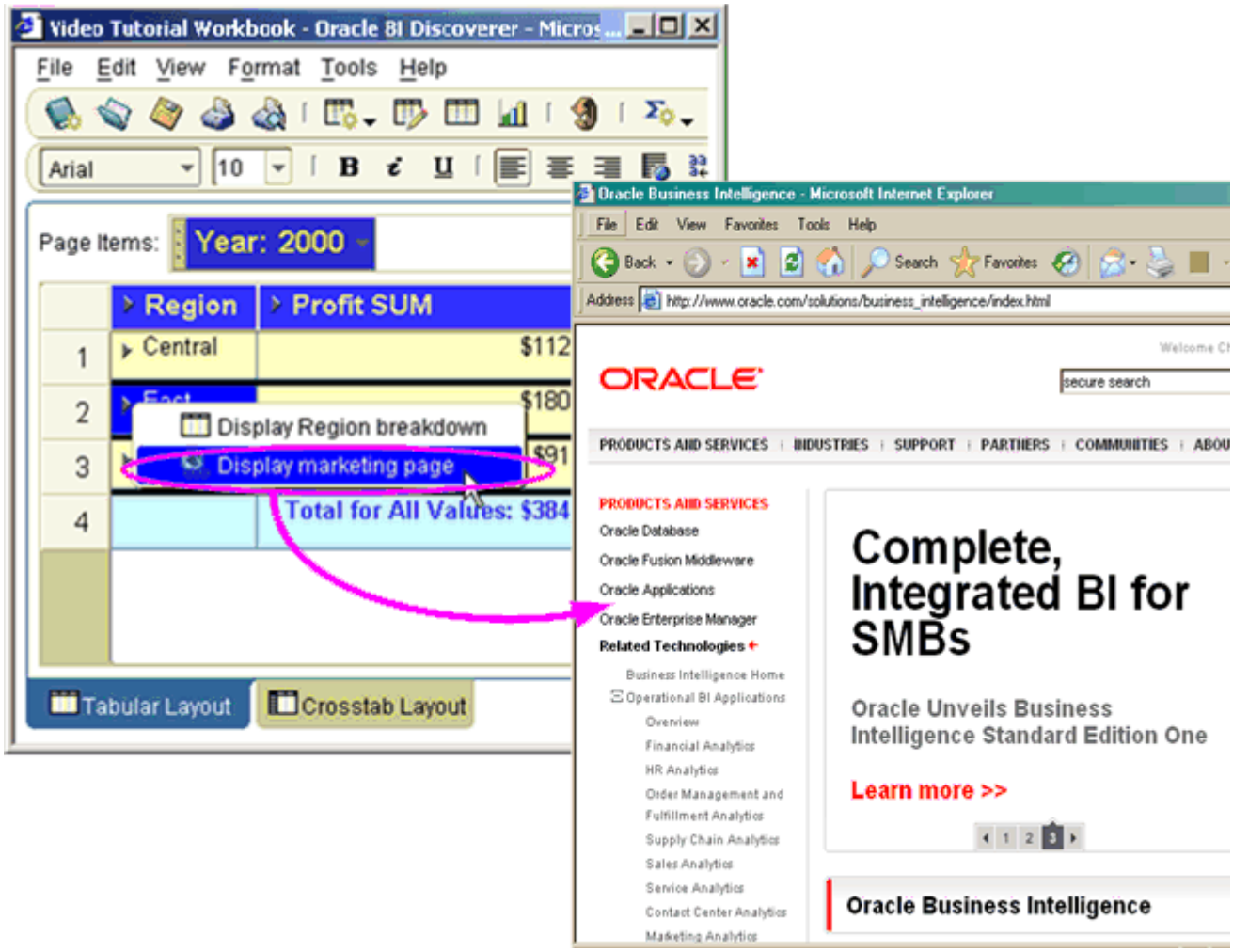
In the example below, the drill link on the Region item in the Tabular Layout worksheet displays the Breakdown worksheet with data for the selected region (for example, East).

Discoverer worksheet item with a drill link



A worksheet item can have multiple drill links. In the example below, the Region worksheet item contains two drill links, which are displayed when you select the drill link icon. Selecting the 'Display marketing page' link displays the Oracle Corporation Business Intelligence page in a browser.

Multiple drill links in a worksheet cell



You can also drill out to a file using a drill link (for more information, see "About drill links defined by the Discoverer manager".

How to create drill links

This sections explains how to create drill links in Discoverer (for more information about drill links, see "About user defined drill links", and contains the following topics:

- "How to create drill links to Discoverer worksheets"
- "How to create drill links to Internet URLs"

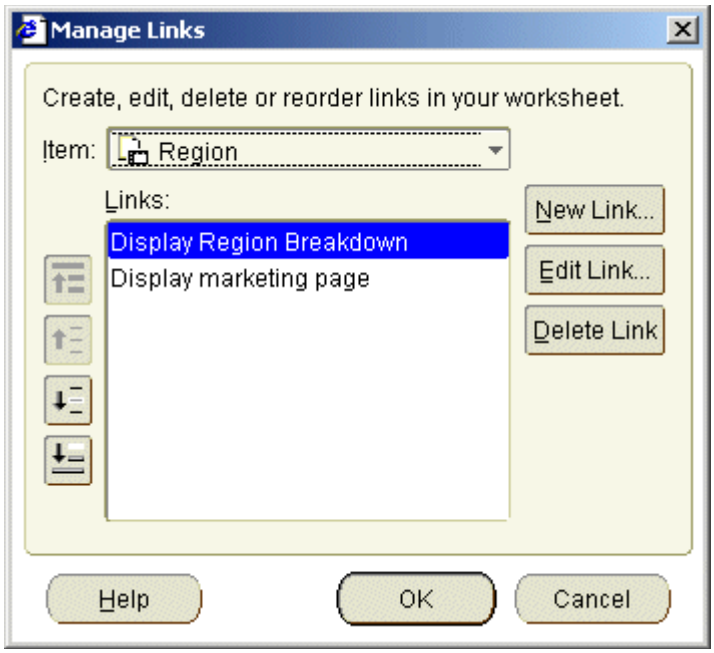
How to create drill links to Discoverer worksheets

You create a drill link to a Discoverer worksheet when you want to connect worksheet item cell values to another worksheet. You can create either a static drill link or a dynamic drill link to a worksheet.

Hint: To create a dynamic drill link to a worksheet, the target worksheet must contain at least one parameter.

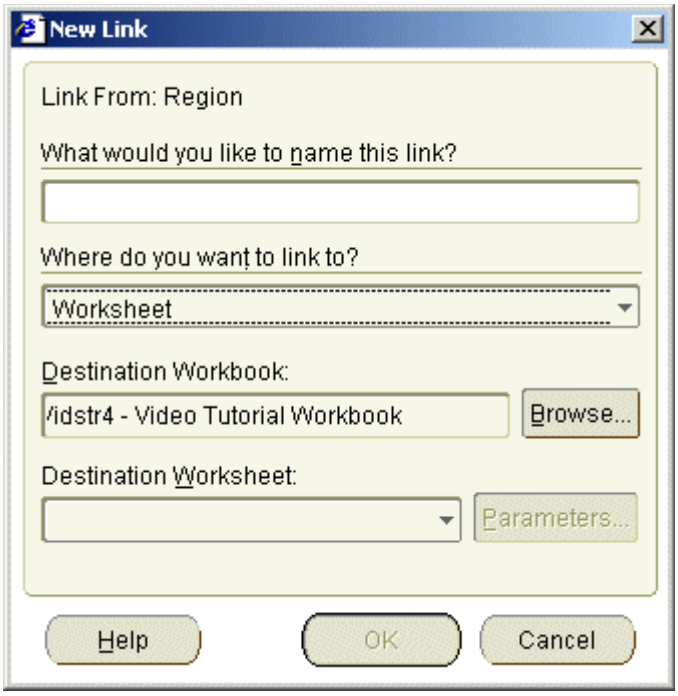
To create a drill link to a Discoverer worksheet:

1. Display the worksheet you want to edit.
2. (optional) Select the worksheet item to which you want to add the link (that is, select an item heading or a cell in a column or row).
3. Choose Tools | Manage Links to display the"Manage Links dialog".



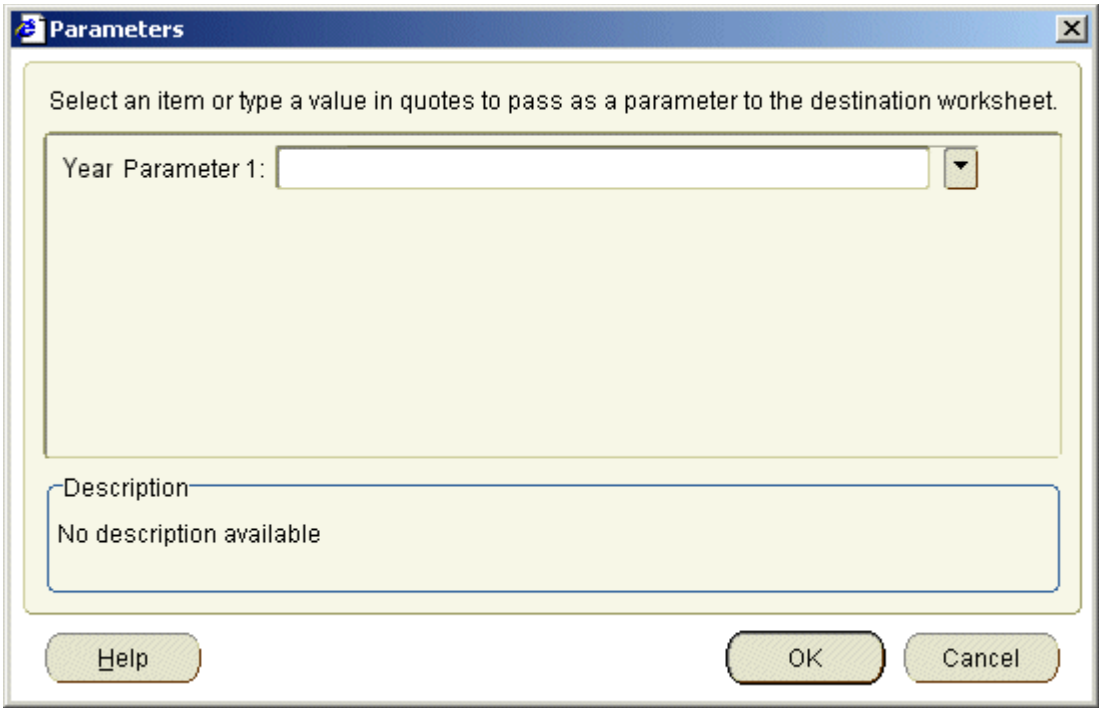
Hint: You can also display the Manage Links dialog by right-clicking on a worksheet cell and selecting the Manage Links option.

4. (optional) If you did not select a worksheet item in step 2, use the**Link** drop down list to select the worksheet item to which you want to add the link.
5. Click New Link to display the"New Link dialog".



6. Enter a descriptive name for the drill link in the **What would you like to name this link?** field.
7. Select Worksheet from the **Where do you want to link to?** drop down list.
8. Select the target worksheet to display when the drill link is selected, as follows:
    - if the worksheet is in the current workbook, select a worksheet name in the **Destination Worksheet** drop down list
    - if the worksheet is in a different workbook, click Browse to display the "Choose Worksheet dialog" and select a worksheet

    If you select a worksheet that contains no parameters, you can only create a static link (for more information about static links, see "About user defined drill links").
9. If you selected a target worksheet that contains no parameters, skip the next two steps.
10. If you select a target worksheet that contains an active parameter, click Parameters to display the "Parameters dialog", which enables you to specify the parameter value, or pass a dynamic worksheet value to the parameter.



11. Create a static or dynamic drill link as follows:

    To create a static drill link to a Discoverer worksheet that has an active parameter, do the following

    a. (optional) To change the default value for active parameters, enter new parameter values into each of the fields in the **Parameters** area.

       To accept the default parameter value(s), skip this step.

       Note: If you enter all possible parameter values for the parameter, the end user is not prompted to specify a parameter when they select the link. The target worksheet always displays the same data by default.

    b. Click OK to close the Parameters dialog.

    To create a dynamic drill link to a Discoverer worksheet that has a parameter, use the "Parameters dialog" to specify a parameter value as follows:

    a. Click the down arrow next to the parameter field and select the worksheet item you want to use as the value of the parameter in the target worksheet.

       For example, if you select Year in the parameter field, when a user selects the drill link in a cell from the Year item, Discoverer passes the value of that cell to the target worksheet as a parameter value. In other words, if an end user selects a drill link in the 2005 cell, Discovere displays data relating to 2005. If an end user selects a drill link in the 2006 cell, Discoverer displays data relating to 2006.

    b. Click OK to close the Parameters dialog.

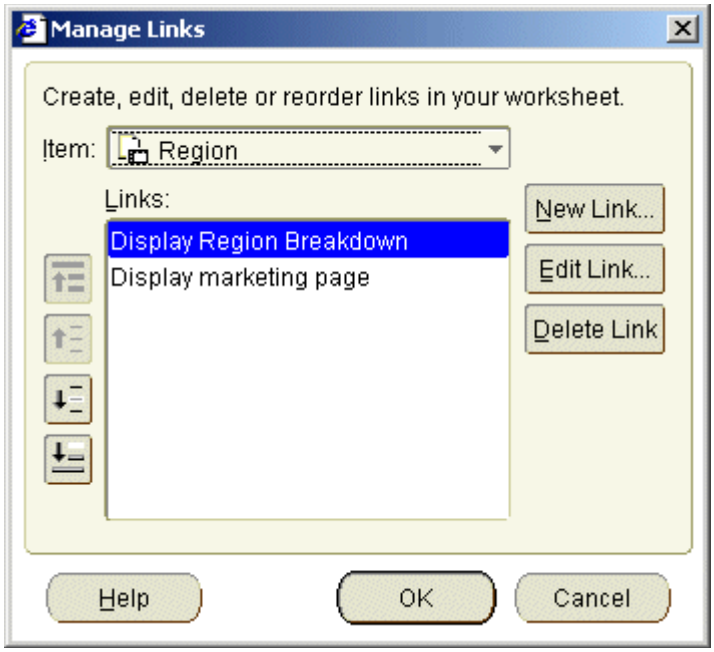
12. Click OK to save the drill link details and close the New Link dialog.
13. Click OK to close the Links dialog.

How to create drill links to Internet URLs

You create a drill link to an Internet URL when you want to connect worksheet cell values to an Internet page. You can create either a static drill link or a dynamic drill link to an Internet page.

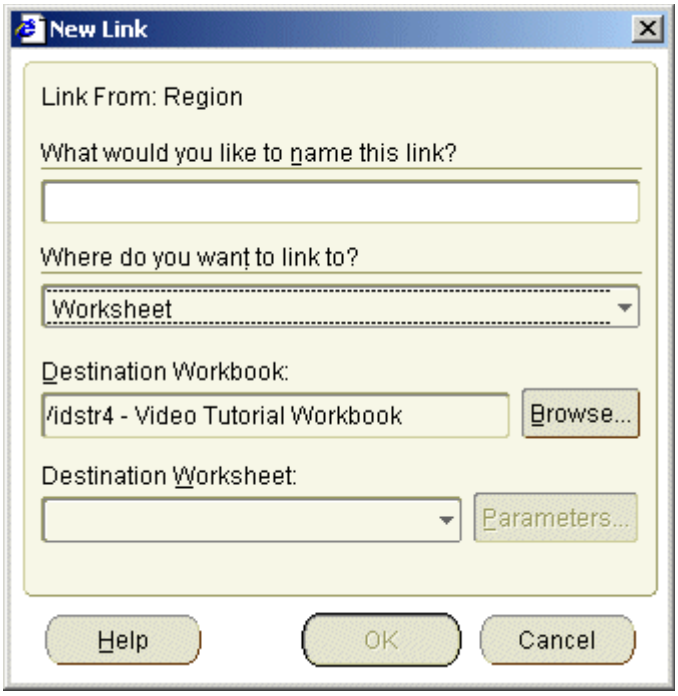
To create a drill link to an Internet URL:

1. Display the worksheet you want to edit.
2. (optional) Select the worksheet item to which you want to add the link (that is, select an item heading or a cell in a column or row).
3. Choose Tools | Manage Links to display the"Manage Links dialog".



Hint: You can also display the Manage Links dialog by right-clicking on a worksheet cell and selecting the Manage Links option.

4. (optional) If you did not select a worksheet item in step 2, use the**Item** drop down list to select the worksheet item to which you want to add the link.
5. Click New Link to display the"New Link dialog".



6. Enter a descriptive name for the drill link in the **What would you like to name this link?** field.
7. Select URL from the **Where do you want to link to?** drop down list.
8. To create a static link to an Internet page, enter an Internet address in the **Destination** field (for example, www.oracle.com).
9. To create a dynamic link to an Internet page:
    a. Enter a URL in the **Destination** field, up to the part of the address that takes the dynamic value.

       For example, you might type http://company.com/regions/

    b. Click the Insert button and select the worksheet item whose values you want to use in the URL.

       For example, you might select Region to append the name of a region to the URL.

    c. Enter the rest of the URL.

       For example, you might type /details.htm after the URL.

       Hint: You can also type the URL in full into the Destination field. Remember to enclose item names in angle brackets (that is, <>).

       The screenshot below shows how the **Destination** field would look if you had followed this example.

The URL contains the worksheet item name in angle brackets (for example, <Region>), indicating that the value of that worksheet item is passed to the Web browser at run time. For example, if you select a drill link in a Region item and the cell contains the value West, Discoverer passes the following URL to the default Web browser:

http://company.com/regions/West/details.htm

10. Click OK to save the drill link details and close the New Link dialog.
11. Click OK to close the Links dialog

How to use drill links

You use drill links that you set up yourself (or are set up by the worksheet creator) to drill out to other worksheets or Internet pages. You can also drill out to a file stored in the database. For more information, see "About user defined drill links".

You can drill to another worksheet, Internet URL, or file stored in the database using:

- a drill link icon (for more information, see"How to drill out to a worksheet or Internet URL using a drill link icon")
- the Drill dialog (for more information, see"How to drill out to a worksheet or Internet URL using the Drill dialog")

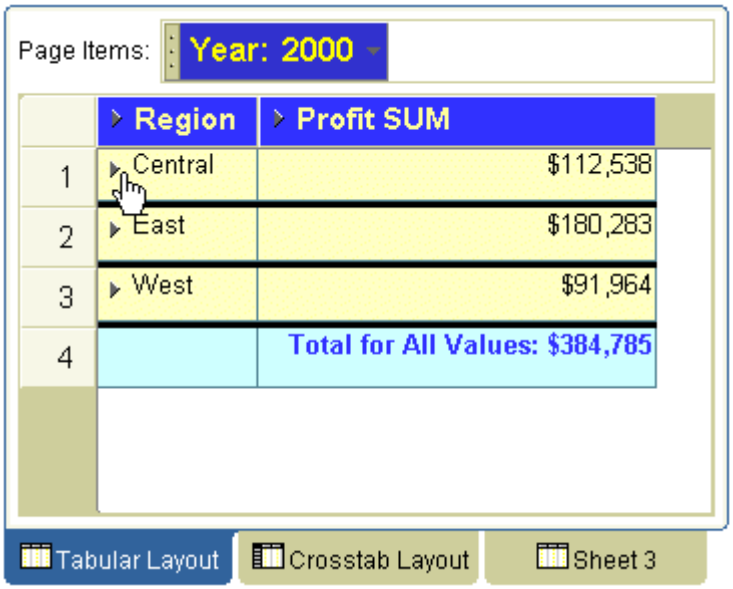
How to drill out to a worksheet or Internet URL using a drill link icon

You drill out to analyze data or information external to the current worksheet. For example, you might want to:

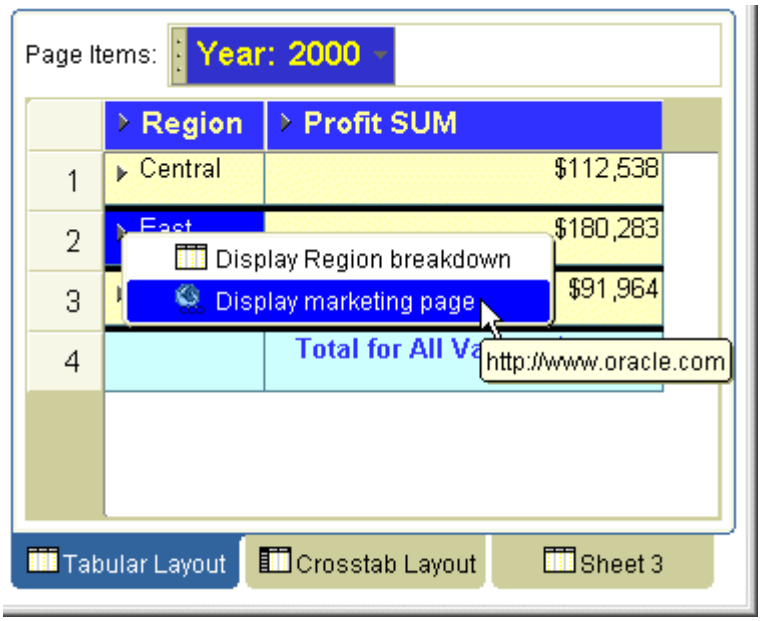
- display a different worksheet in a new tab window
- display an Internet page in a browser window
- display a file (for example, a Microsoft Word file) in a separate application

To drill out to a worksheet, Internet page, or file:

1. Select the drill link icon in the worksheet cell you want to drill out from.



Discoverer displays a pop up list of drill links available. Select the link you want to use from the pop up list.



Description of the illustration drill16.gif

Discoverer behaves as follows:

- if you drill out to a worksheet in the same workbook, Discoverer displays the worksheet in a new tab window
- if you drill out to a worksheet in a different workbook, Discoverer closes the current workbook and opens the new workbook and worksheet
- if you drill out to an Internet page, Discoverer displays the Internet page in a new browser window
- if you drill out to a file, Discoverer displays the file using associated application (for example, a text editor)

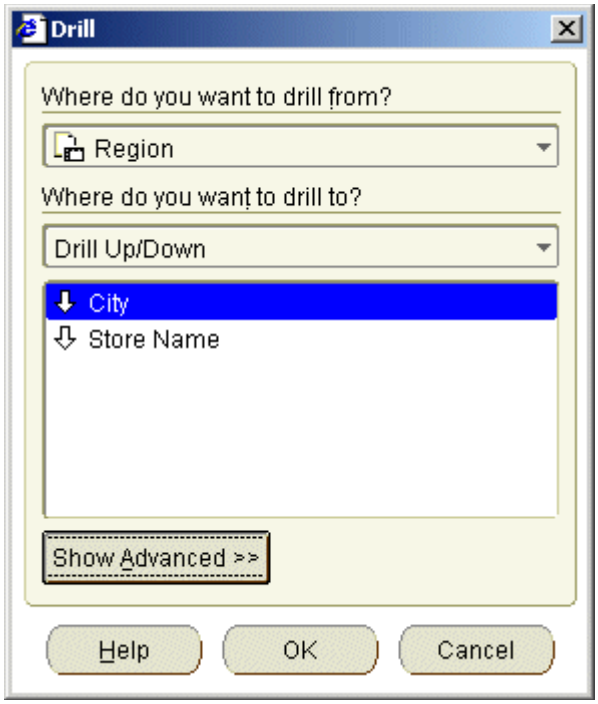
How to drill out to a worksheet or Internet URL using the Drill dialog

To drill out to a worksheet or Internet URL using the Drill dialog:

1. Select the worksheet item or cell you want to drill on.

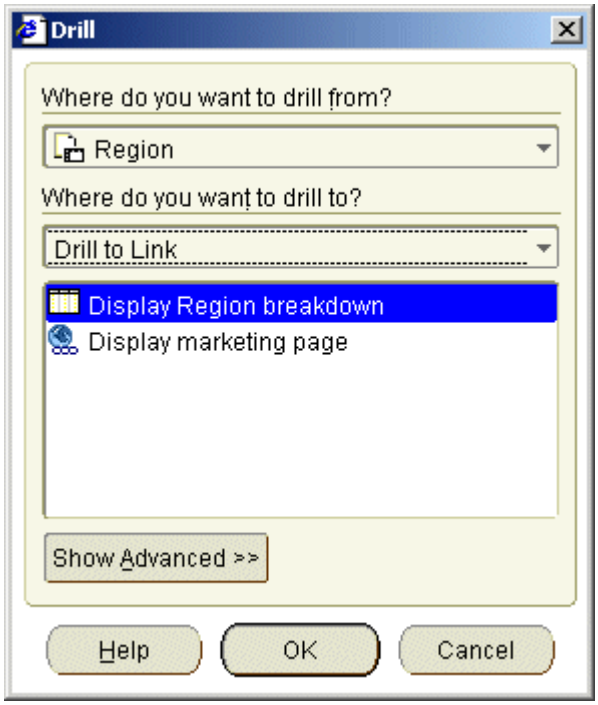
   Description of the illustration drill17.gif

2. Choose Tools | Drill to display the"Drill dialog".



Hint: You can also display the Drill dialog by right-clicking on a worksheet cell and selecting the Drill option.

3. If you did not select a worksheet cell in step 1, use the **Where do you want to drill from?** drop down list to select the worksheet item you want to drill on.
4. Select Drill to Link from the **Where do you want to drill to?** drop down list.



Description of the illustration drill18.gif

5. Select an item from the list.

6. Click OK.

   Discoverer behaves as follows:

   - if you drill out to a worksheet in the same workbook, Discoverer displays the worksheet in a new tab window
   - if you drill out to a worksheet in a different workbook, Discoverer closes the current workbook and opens the new workbook and worksheet
   - if you drill out to an Internet URL, Discoverer displays the Internet page in a new browser window

Using parameters

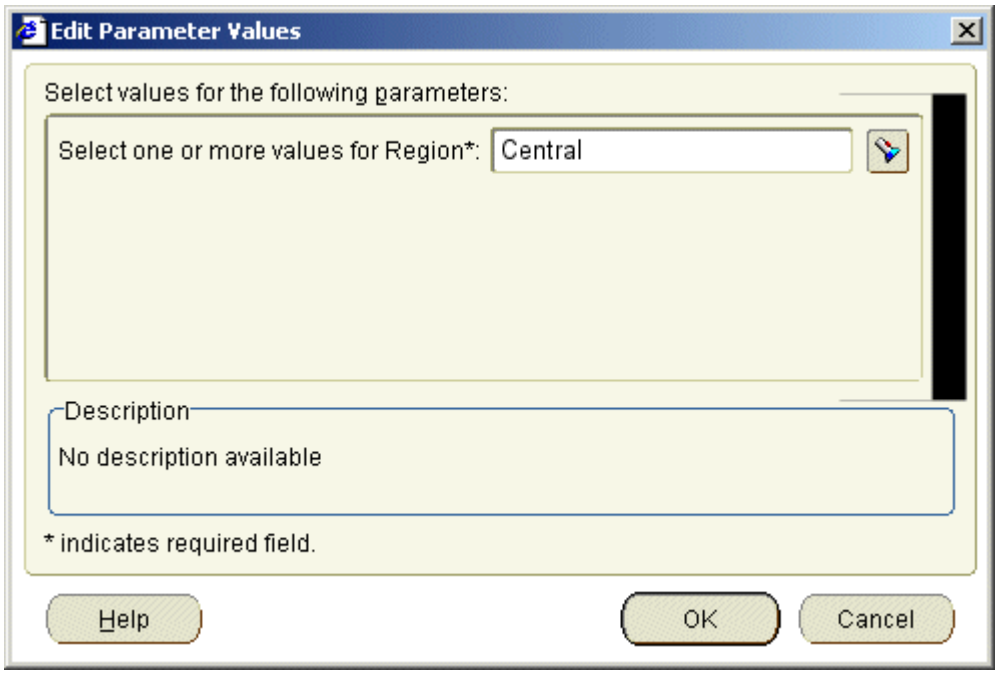
This chapter explains how to use Discoverer Plus Relational parameters to answer typical business questions, and contains the following topics:

What are parameters?

Parameters are workbook items that allow Discoverer users to analyze worksheets by entering dynamic input values (see Figure: Parameters dialog used to set parameters). 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")

Parameters 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 feature 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 Tools | Refresh Sheet and entering a different parameter value (or choose Tools | Parameter Values).
- Parameters that are part of an active condition are automatically activated.
- If you do not need 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 with operator** 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 with operator** 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 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 multiple parameter values, 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 (for example, `: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".

About filtering lists of parameter values based on selected conditions (cascading parameters)

Discoverer enables you set upcascading parameters in a worksheet. For example, you might have a parameter for Region and a parameter for City. If an end user selects the East region as a parameter value, you might want the LOV for the City parameter to display only cities in the East region.

Worksheet items in the cascading parameters must be in the same item hierarchy, and must have a list o values (LOV).

You set up cascading parameters when you create parameters (for more information, see "How to create parameters". For example, to create a cascading parameter relationship between Region and City worksheet items, you might do the following:

1. Create a parameter on the Region worksheet item called ChooseRegion, and ensure that the **Create condition with operator** check box is selected.

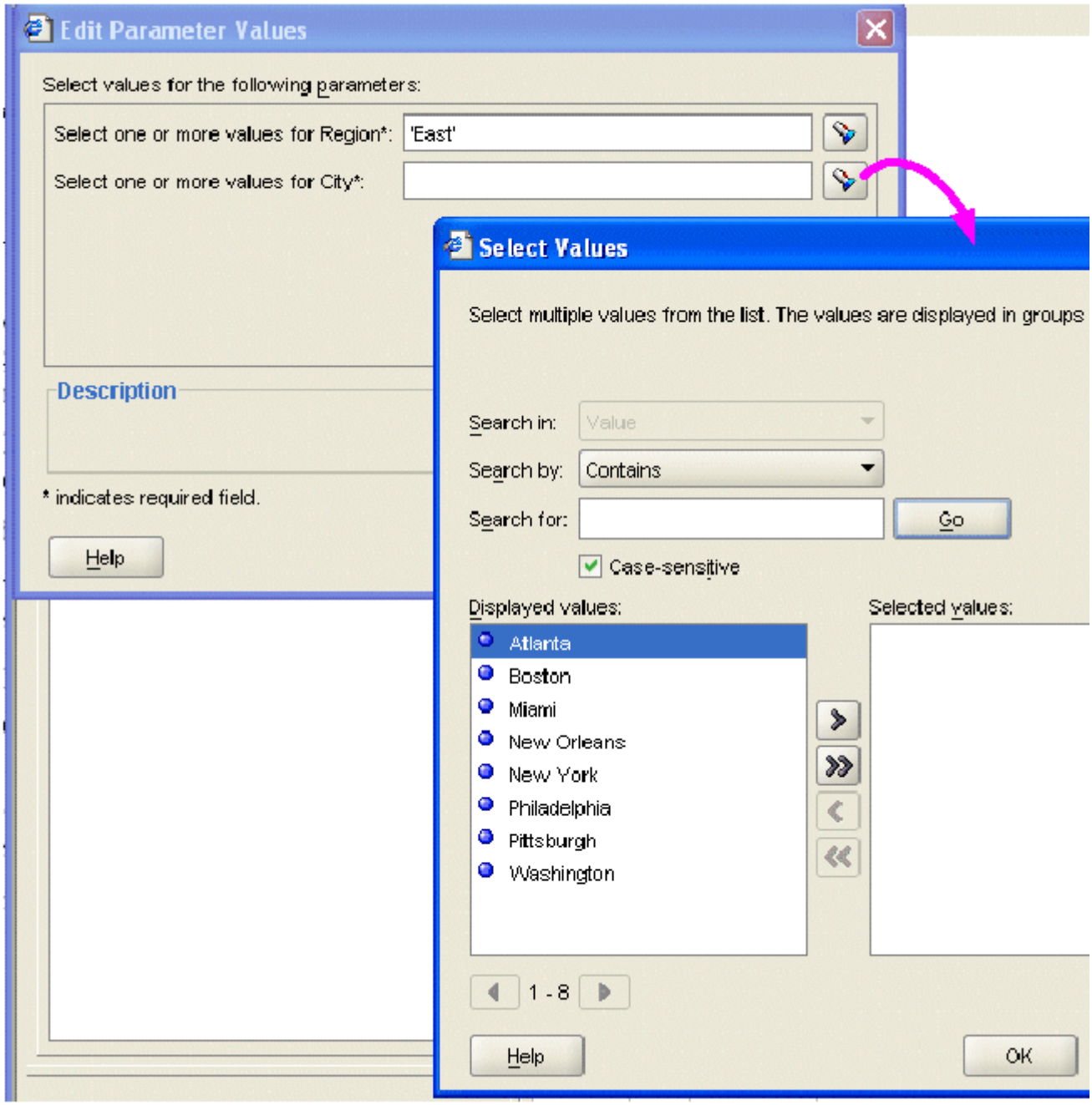
   Discoverer creates an underlying condition called Region=:ChooseRegion.

2. Create a parameter on the City worksheet item called ChooseCity, and on the "New Parameter dialog" dialog do the following:

   - Select the **Create condition with operator** check box.
   - Select the **Filter the list of values based on the selected conditions** option.
   - In the conditions list below the **Filter the list of values based on the selected conditions** option, select the check box next to Region=:ChooseRegion.

Discoverer uses the value specified for the Region parameter to filter the list of values for the City parameter. In the figure below, East is selected as the Region parameter value in the Edit Parameter Values dialog. Therefore, when an end user displays the LOV for the City parameter in the Select Values dialog, Discoverer displays only cities in the East region (for example, Atlanta, Boston, Miami).

Using a cascading parameter to filter a list of values



Description of "Using a cascading parameter to filter a list of values"

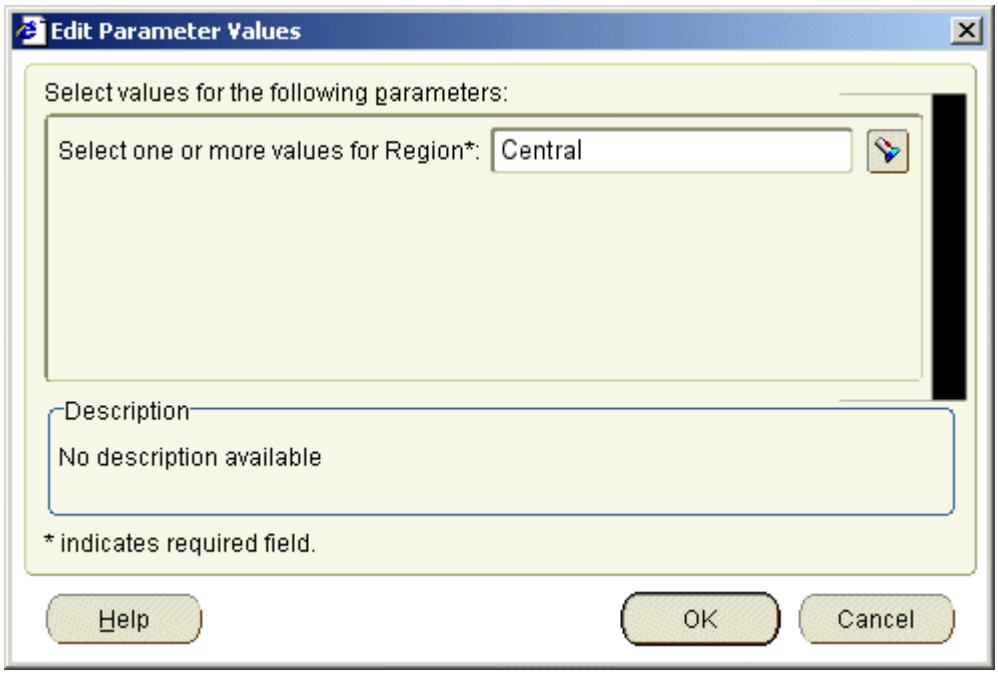
How to set parameters

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 a value as prompted.
   - (optional) Click OK to accept the default value, if a default value is defined.
   - (optional) If a flashlight button is displayed next to a parameter field, click this button to display the "Select Value dialog", which enables you to search for and select the values you want to use. For more information, see "Using lists of values (LOVs)".
   - (optional) Click the **<Index and Value>** drop down list to choose whether Discoverer displays parameter values with index numbers (for example, (0) Central, (1) East) or without index numbers (for example, Central, East).

     Note: The <**Index and Value**> drop down list is only displayed if the worksheet builder selected the **Enable users to select either indexes or values** check box in the "Edit Parameter dialog".

For more information about the <**Index and Value**> drop down list, see "About using indexes and values in parameters".

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: A worksheet filtered by a parameter value).

A worksheet filtered by a parameter value

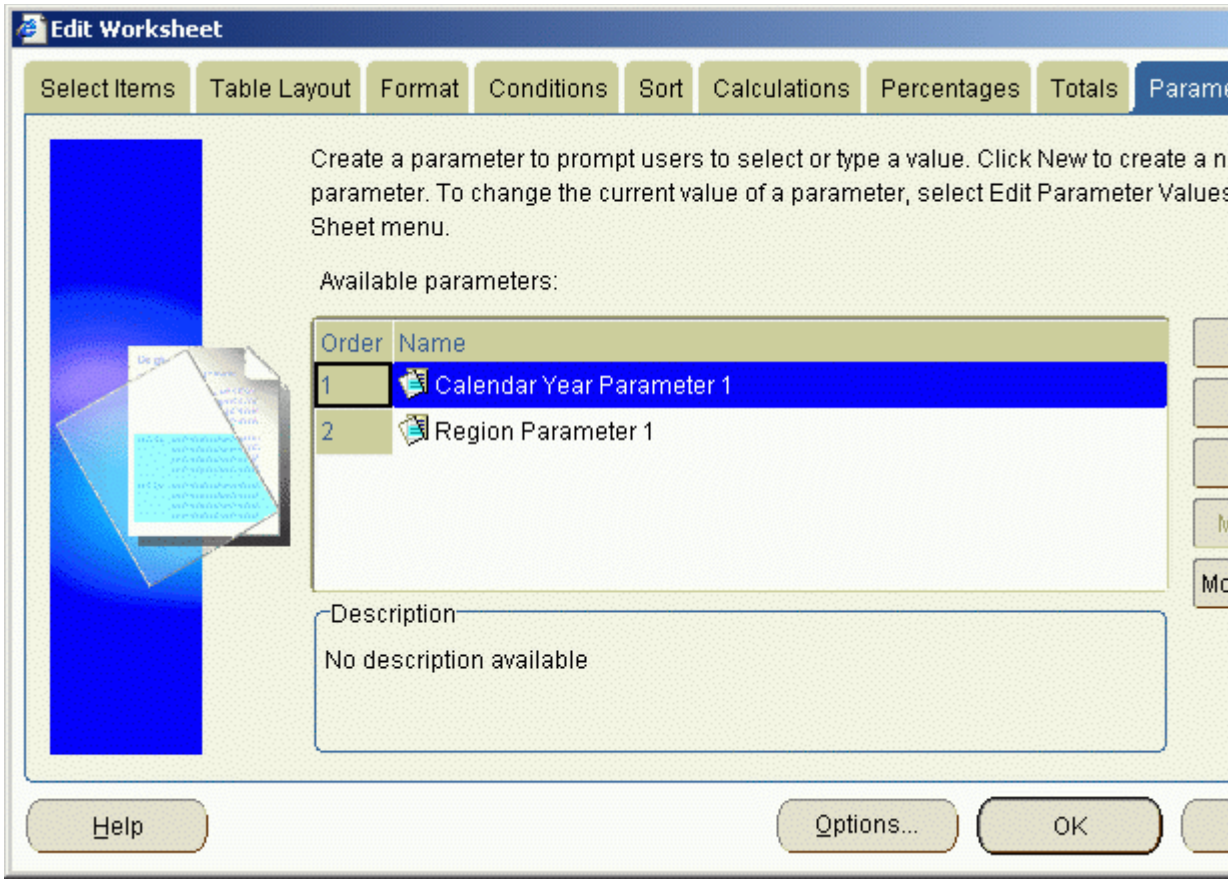
How to activate parameters

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 in the worksheet.

3. Activate the condition or calculation used with the parameter:
   - If the parameter uses a condition, display the Conditions tab and select the check box next to the condition used in the parameter, then click OK to close the dialog.

- If the parameter is used in a calculation, display the Calculations tab and select the check bo next to the calculation that uses the parameter, then click OK to close the dialog.

4. When 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 Tools | Parameter Values to display the "Edit Parameter Values dialog" and enter a new value.
- On the "Edit Worksheet dialog: Parameters tab", the status of parameters is displayed in the **Order** column. To activate and deactivate parameters you must modify the condition or calculation used with a parameter to change the parameter status.

How to deactivate parameters

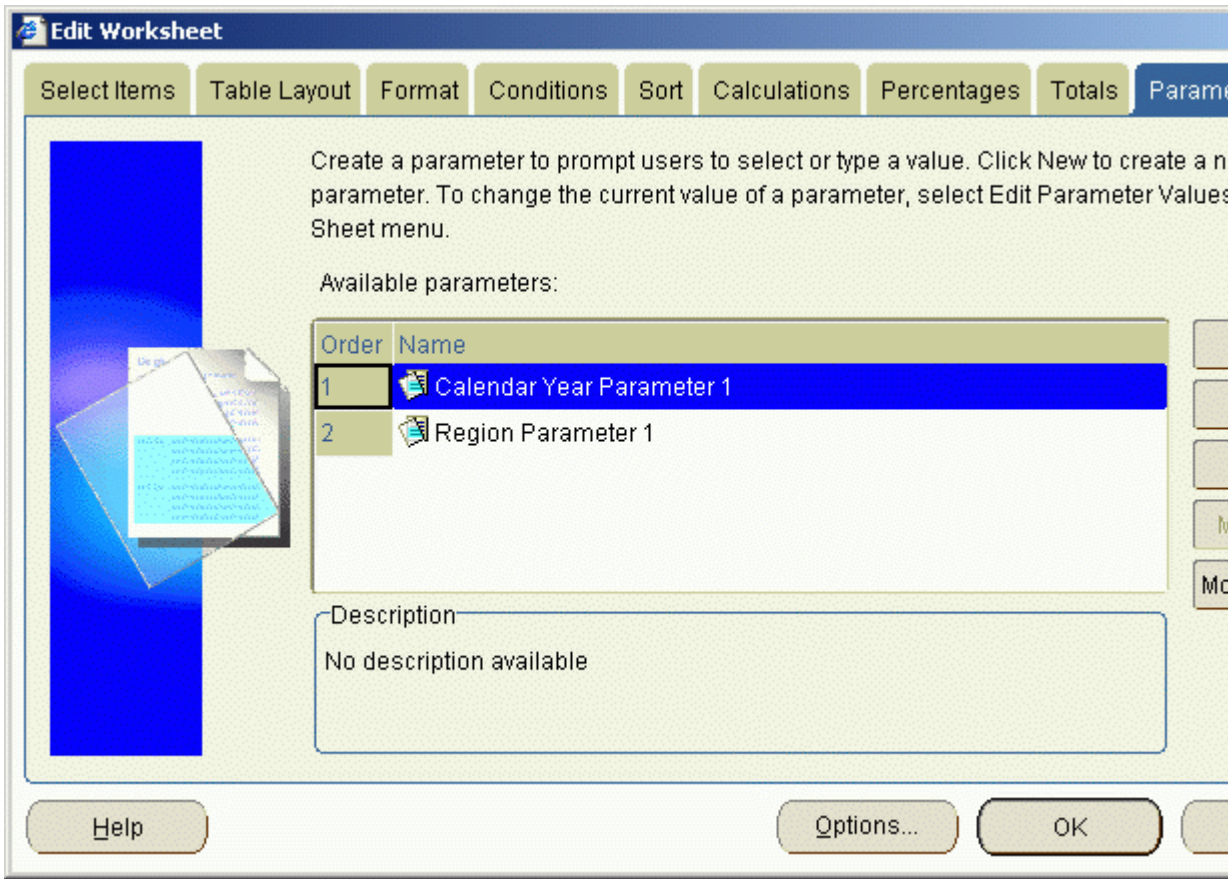
You deactivate parameters when you do not want Discoverer users to be prompted to enter parameter values when they open or refresh workbooks or worksheets.

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

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

To deactivate parameters:

1. Open the worksheet containing the parameter 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 in the worksheet. The text in the **Order** column indicates whether a parameter is activated.

3. Deactivate the condition or calculation used with the parameter:
   - If the parameter uses a condition, display the Conditions tab and clear the check box next to the condition used in the parameter, then click OK to close the dialog.

- If the parameter is used in a calculation, display the Calculation tab and clear the check box next to the calculation that uses the parameter, then click OK to close the dialog.

4. Click OK to close Edit Worksheet dialog.

   Discoverer deactivates the parameter associated with the condition or calculation.

Notes

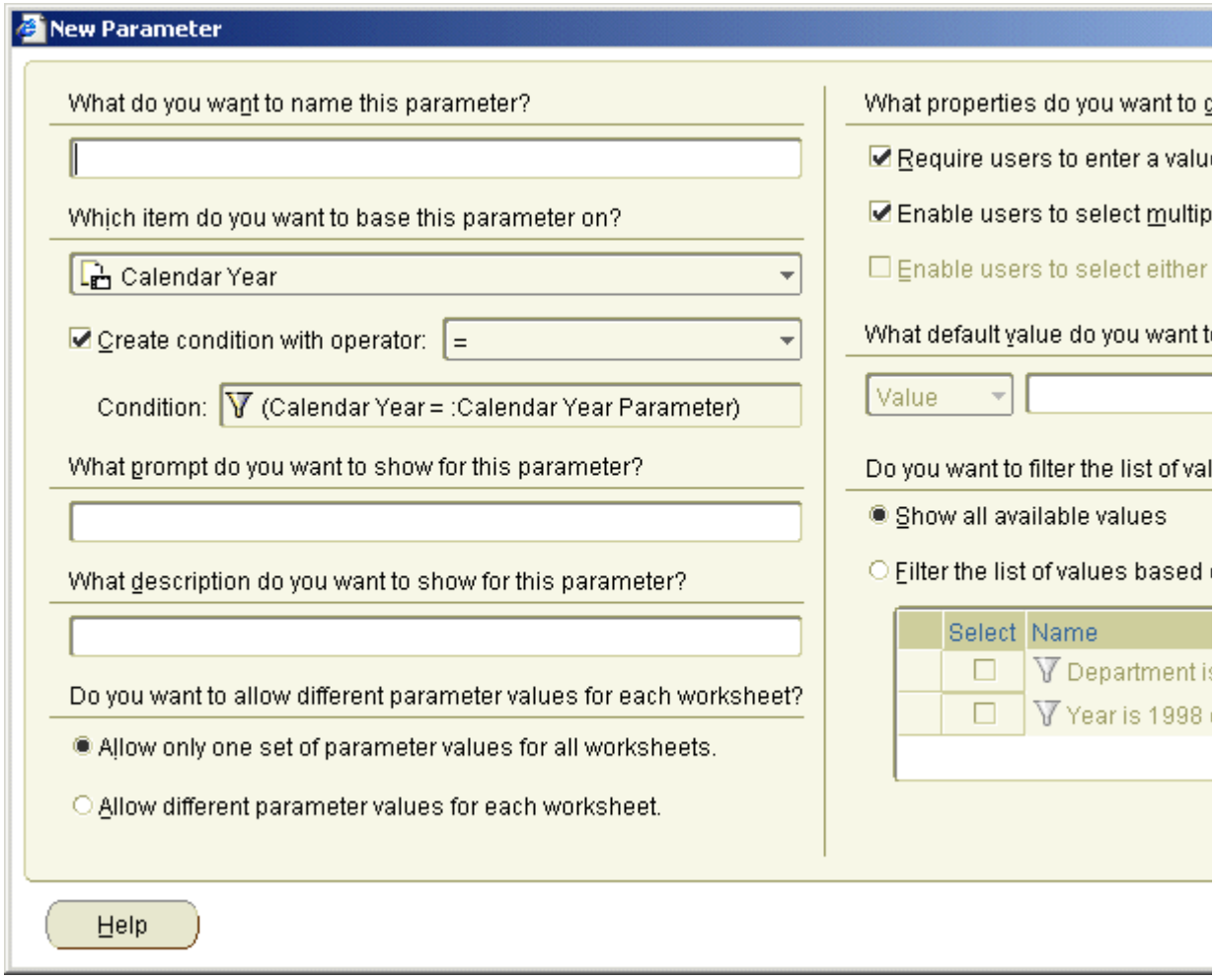
- To update the workbook or worksheet with a different parameter value, choose Tools | Parameter Values to display the "Edit Parameter Values dialog" and enter a new value.
- On the "Edit Worksheet dialog: Parameters tab", the status of parameters is displayed in the **Order** column. To activate and deactivate parameters you must modify the condition or calculation used with a parameter to change 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 the item on which to base the parameter from the**Which item do you want to base your parameter on?** list, as follows:

- If you want the parameter to use a condition to filter the worksheet, select the item you want to filter on. Ensure that the **Create condition with operator** check box is selected so that a condition is automatically created to filter the worksheet using the item selected. For example, to filter a worksheet on calendar year, you might choose Calendar Year here.
- 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. Use the **Create condition with operator** check box to specify whether Discoverer creates a condition to use with this parameter as follows:
   - Select the **Create condition with operator** check box to create a condition based on the item that you selected for this parameter. Select an operator to use with the condition from the drop down list (for example, =, <, >).

     When a parameter uses a condition it enables you to filter worksheets according to parameter values that you enter when you run the worksheet. For example, if you create a parameter based 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.
   - Clear the **Create condition with operator** check box not to create a condition to use with this parameter.
7. (optional) Enter an instruction or question into the **What prompt do you want to show for this parameter?** field.

   Discoverer displays this prompt to users when they open or refresh the worksheet, and tells them what value to enter.
8. (optional) Enter a brief description into the **What description do you want to show for this parameter?** field.

   Discoverer displays this text on the Edit Parameter Values dialog to help users decide what parameter value to enter.
9. (optional) Click one of the following options:

   Click the **Allow only one set of parameter values for all worksheets** option to apply the same set of parameter values to all worksheets in the workbook.

   Click the **Allow different parameter values for each worksheet** option to enable different parameter values to be specified for each worksheet.
10. (optional) Select the **Require users to enter a value** check box to make worksheet users enter a parameter value.

    When you select this check box, users must enter a value for the parameter to display the worksheet.
11. (optional) Select the **Enable users to select multiple values** check box to enable worksheet users 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 data for 2001 and 2002.

12. (optional) Select the **Enable users to select either indexes or values** check box to enable users to choose whether they want Discoverer to display parameter values with index numbers (for example, (1) January, (2) February) or without index numbers (for example, January, February) in the "Edit Parameter Values dialog".

    Note: The **Enable users to select either indexes or values** check box is only displayed if the item that is used as a parameter has been set up by the Discoverer Manager to reference an indexed item.

    For more information about the <**Index and Value**> drop down list, see the "About using indexes and values in parameters".

13. (optional) If required, enter a default value in the **What default value do you want to give this Parameter?** field.

    Here, you can do the following:

    - Select either Index or Value from the drop down list (only displayed if you selected the **Enable users to select either indexes or values** check box) to display parameter values with or without index numbers.
    - Enter a default value directly into the **<values>** field.
    - If a list of values is available for this parameter, 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 you want to use. For more information, see "Using lists of values (LOVs)".

14. (optional) Click one of the following options:

    Click the **Show all available values** option to display all parameter values to the user.

    Click the **Filter the list of values based on the selected conditions** option to activate a list of conditions that can be used to filter the parameter values displayed to the user.

    Note: You might use this setting if you have very long lists of parameter values, and you want to improve performance by reducing the number of values that are displayed to the user.

    Select a check box for each condition you want to use to filter the list of parameter values displayed to the user (only available if you clicked the **Filter the list of values based on the selected conditions** option).

    For more information, see "About filtering lists of parameter values based on selected conditions (cascading parameters)".

15. Click OK to save the details and display the "Edit Worksheet dialog".

    If you created a parameter to filter the worksheet, the check box next to the parameter is selected (that is, parameter is active).

16. Click OK to close the Edit Worksheet dialog and return to the worksheet.

    If the new parameter is active, Discoverer displays the "Edit Parameter Values dialog", which enables you to specify parameter values for active parameters. The worksheet is updated according to parameter values entered (for more information, see "How to set parameters").

Notes

- You can also create a parameter in the following ways:
    - Select the New Parameter option on the Standard toolbar to display the "New Parameter dialog". For more information about the Standard toolbar, see "About the Standard toolbar".

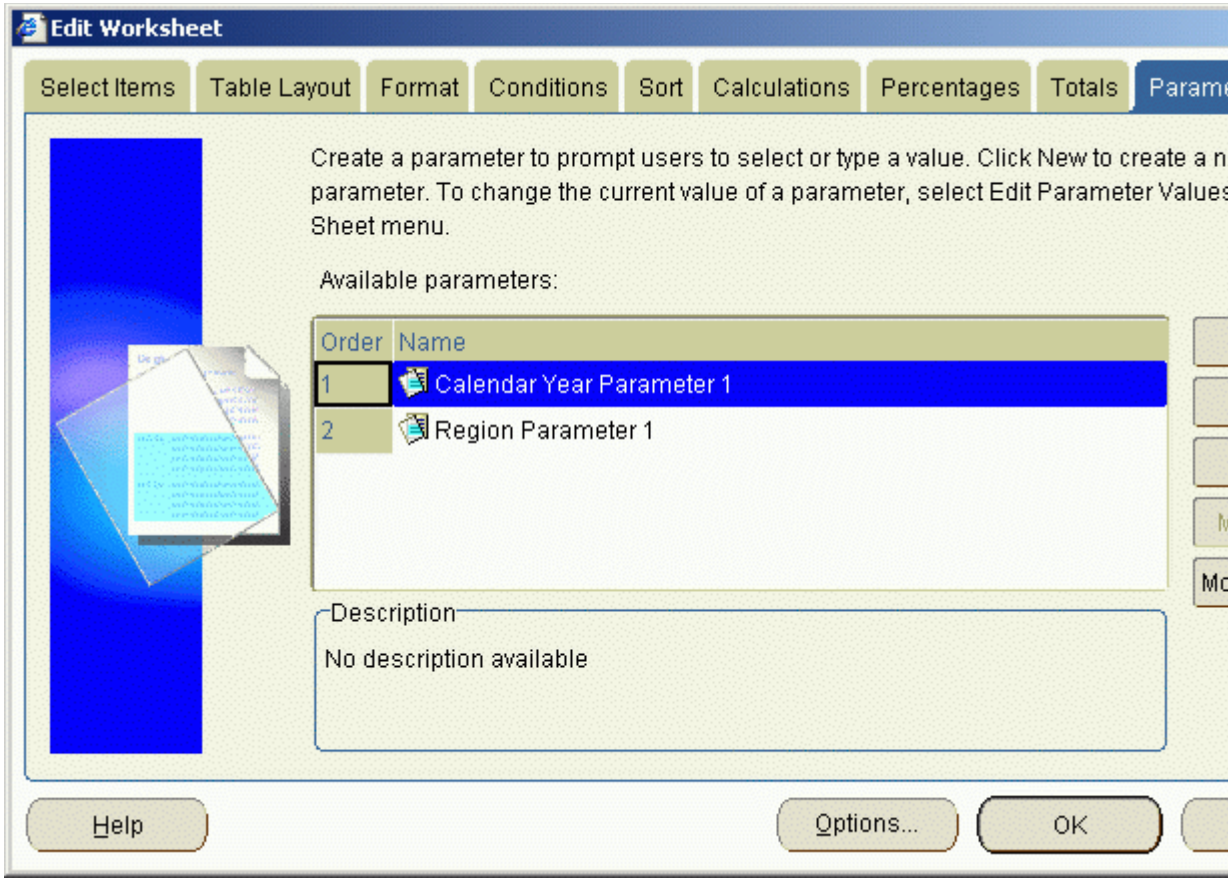
How to delete parameters

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 (for more information, see "How to deactivate parameters").

To delete a parameter:

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



3. Select the parameter 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 dialog and return to the worksheet.

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

Notes

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

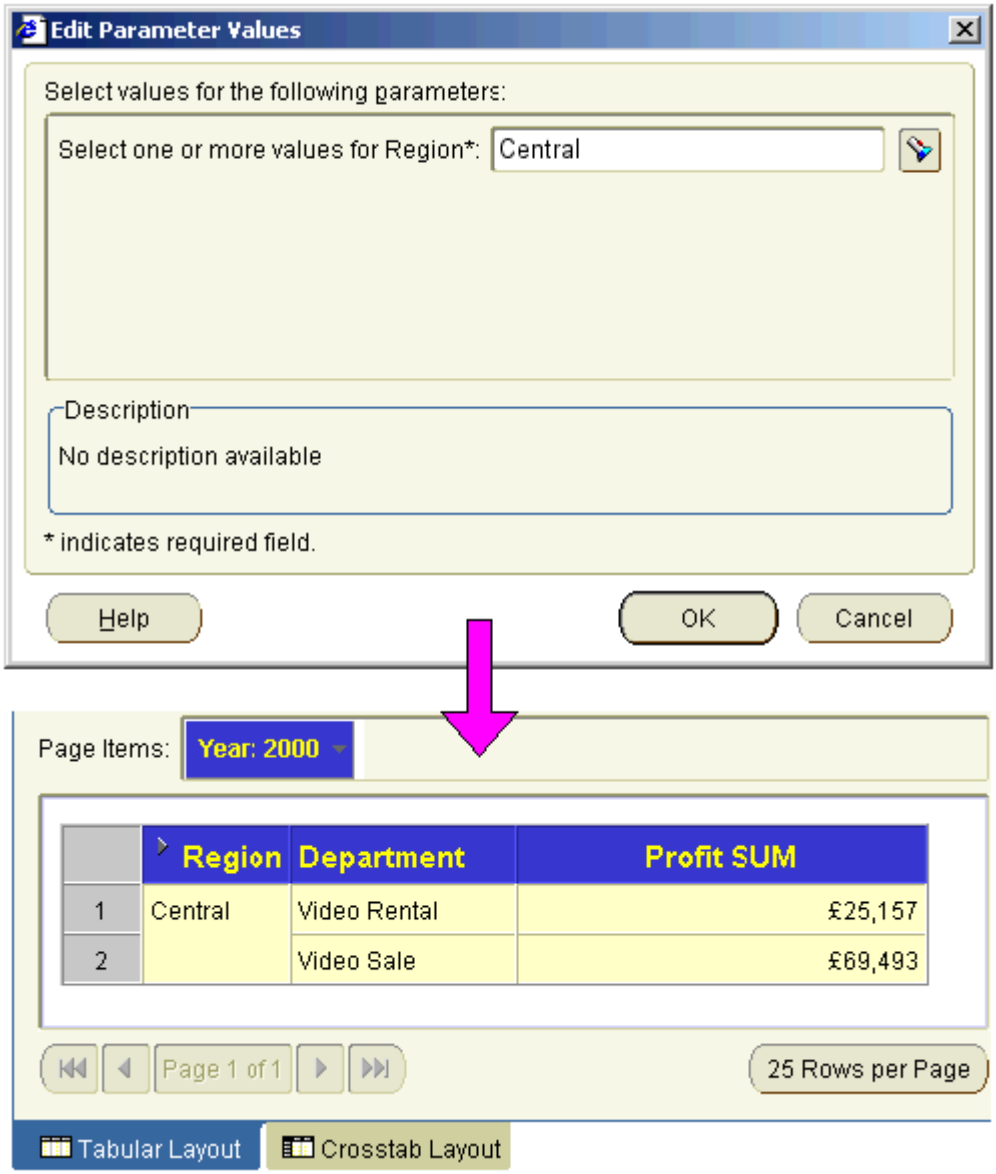
Examples of parameters

This section contains examples of using parameters in Discoverer.

Example 1: Using a parameter to filter a worksheet

In this example you 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.

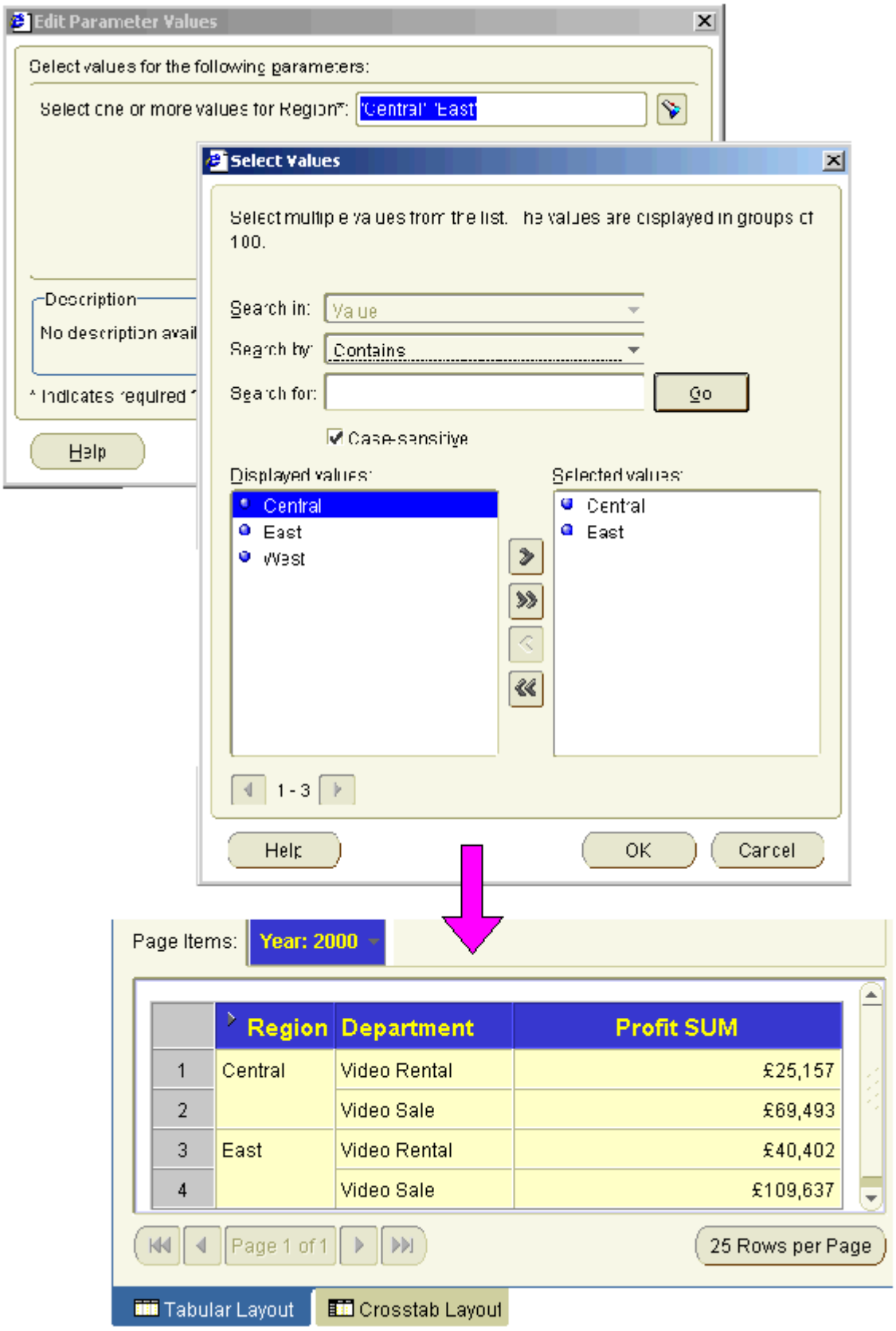
A parameter value being used to filter a worksheet



Example 2: Using a parameter that enables multiple values to filter a worksheet

In this example you want worksheet users to select multiple regions with which to analyze data. 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.

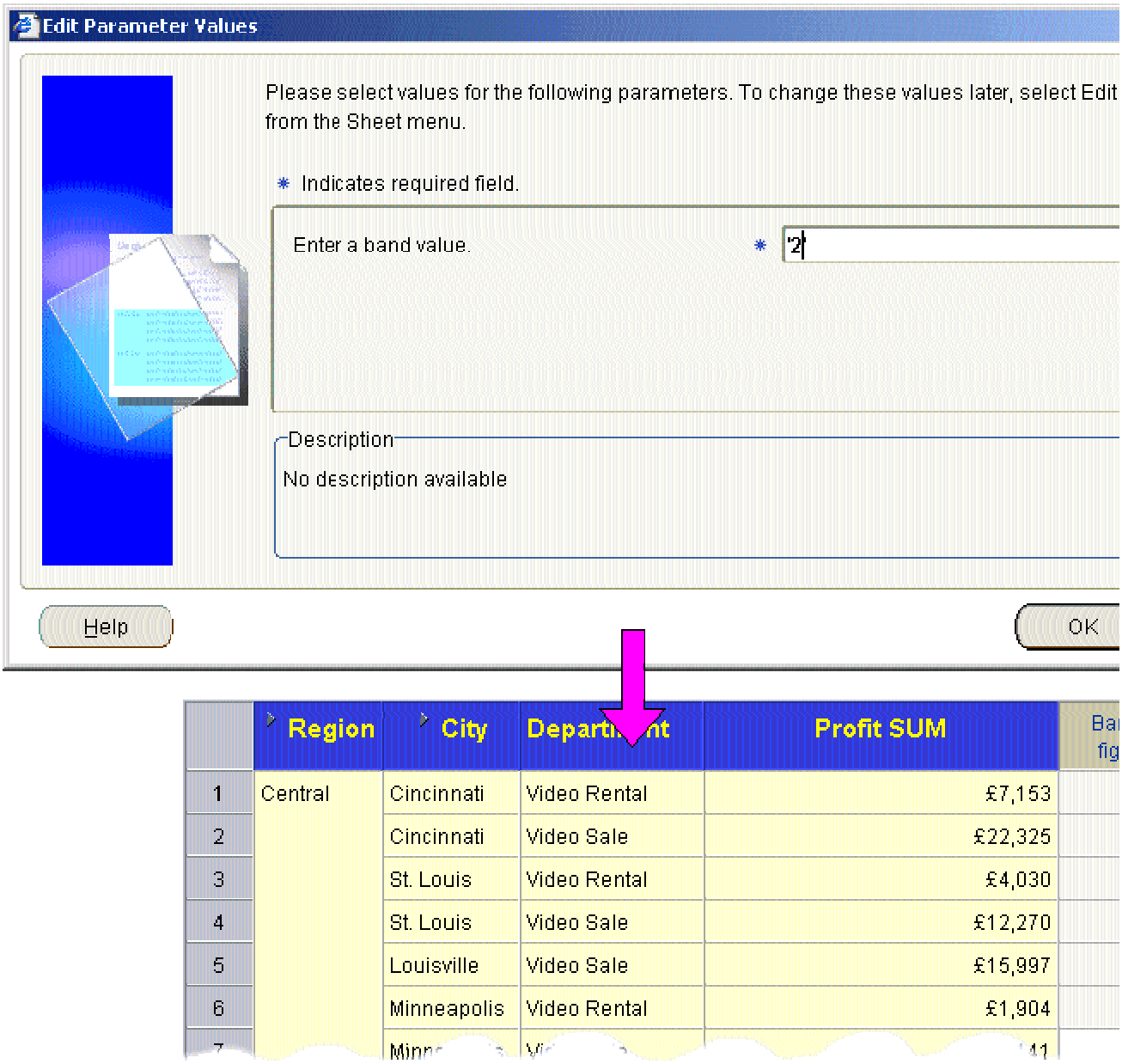
A parameter enabling multiple values being used to filter a worksheet



Example 3: Using a parameter to collect dynamic user input

In this 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.

A parameter used to provide dynamic input to a banding calculation



Using conditional formatting

This chapter explains how to use Discoverer Plus Relational's conditional formatting to answer typical business questions, and contains the following topics:

What is conditional formatting?

Conditional formatting is the use of conditional formats and stoplight formats or (or traffic light formats) to highlight worksheet values.

What is a conditional format?

A conditional format enables you to highlight worksheet values that meet a specific condition. For example, you might want to highlight profit values greater than 30,000.

Note: In Discoverer Desktop, conditional formats are known as exceptions.

In the example below, a conditional format highlights Profit SUM values greater than 30,000. The Profit SUM figures for Cincinnati and Louisville are displayed with a blue background because they are greater than 30,000.

A Discoverer worksheet using a conditional format

	Region	City	Profit SUM
1	Central	Chicago	$7,948
2		Cincinnati	$31,112
3		Dallas	$8,733
4		Louisville	$31,883
5		Minneapolis	$8,550
6		Nashville	$8,639
7		St. Louis	$19,310
8			Total for Central: $116,174

What is a stoplight format?

A stoplight format (or traffic light format) enables you to categorize numeric worksheet values as unacceptable, acceptable, and desirable using different colors. The default stoplight format uses the familiar red, yellow, and green color scheme to represent unacceptable, acceptable, and desirable values.

For example, you might want to categorize performance based on profit values where:

- values below 10,000 are unacceptable, and are shown in red
- values between 10,000 and 30,000 are acceptable, and are shown in yellow
- values greater than 30,000 are desirable, and are shown in green

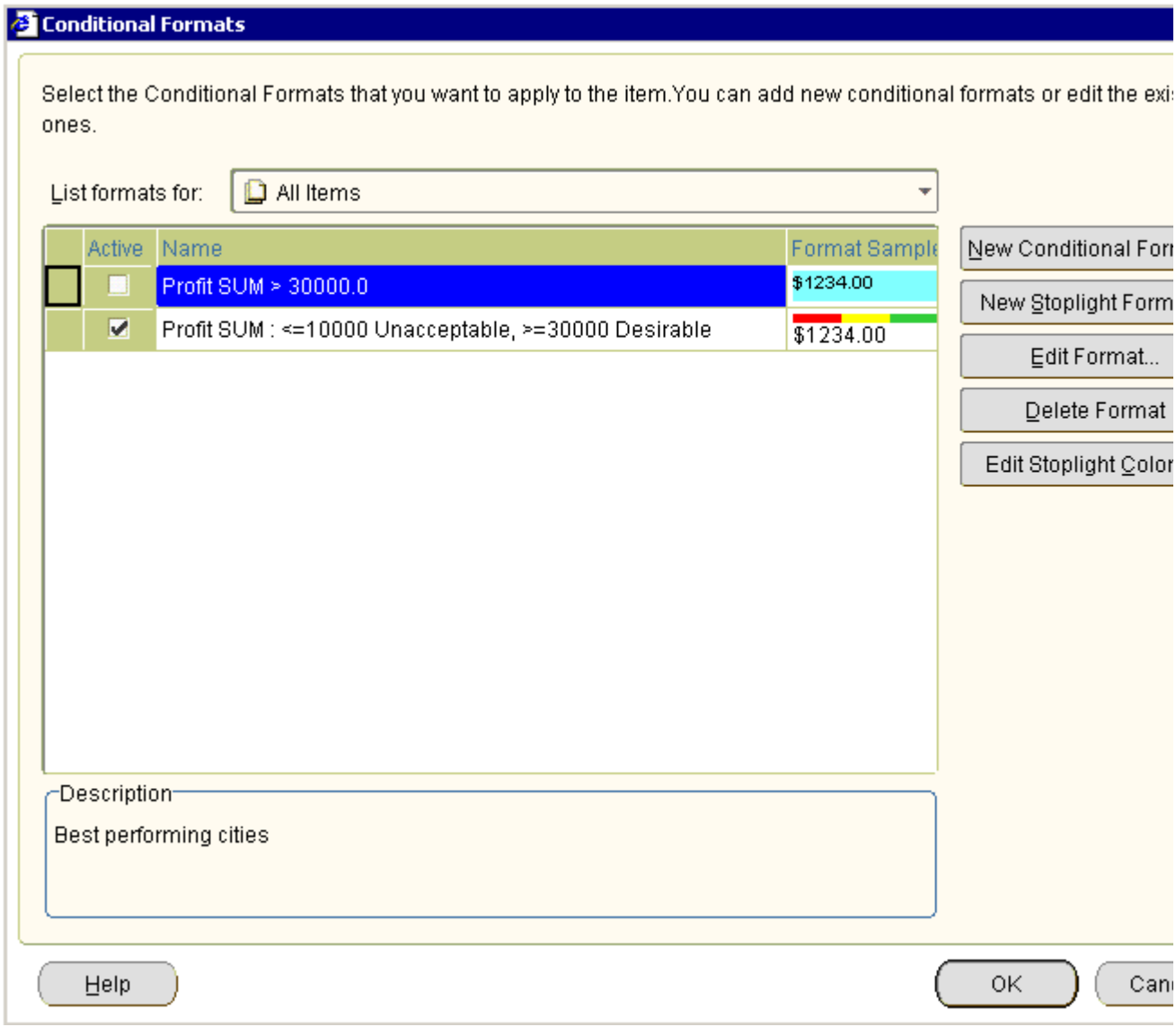
In the example below, a stoplight format based on the above values is used to categorize Profit SUM values. Values in the unacceptable category are show in red (for example, Chicago and Dallas). Values in the acceptable category are shown in yellow (for example, St. Louis and Washington). Values in the desirable category are shown in green (for example, Cincinnati and Louisville).

A Discoverer worksheet using a stoplight format

	Region	City	Profit SUM
1	Central	Chicago	$7,948
2		Cincinnati	$31,112
3		Dallas	$8,733
4		Louisville	$31,883
5		Minneapolis	$8,550
6		Nashville	$8,639
7		St. Louis	$19,310
8	East	Washington	$23,304
9		Pittsburgh	$16,465
10		Philadelphia	$22,657
11		New York	$76,064
12		New Orleans	$10,953
13		Miami	$6,300

About managing conditional formatting

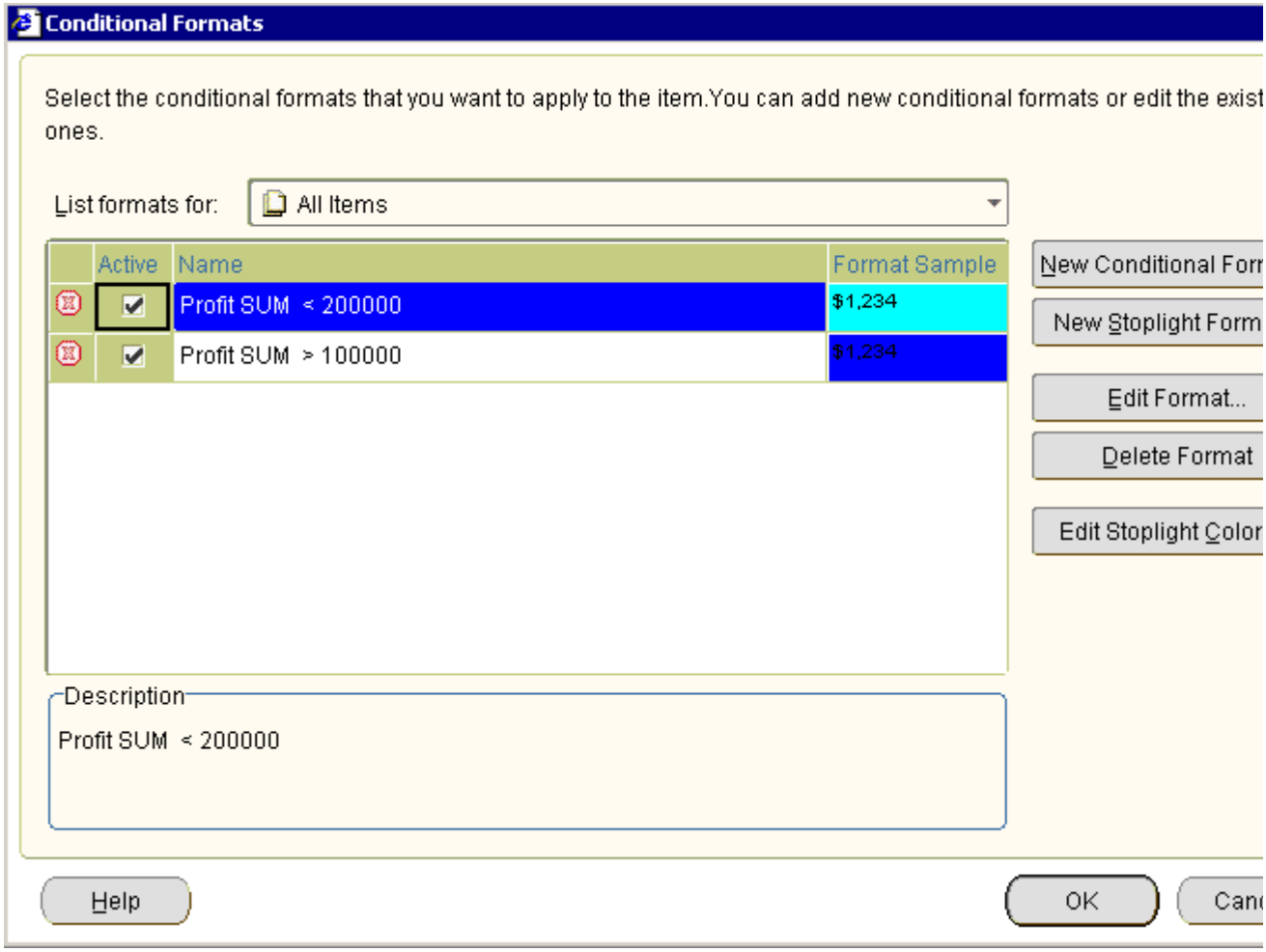
You use the Conditional Formats dialog to manage conditional formats and stoplight formats. The **Active** column indicates whether formats are active (that is, currently applied to the worksheet).



You can create conflicting conditional formats for a worksheet item, providing that they are not active on the same worksheet at the same time. For example, the follow conditional formats overlap:

- display Profit SUM values greater than 100,000 in dark blue
- display Profit SUM values less than 200,000 in light blue

In the example below, Discoverer displays a red cross next to conflicting conditional formats. You must deactivate (that is, clear the**Active** check box next to) one of the conflicting conditional formats to continue. In the example below, you must deactivate either the Profit SUM > 10000 format or the Profit SUM < 200000 format to continue.



You cannot activate a conditional format and a stoplight format on the same worksheet item at the same time. For example, to activate a stoplight format on a worksheet item that has a active conditional format, you must de-activate the existing conditional format for that worksheet item.

Notes on using conditional formats and stoplight formats

When you use conditional formats and stoplight formats, note the following points:

- Conditional formats that you create in Discoverer Plus Relational are available in Discoverer Viewer and Discoverer portlets (that is, created using Discoverer Portlet Provider). You can also change the thresholds for stoplight formats in Discoverer Viewer and Discoverer portlets. For example, in Discoverer Plus Relational you might create a stoplight format that displays profit increases of more than 25% as desirable (that is, in green). When an end user accesses this worksheet in Discoverer Viewer, they can change the threshold for the desirable category from 25% to 30%.
- Conditional formats created in Discoverer Plus Relational are visible in Discoverer Desktop.
- You can create conditional formats on both numeric and non-numeric worksheet items (for example, text worksheet items). For example, you can create a conditional format for Location = "New York", or Profit SUM > 30,000.
- You can only create stoplight formats on numeric worksheet items.
- Stoplight colors are applied to all stoplight formats in a worksheet. If you change the stoplight colors, Discoverer applies the changes to existing and new stoplight formats in the current worksheet (for more information, see"How to change the color of stoplight formats").

How to activate and deactivate conditional formats and stoplight formats

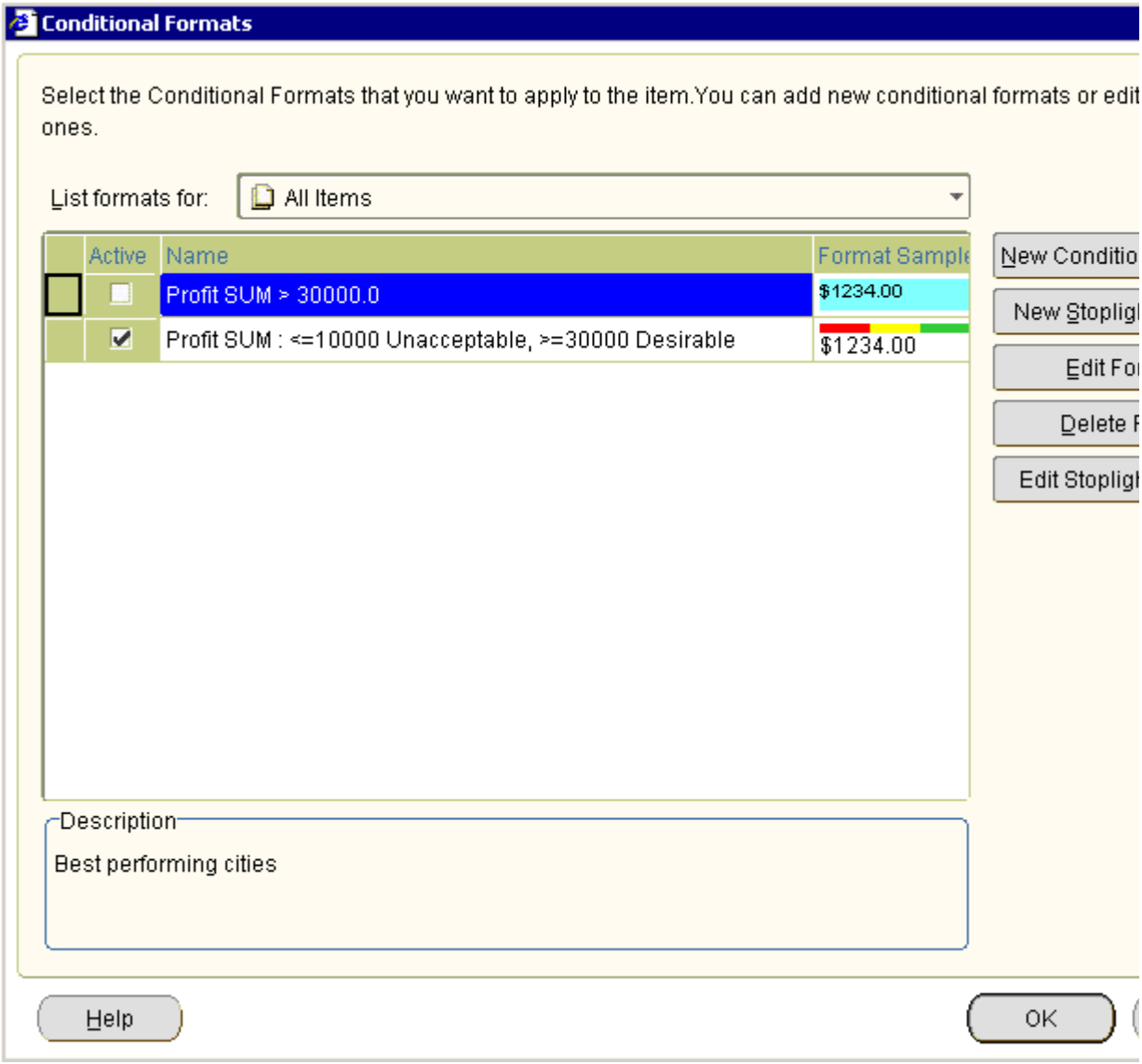
You activate conditional formats and stoplight formats when you want to highlight worksheet values. For example, you might want to highlight profit values greater than 30,000 using a conditional format.

You deactivate conditional formats and stoplight formats when you no longer want to highlight worksheet values, but you do not want to delete the format being used. Or you might want to resolve a conflict between two conditional formats. For example, to activate a stoplight format on a worksheet item that has a active conditional format, you must de-activate the existing conditional format for that worksheet item.

Note: To remove a conditional format permanently from a worksheet, delete the conditional format (for more information, see "How to delete conditional formats and stoplight formats").

To activate and deactivate conditional formats and stoplight formats:

1. Display the worksheet you want to format.
2. Choose Format | Conditional Formats to display the "Conditional Formats dialog".



The Conditional Formats dialog displays a list of existing conditional formats and stoplight formats that are available in the worksheet. The check box in the**Active** column next to each format indicates whether the format is activated in the current worksheet.

3. Activate or deactivate the conditional format as follows:
    - To activate a conditional format or stoplight format, select the check box in the**Active** column next to the format.
    - To deactivate a conditional format or stoplight format, clear the check box in the**Active** column next to the format.
4. Click OK to save the changes that you have made and close the Conditional Formats dialog.

    The worksheet is updated with the formatting changes that you have made.

Notes

- You can also activate or deactivate conditional formats in the following way:

- Right-click on the worksheet data area, select the Conditional Formats option to display the "Conditional Formats dialog", and select or clear the**Active** check box next to the format.

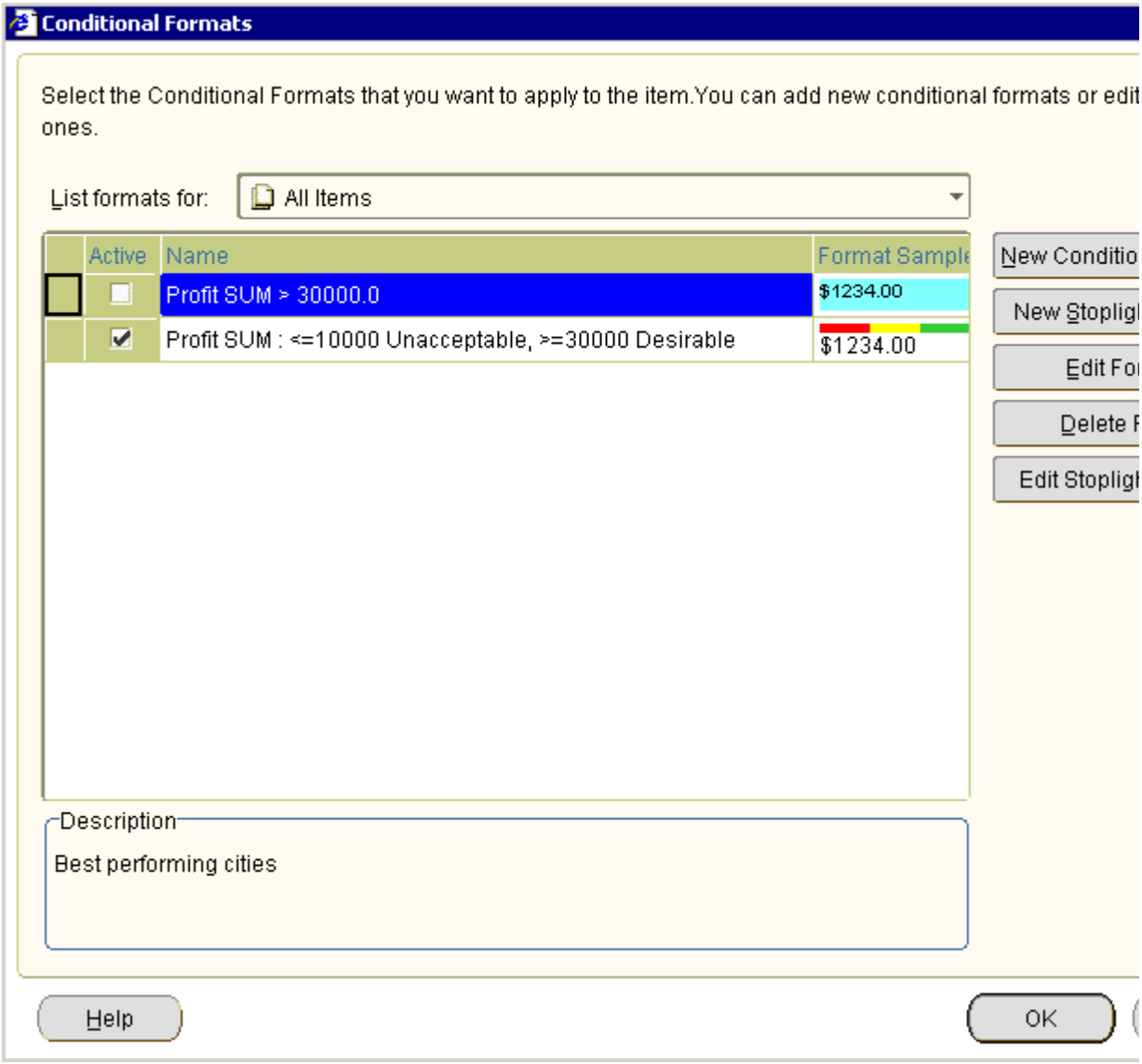
How to create conditional formats

You create a conditional format when you want to highlight worksheet values that meet a specific condition. For example, you might want to highlight percentage values greater than 75% by displaying them with a blue background.

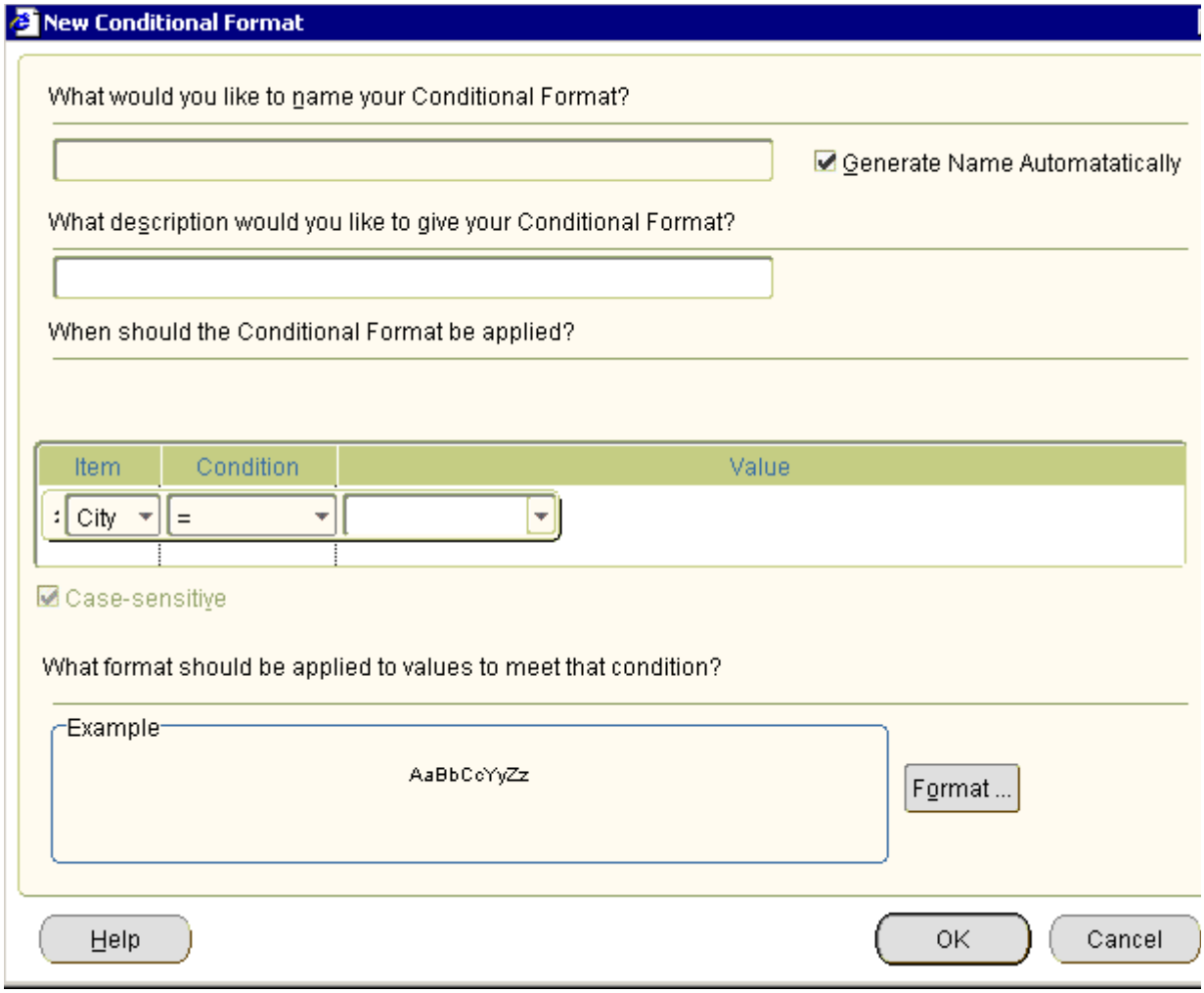
Note: To categorize worksheet values as unacceptable, acceptable, and desirable using color and text formatting, you create a stoplight format and not a conditional format (for more information, see"How to create stoplight formats").

To create a conditional format:

1. Display the worksheet you want to format.
2. (optional) Select the worksheet item you want to format by clicking on the worksheet column or row.
3. Choose Format | Conditional Formats to display the "Conditional Formats dialog".



4. Click New Conditional Format to display the"New Conditional Format dialog".



Note: If you first selected a worksheet item in step 2, the worksheet item is selected by default in the **Item** field.

5. Specify how you want to highlight worksheet values, as follows:

   - (Optional) Use the **What would you like to name your Conditional Format?** field to create a user-friendly name for the format to be used throughout Discoverer.
   - Use the **When should the Conditional Format be applied?** fields (that is, **Item**, **Condition**, and **Value**) to create the condition you want to apply.

     Hint: Use the **Item** field to select the worksheet item you want to format. Use the **Format** field to select the conditional operator (for example, = for equals, > for greater than, < for less than) you want to use. Use the **Value** field to enter the value you want to match against. For example, choose Profit SUM > 30,000 to highlight Profit SUM values that are greater than 30,000.
   - Click Format to display the "Format Data dialog: Format tab" dialog, which enables you to change the color of and text style for the worksheet value specified in the **Item** field.

6. Click OK to save changes that you have made and close the New Conditional Format dialog.
7. Click OK to close the Conditional Formats dialog.

   The worksheet is updated with the formatting changes that you have made.

Notes

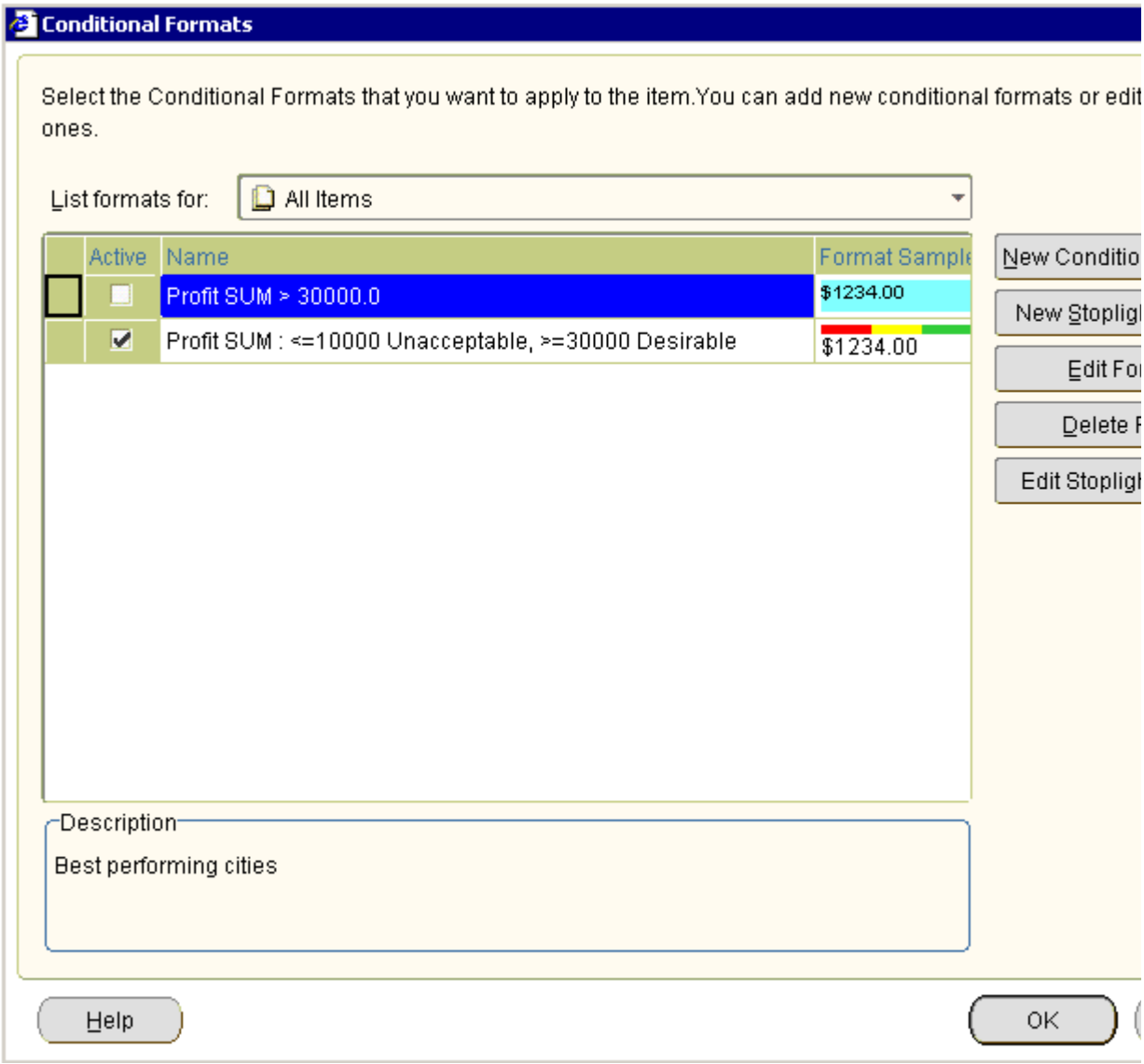
- You can also create a conditional format in the following ways:
    - Select the Conditional Format option on the Formatting toolbar to display the "New Conditional Format dialog". For more information about toolbars, see "About the Formatting toolbar".
    - Right-click on the worksheet data area, and select the Conditional Format option to display the "Conditional Formats dialog", and click New Conditional Format.

How to create stoplight formats

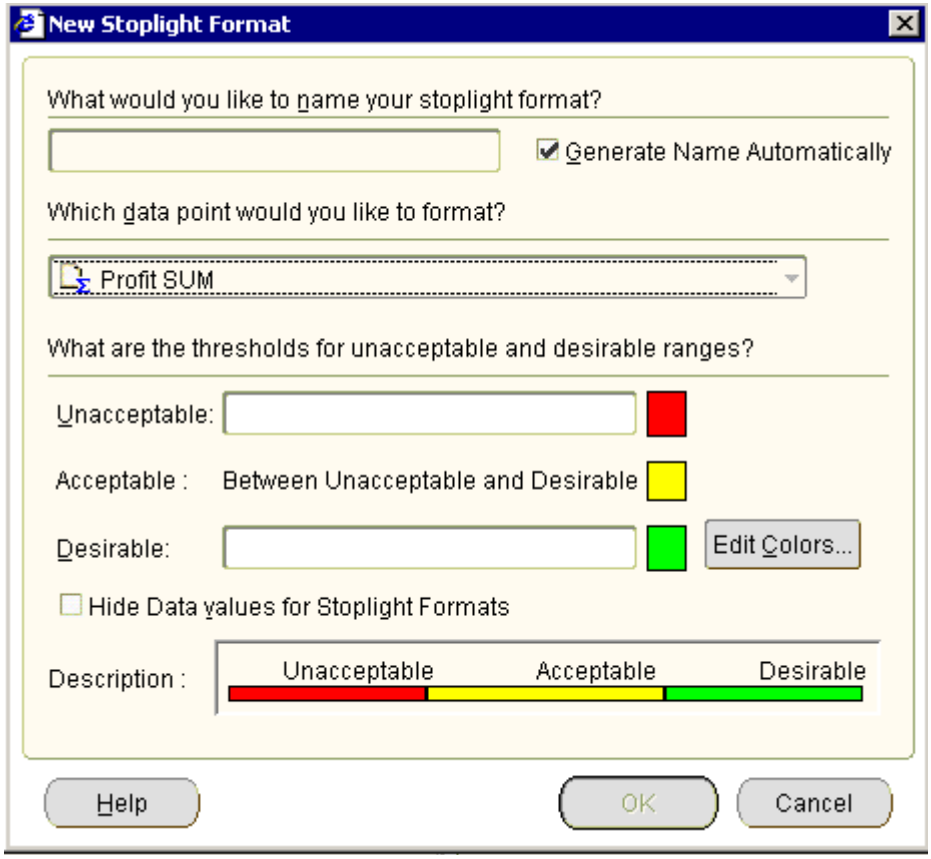
You create a stoplight format when you want to categorize numeric worksheet values as unacceptable, acceptable, and desirable using text and color formatting. For example, you might want to display low cost values in green, medium cost values in yellow, and high cost values in red.

To create a stoplight format:

1. Display the worksheet you want to format.
2. (optional) Select the worksheet item you want to format by clicking on the worksheet column or row.
3. Choose Format | Conditional Formats to display the "Conditional Formats dialog".



4. Click New Stoplight Format to display the "New Stoplight Format dialog".



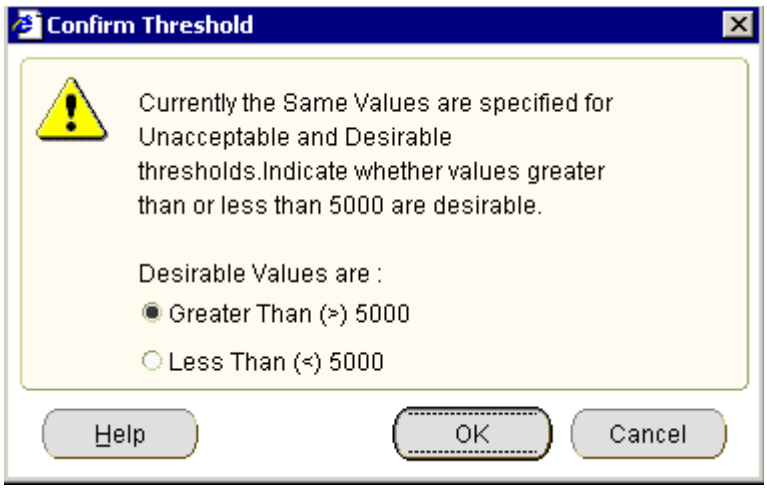
Note: If you first selected a worksheet item in step 2, the worksheet item is selected by default in the **Which data point would you like to format?** field.

5. Specify how you want to categorize worksheet values, as follows:
    - (Optional) Use the **What would you like to name your stoplight format?** field to create a user-friendly name for the format to be used throughout Discoverer.
    - If you did not select a worksheet item in step 2, use the **Which data point would you like to format?** field to select the worksheet item you want to format.
    - Use the **Unacceptable?** field to specify the value for the lower threshold. For example, enter 100000 to highlight values less than 100,000 as unacceptable.
    - Use the **Desirable?** field to specify the value for the higher threshold. For example, enter 500000 to highlight values greater than 500,000 as desirable.
    - To change the default stoplight colors (that is, red, yellow, and green), click Edit Colors to display the "Stoplight colors dialog" dialog, which enables you to edit the stoplight colors.
6. Click OK to save changes that you have made and close the New Stoplight Format dialog.
7. Click OK to close the Conditional Formats dialog.

   The worksheet is updated with the formatting changes that you have made.

Notes

- If you enter the an invalid value in either the **Unacceptable** and the **Desirable** fields, the "Confirm Threshold dialog" is displayed, which prompts you to specify a threshold correctly. For example, if you enter the same value in both the **Unacceptable** field and the **Desirable** field, Discoverer prompts you to specify the thresholds correctly as follows:



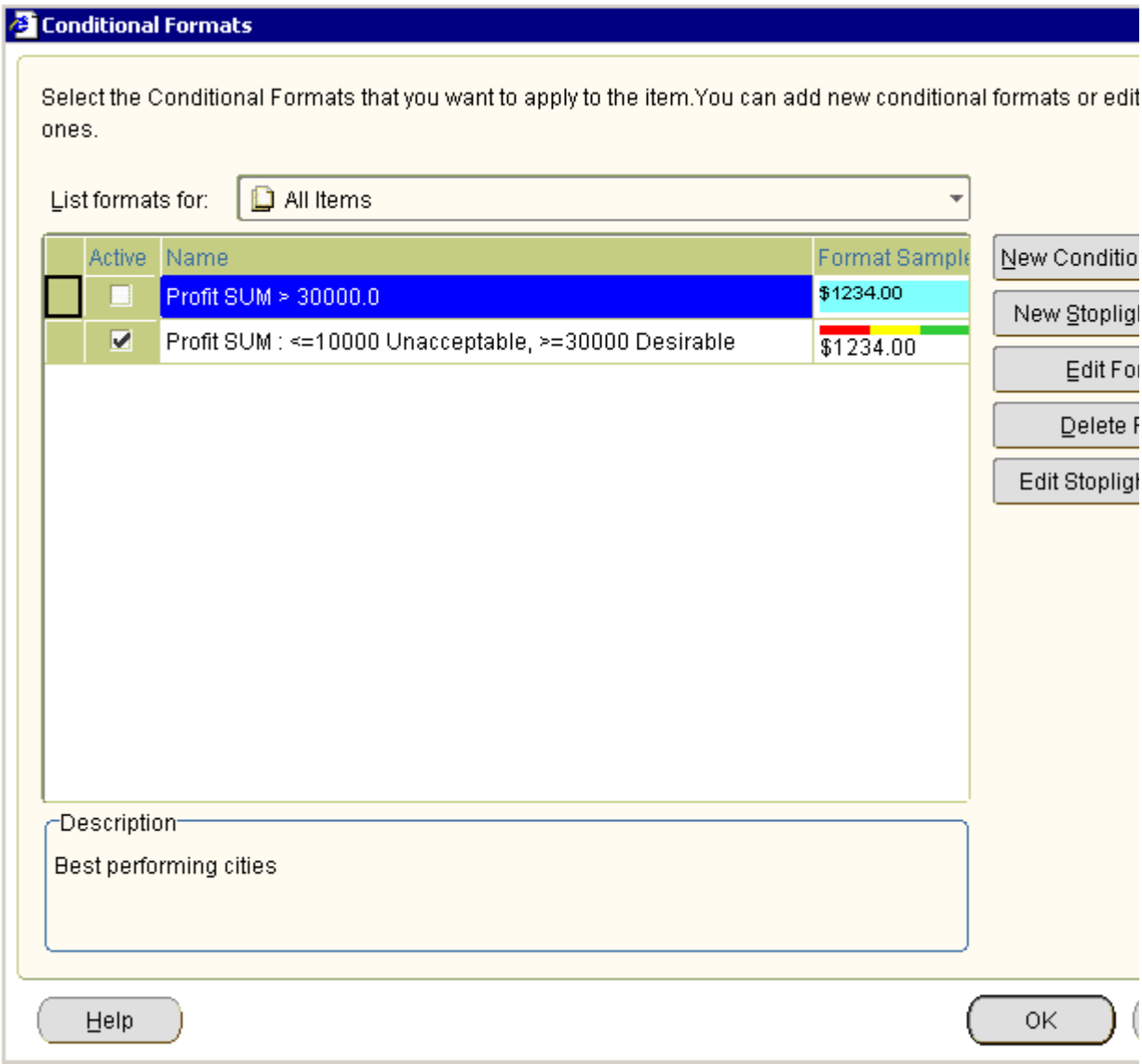
- You can also create a stoplight format in the following ways:
  - Select the Stoplight Format option on the Formatting toolbar to display the "New Stoplight Format dialog". For more information about toolbars, see "About the Formatting toolbar".
  - Right-click on the worksheet data area, and select the Conditional Format option to display the "Conditional Formats dialog", and click New Stoplight Format.

How to edit conditional formats and stoplight formats

You edit an existing conditional format or stoplight format to change how Discoverer highlights worksheet values. For example, you might want to change a stoplight color to improve a printed report.

To edit a conditional format or stoplight format:

1. Open the workbook that contains the worksheet you want to edit.
2. Choose Format | Conditional Formats to display the "Conditional Formats dialog".



3. Select a conditional format or stoplight format in the conditional format list.
4. Click Edit Format to display either the Edit Conditional Format dialog or the Edit Stoplight Format dialog (depending on the type of conditional format you selected).

5. Make changes to the format as required.
6. Click OK to save the changes that you have made.
7. Click OK to close the Conditional Formats dialog.

   The worksheet is updated with the formatting changes that you have made.

Notes

- You can also edit a conditional format in the following way:
    - Right-click on the worksheet data area, and select the Conditional Format option to display the "Conditional Formats dialog", and click New Stoplight Format.

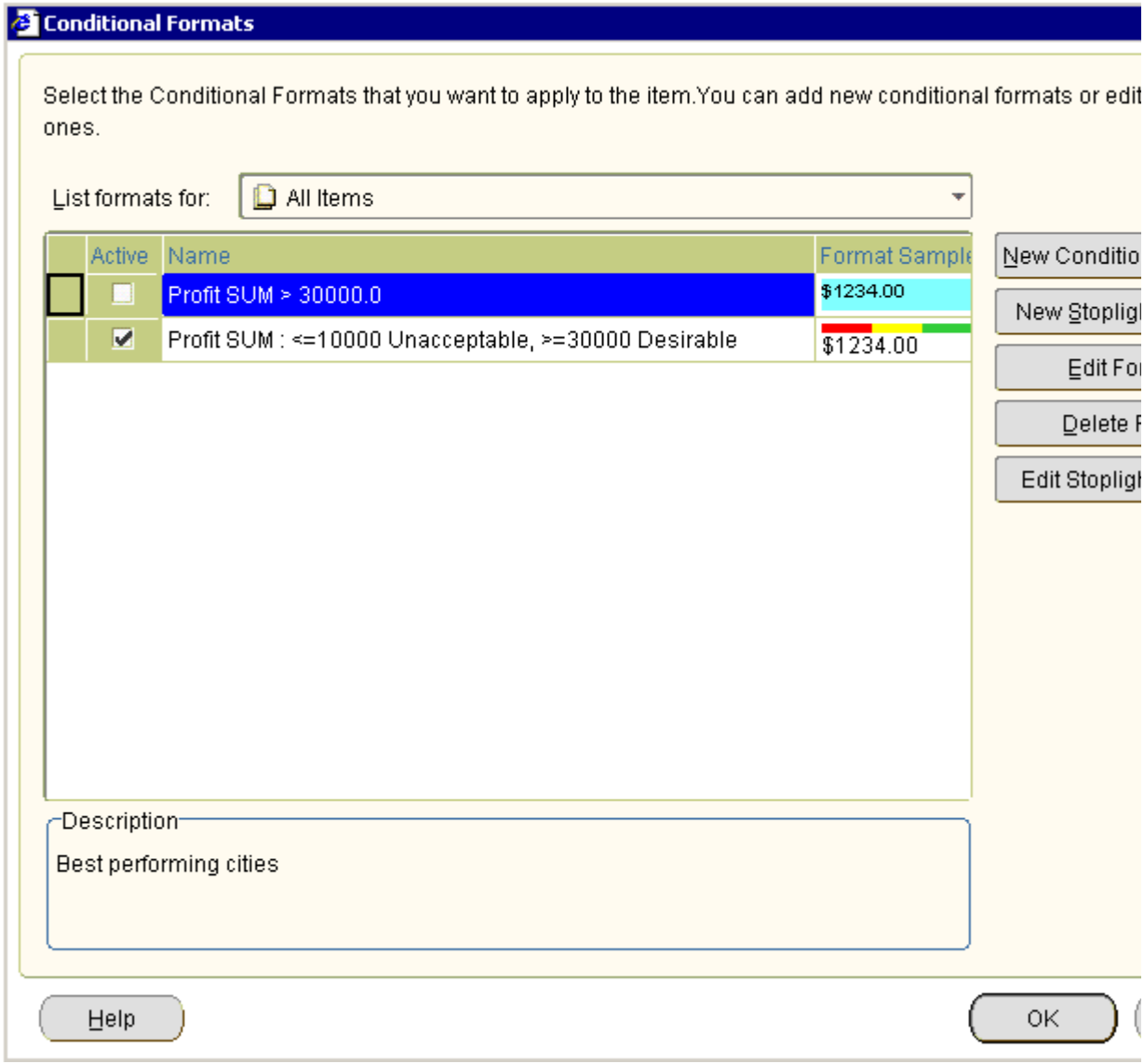
How to delete conditional formats and stoplight formats

You delete a conditional format or stoplight format to remove it permanently from a worksheet. For example, you might want to remove conditional formats that you no longer need.

Hint: If you think you might need a conditional format or stoplight format later, consider deactivating it (for more information, see "How to activate and deactivate conditional formats and stoplight formats").

To delete a conditional format:

1. Open the workbook that contains the worksheet you want to format.
2. Choose Format | Conditional Formats to display the "Conditional Formats dialog".



3. Select a conditional format or stoplight format in the conditional format list.
4. Click Delete Format to remove the format from the worksheet.
5. Click OK to close the Conditional Formats dialog.

The worksheet is updated with the formatting changes that you have made.

Notes

- You can also delete a conditional format in the following ways:
    - Right-click on the worksheet data area, and select the Conditional Format option to display the "Conditional Formats dialog", select a format in the list and click Delete Format.
    - If the Selected Items pane is displayed, either select the item and select the Delete option on the Selected Items pane toolbar, or right-click over the item and select the Delete option from the right-click menu.

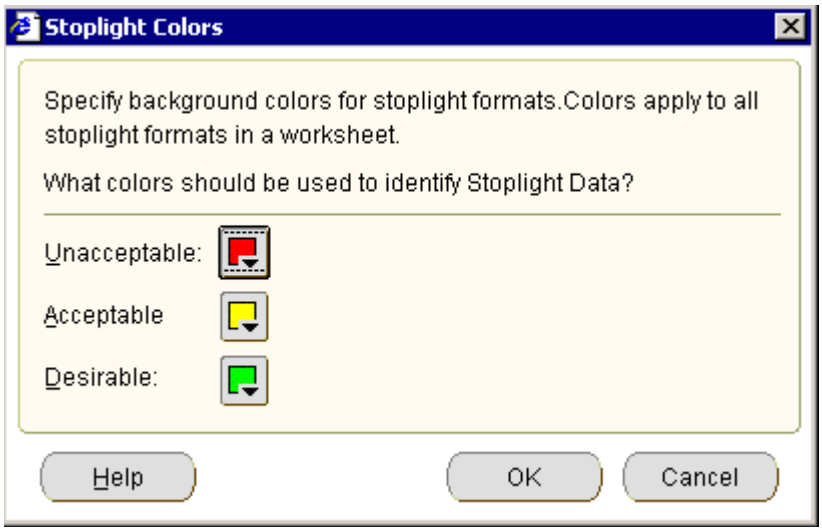
How to change the color of stoplight formats

You change the color of stoplight formats to change the default colors that categorize worksheet values as unacceptable, acceptable, and desirable. For example, you might want to change the color for the acceptable category from the default color (that is, yellow) to blue. Discoverer applies colors that you specify to all existing and new stoplight formats in the current worksheet.

Note: To change the default stoplight colors for all stoplights in Discoverer Plus Relational, choose Tools | Options | Formats and select the Stoplight Color Format option.

To change the color of stoplight colors:

1. Open the workbook that contains the worksheet you want to format.
2. Choose Format | Conditional Formats to display the "Conditional Formats dialog".
3. Click Edit Stoplight Colors to display the "Stoplight colors dialog".



4. Change the color of the categories as required.
5. Click OK to save changes that you have made.
6. Click OK to close the Conditional Formats dialog.

   The worksheet is updated with the formatting changes that you have made.

Notes

- You can also edit stoplight colors in the following way:
  - Right-click on the worksheet data area, and select the Conditional Format option to display the "Conditional Formats dialog", and click Edit Stoplight Colors.

Examples of conditional formatting

This section includes examples of conditional formats and stoplight formats in Discoverer.

Example 1: Conditional format to highlight Profit SUM values greater than 30000

In this example, you want to analyze performance by highlighting Profit SUM values greater than 30,000 with a blue background.

You create a conditional format on the Profit SUM worksheet item. In the worksheet example below, the Profit SUM values for Cincinnati, Louisville, and New York are highlighted with a blue background because they are greater than 30,000.

A Discoverer worksheet using a conditional format

	Region	City	Profit SUM
1	Central	Chicago	$7,948
2		Cincinnati	**$31,112**
3		Dallas	$8,733
4		Louisville	**$31,883**
5		Minneapolis	$8,550
6		Nashville	$8,639
7		St. Louis	$19,310
8	East	Washington	$23,304
9		Pittsburgh	$16,465
10		Philadelphia	$22,657
11		New York	**$76,064**
12		New Orleans	$10,953
13		Miami	$6,300
14		Boston	$16,706
15		Atlanta	$6,968

Example 2: Stoplight format to categorize Profit SUM values on a table worksheet

In this example, you want to analyze performance by categorizing profit values on a table worksheet, as follows:

- display profit values less than 10,000 in the unacceptable category (with a red background)
- display profit values between 10,000 and 30,000 in the acceptable category (with a yellow background)
- display profit values greater than 30,000 in the desirable category (with a green background)

You create a stoplight format on the Profit SUM worksheet item. In the worksheet example below, a stoplight format based on these categories is applied to Profit SUM values in a table worksheet. Values in the unacceptable category are show in red (for example, Chicago and Dallas). Values in the acceptable category are shown in yellow (for example, St. Louis and Washington). Values in the desirable category are shown in green (for example, Cincinnati and Louisville).

A Discoverer worksheet using a stoplight format

	Region	City	Profit SUM
1	Central	Chicago	$7,948
2		Cincinnati	$31,112
3		Dallas	$8,733
4		Louisville	$31,883
5		Minneapolis	$8,550
6		Nashville	$8,639
7		St. Louis	$19,310
8	East	Washington	$23,304
9		Pittsburgh	$16,465
10		Philadelphia	$22,657
11		New York	$76,064
12		New Orleans	$10,953
13		Miami	$6,300

Example 3: Stoplight format to categorize hidden Profit SUM values on a crosstab worksheet

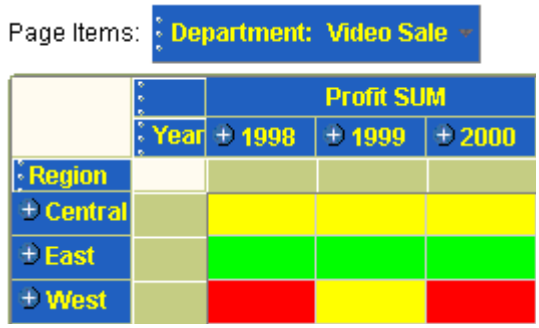
In this example, you want to analyze performance by categorizing regions based on profit values that are hidden on a crosstab worksheet, as follows:

- display profit values less than 60,000 in the unacceptable category (with a red background)
- display profit values between 60,000 and 100,000 in the acceptable category (with a yellow background)
- display profit values greater than 100,000 in the desirable category (with a green background)

You want to display stoplight colors but not the worksheet values. Therefore, you select the **Hide data values for stoplight formats** check box on the New/Edit Stoplight format dialog.

You create a stoplight format on the Profit SUM worksheet item. In the worksheet example below, a stoplight format based on these categories is applied to Profit SUM values in a crosstab worksheet. Values in the unacceptable category are show in red (for example, West in 1998 and West in 2000). Values in the acceptable category are shown in yellow (for example, Central in 1998, 1999, and 2000, and West in 1999). Values in the desirable category are shown in green (for example, East in 1998, 1999, and 200).

A Discoverer worksheet using a stoplight format



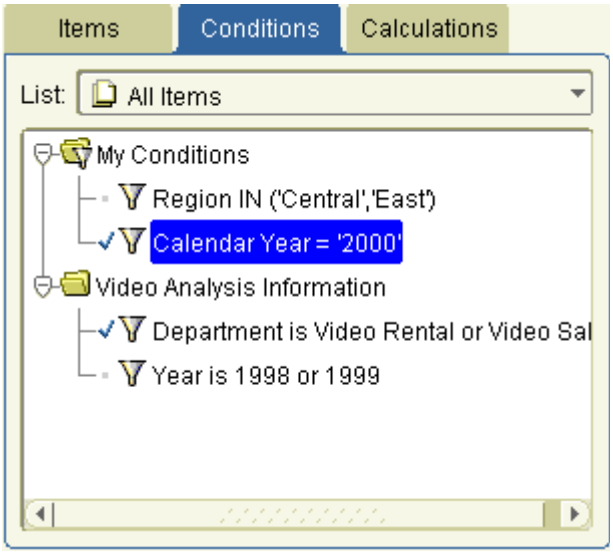
Using conditions

This chapter explains how to use Discoverer Plus Relational's 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 you want to analyze. For example, in the figure below, the "Edit Worksheet dialog: Select Items tab: Conditions tab" shows that a condition is active that only displays 2000 data (that is, Calendar Year = 2000).

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 consist of multiple condition statements 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 (for more information, 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 (for more information, see "About analytic functions and sequencing").

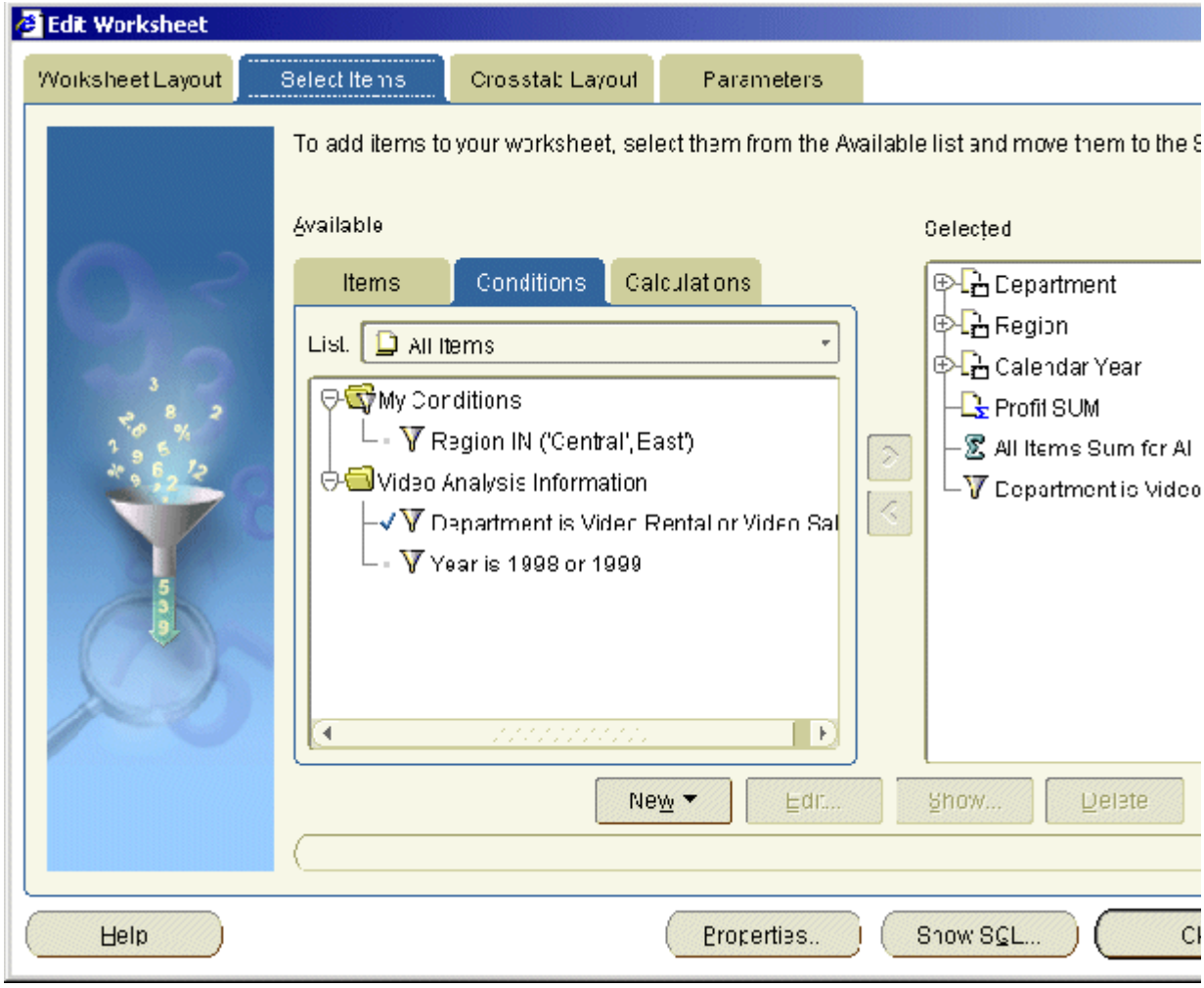
How to activate and deactivate existing conditions

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

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

To activate or deactivate a condition:

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



   The Conditions tab lists existing conditions available in the worksheet. Active conditions are marked with a checkmark in the **Available** list and are also displayed in the **Selected** list.

2. To activate a condition, move the condition from the **Available** list to the **Selected** list.
3. To deactivate a condition, move the condition from the **Selected** list to the **Available** list.

4. Click OK.

Discoverer refreshes the worksheet.

Notes

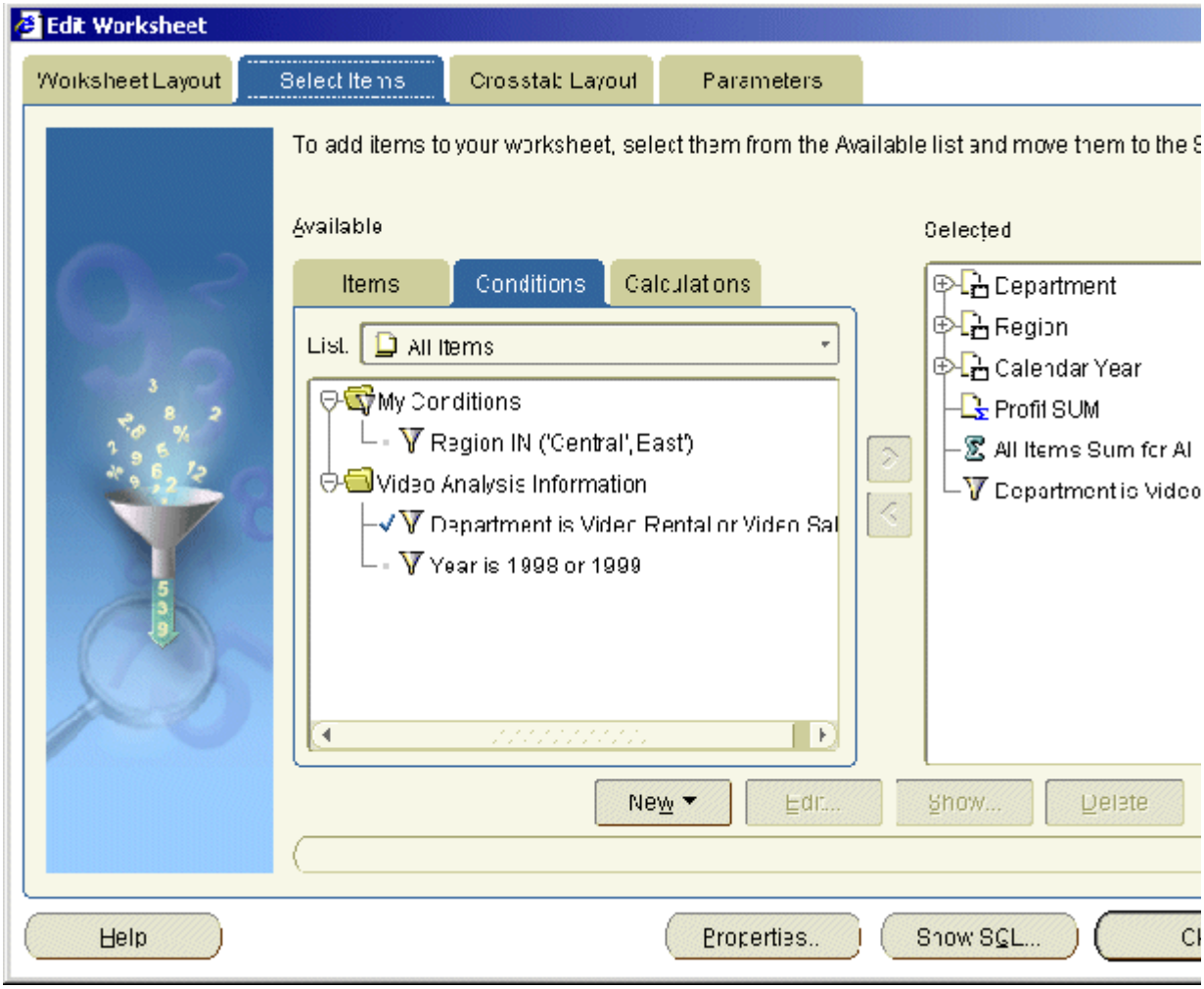
- You can also activate existing conditions in the following way:
    - If the Available Items pane is displayed, drag and drop a condition from the Conditions tab to the worksheet.
- You can also deactivate conditions in the following way:
    - If the Selected Items pane is displayed, right-click on a condition in the Selected Items list and select Remove from Worksheet.
- If you turn on more than one condition at the same time, this can have the same effect as applying a single multiple condition (for more information, 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 create single conditions

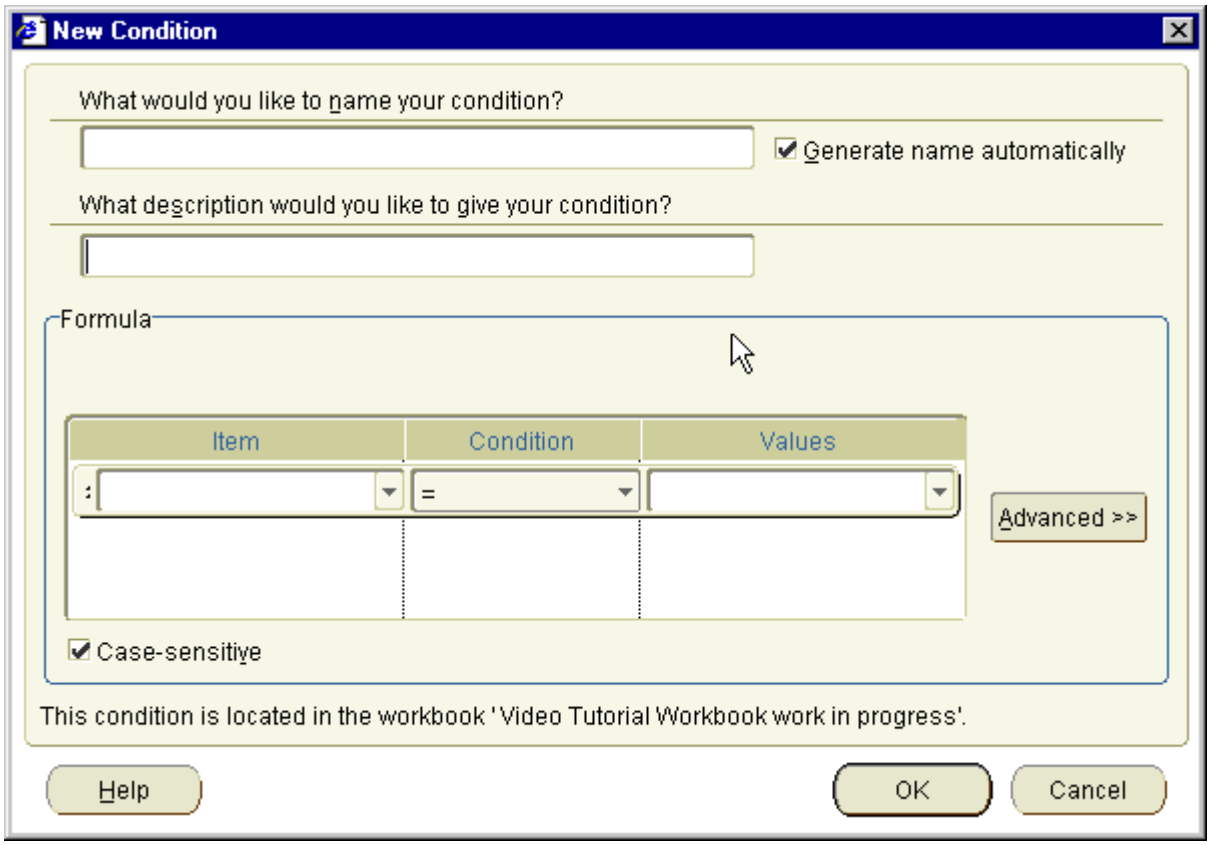
You create single conditions when you want to filter worksheet data in a new way using a single conditior statement. For example, to display data for the year 2001, you might create the condition 'Calendar year = 2001'.

To create a single condition:

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



2. Click New and select New Condition from the drop down list to display the "New Condition dialog".



3. In the **What would you like to name your 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 would you like 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 in 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 certair 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. To match upper and lowercase 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 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

- You can also create a condition in the following ways:
  - Select the worksheet item you want to filter, then select the New Condition option on the Standard toolbar and choose one of the condition operators available.
  - If the Available Items pane is displayed, the New Condition option on the Available Items toolbar (for more information, see "Available Items pane").
  - If the Available Items pane is displayed, right-click in the Conditions tab and select New Condition.
- When entering values into the **Values** field, you can enter multiple values when the condition operator is any of the following:
  - = (equals)
  - <> (not equals)
  - IN
  - NOT IN

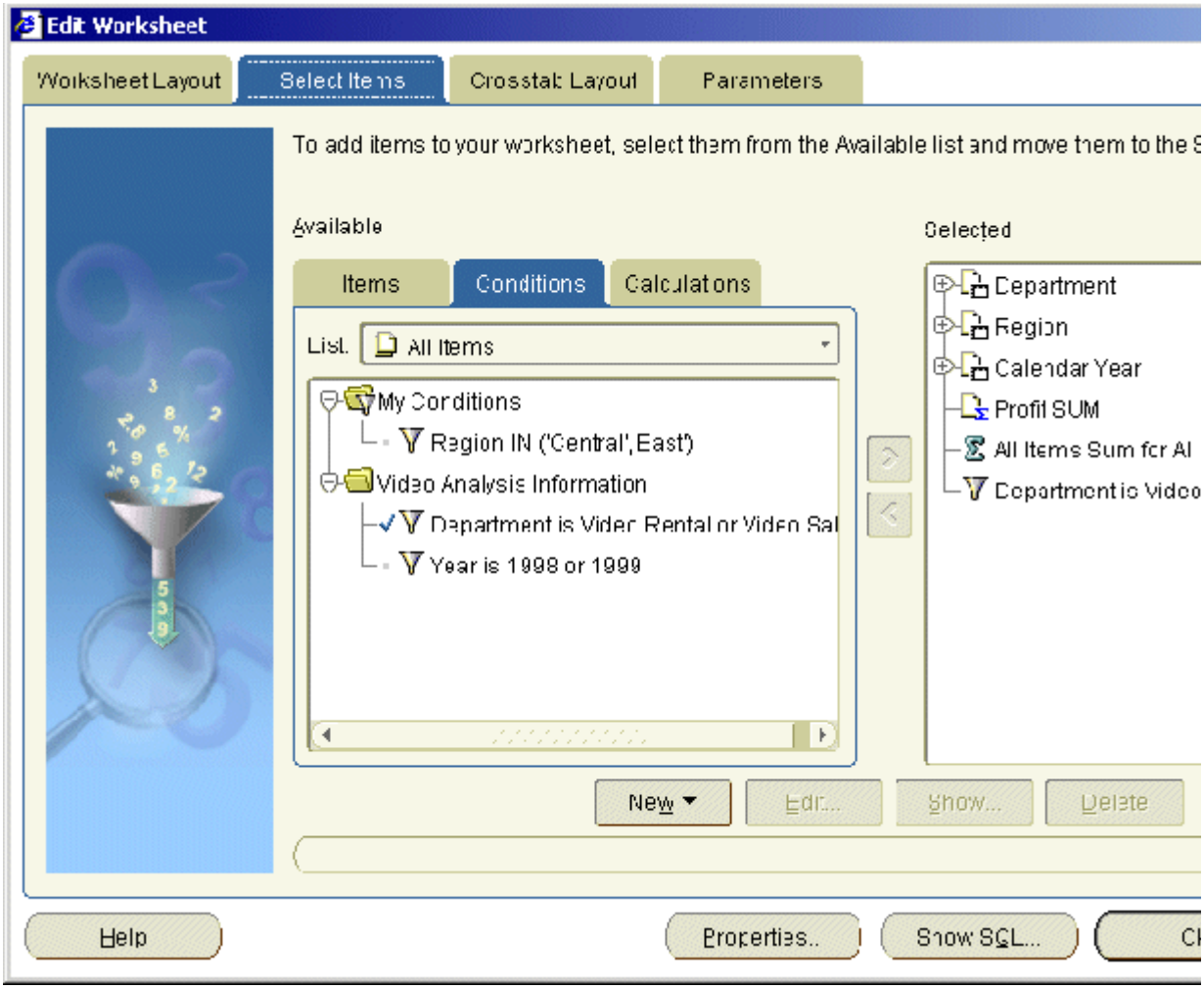
  For more information about what values you can enter in the **Values** field, see "Using lists of values (LOVs)".

How to create multiple conditions

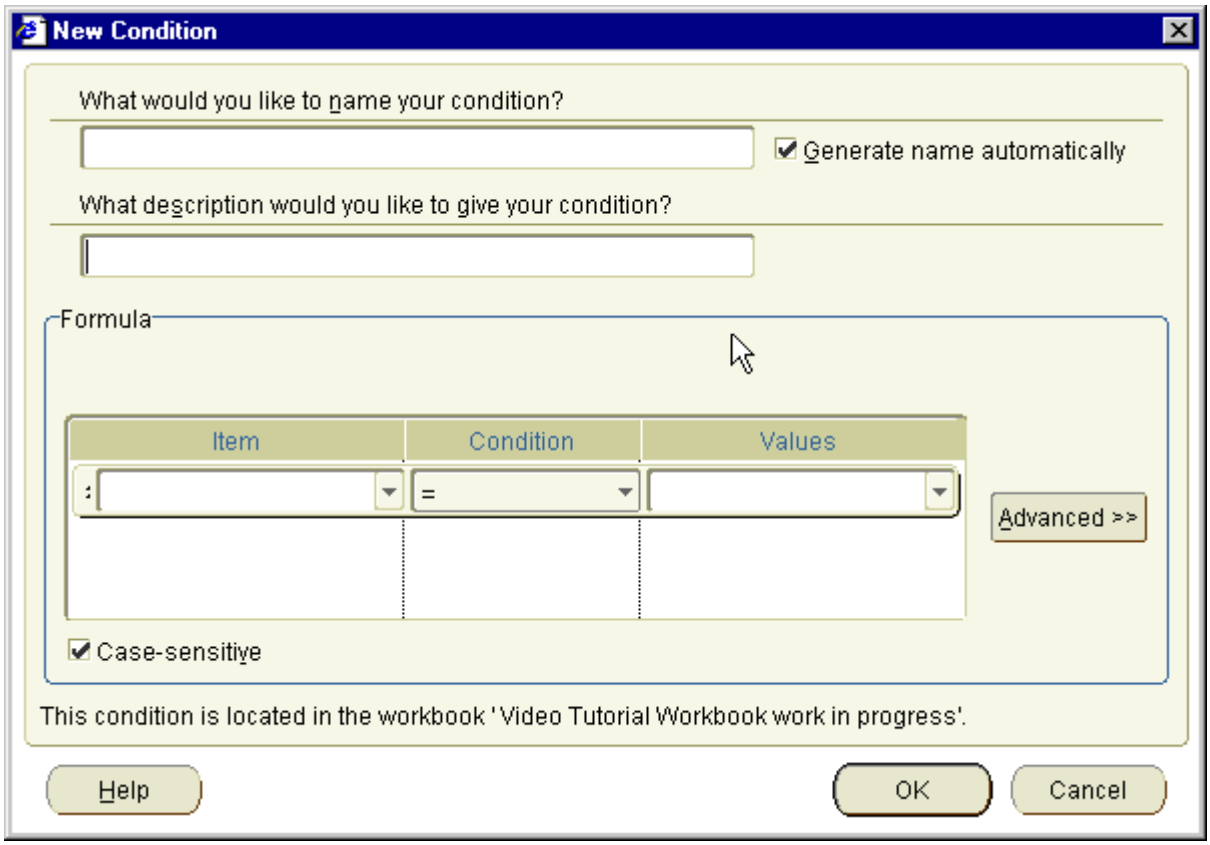
You use a multiple condition to display only data that matches multiple condition statements that you cannot display using a single condition. For example, to display data for the year 2000 that also relates to the Eastern region.

To create a multiple condition:

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

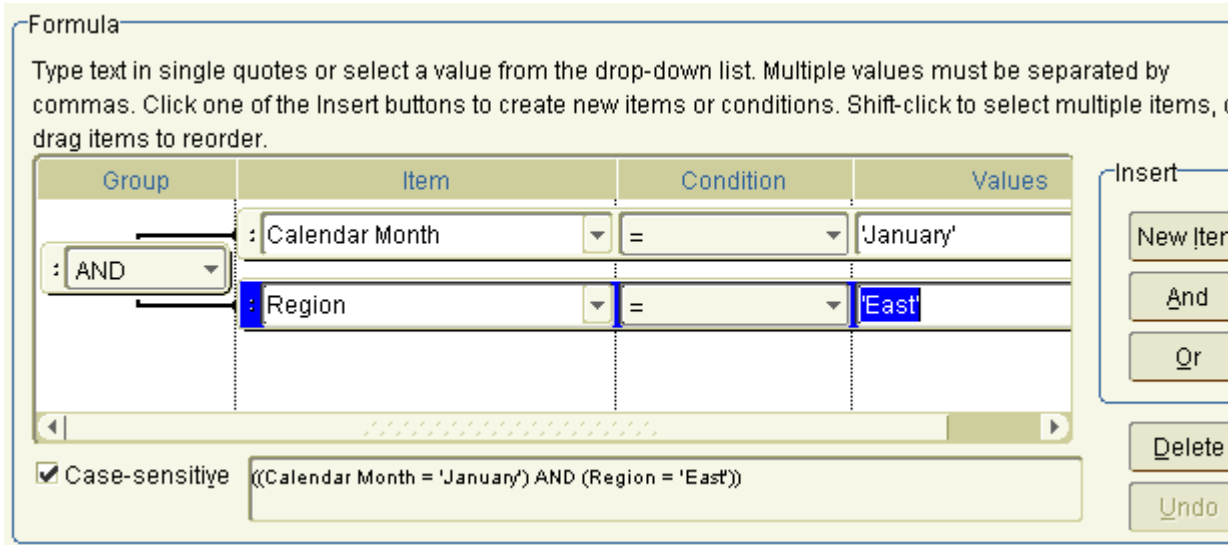


2. Click New and select New Condition from the drop down list to display the "New Condition dialog".



3. Create a single condition (for more information, see"How to create single conditions").
4. Click Advanced.

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



5. 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 (for example, AND, OR, NOT AND, or NOT OR).

6. 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.

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

- You can also create a condition in the following ways:
  - If the Available Items pane is displayed, select the New Condition option on the Available Items toolbar (for more information, see "Available Items pane").
  - If the Available Items pane is displayed, right-click in the Conditions tab and select New Condition.
- To create a multiple condition, you might also add condition statements to an existing single condition.

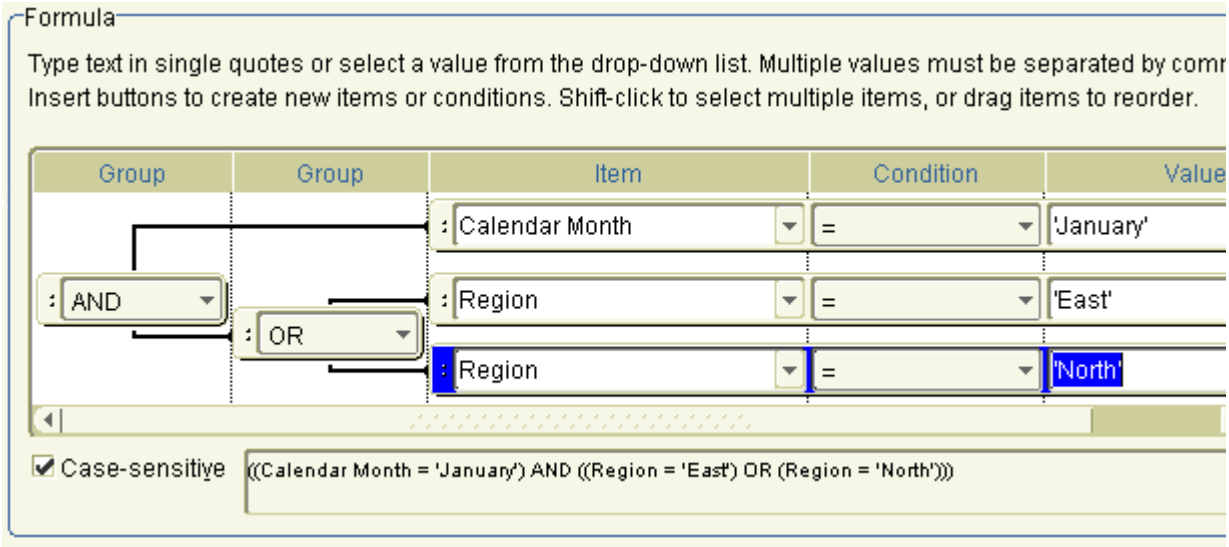
How to create nested conditions

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 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

- You can also create a condition in the following ways:

- If the Available Items pane is displayed, select the New Condition option on the Available Items toolbar (for more information, see "Available Items pane").
- If the Available Items pane is displayed, right-click in the Conditions tab and select New Condition.

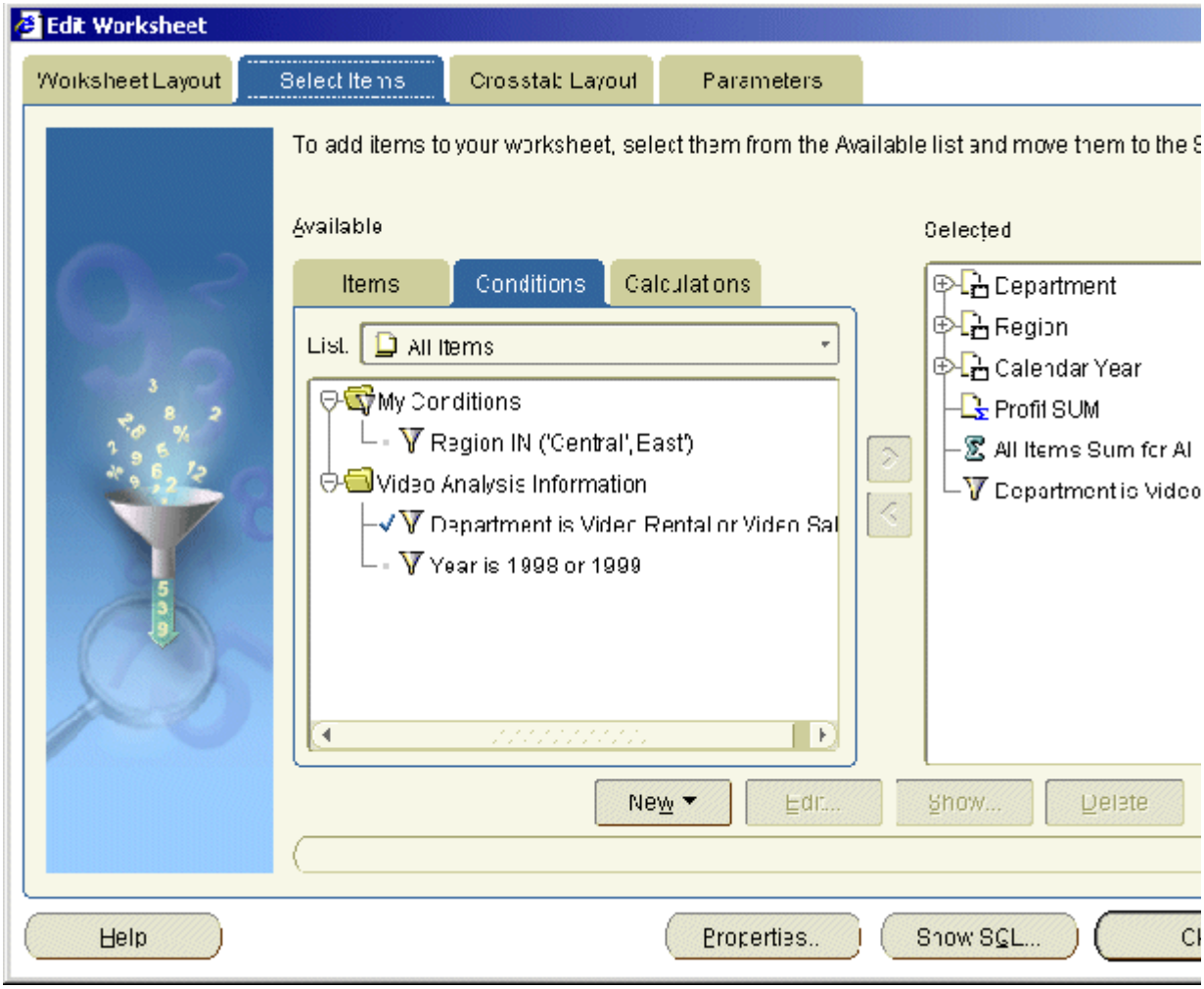
- To create a nested condition, you might also edit an existing single or multiple condition.

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: Select Items tab: Conditions tab".



2. Select a condition in the Available 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 activate and deactivate existing conditions").

Notes

- You can also edit conditions in the following way:
    - If the Available Items pane is displayed, display the Conditions tab, right-click on a condition and select Edit.
- You cannot edit conditions created by the Discoverer manager. Only Discoverer managers can edit conditions that they have created. Therefore:
    - the Edit button is grayed out for conditions created by the Discoverer manager.
    - the Show button is active for read-only conditions created by the Discoverer manager.

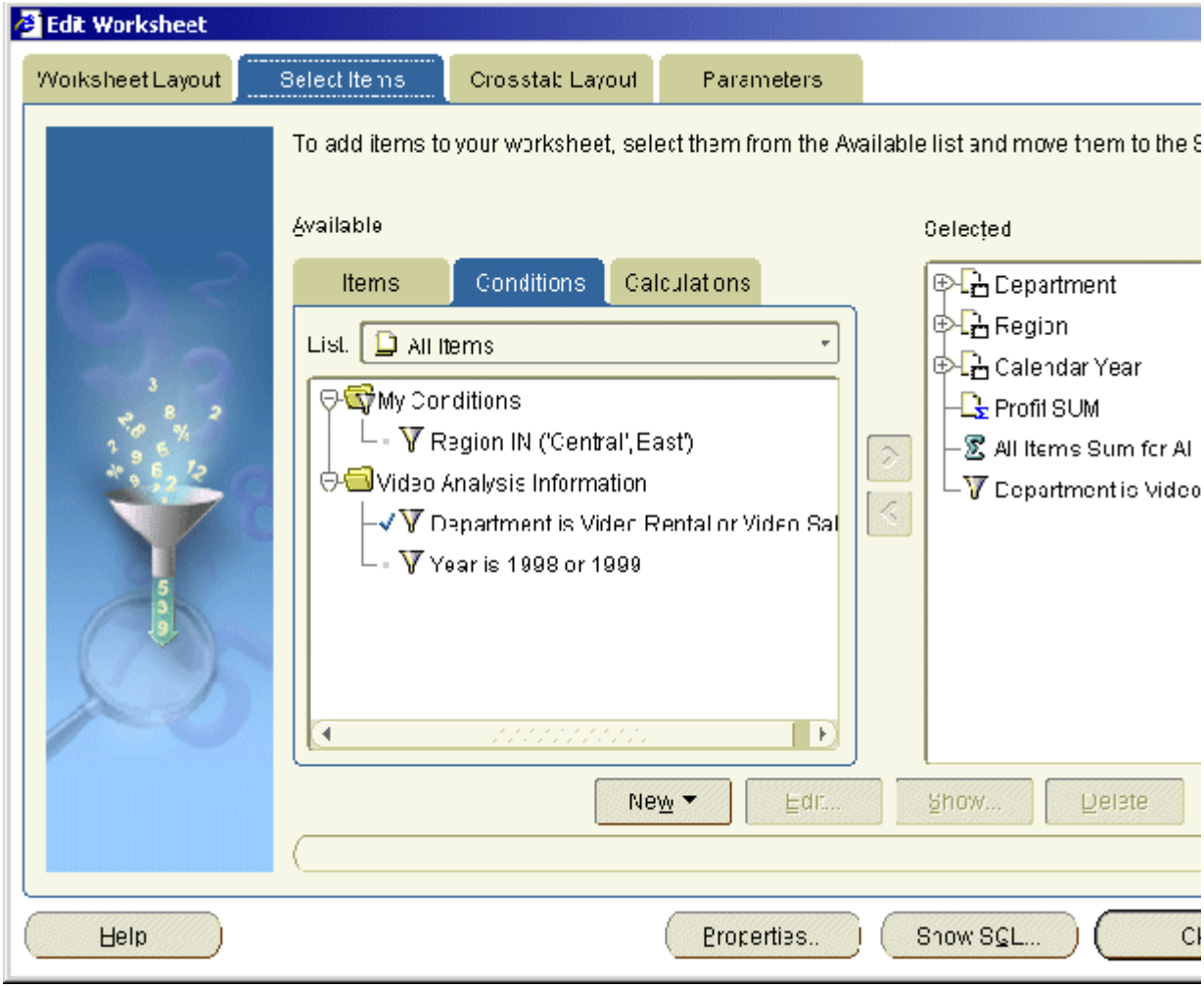
How to delete conditions

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: To disable the condition without deleting the condition permanently, you can turn the condition off (for more information, see "How to activate and deactivate existing conditions").

To delete a condition:

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



2. Select a condition in the Available 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 filtered out.

Notes

- You can also delete conditions in the following way:
    - If the Available Items pane is displayed, display the Conditions tab, right-click on a condition and select Delete.
- 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

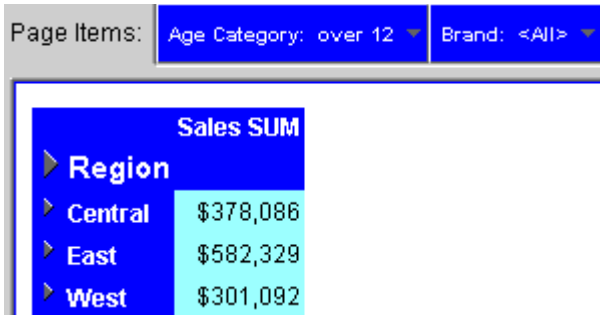
When a worksheet has page items, Discoverer applies conditions to underlying sub-totals. Discoverer does not apply conditions to roll-ups.

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: The example worksheet containing aggregated totals for regions).

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: The example worksheet showing underlying Brand sub-totals).

The example worksheet showing underlying Brand sub-totals

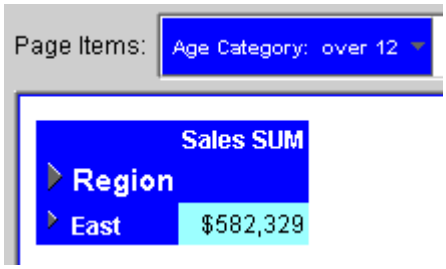
For example, Astro is $4,553, and Big Studios is $71,661. The largest sub-total is Wolf ($133,154).

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 greate than $400,000.

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 then returns the East region row (see Figure: The example worksheet with the Brand item removed and the condition Sales SUM > 400,000 applied).

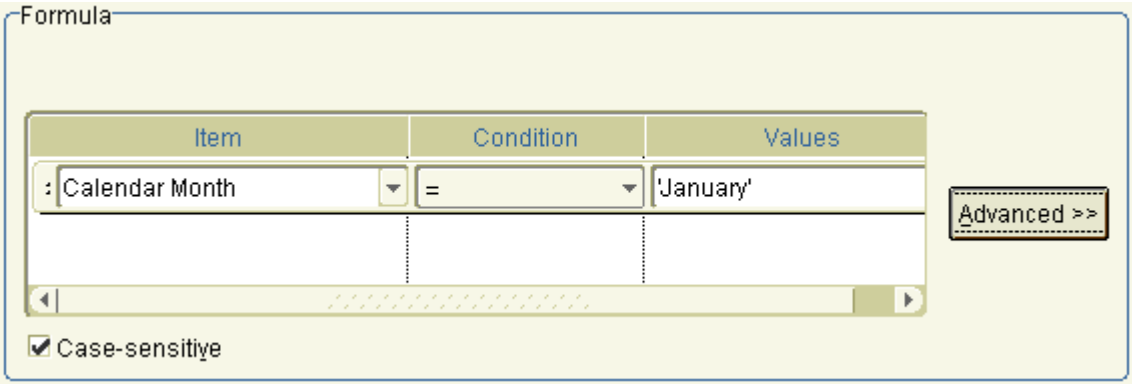
The example worksheet with the Brand item removed and the condition Sales SUM > 400,000 applied



Examples of conditions

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

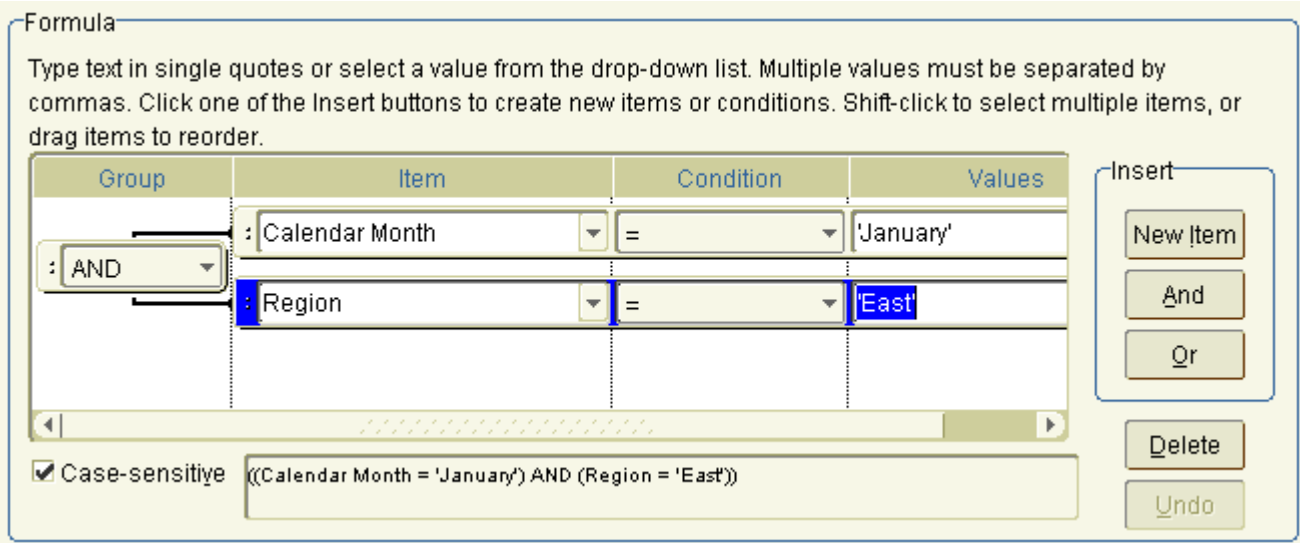
A single condition to return data for the month of January



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.

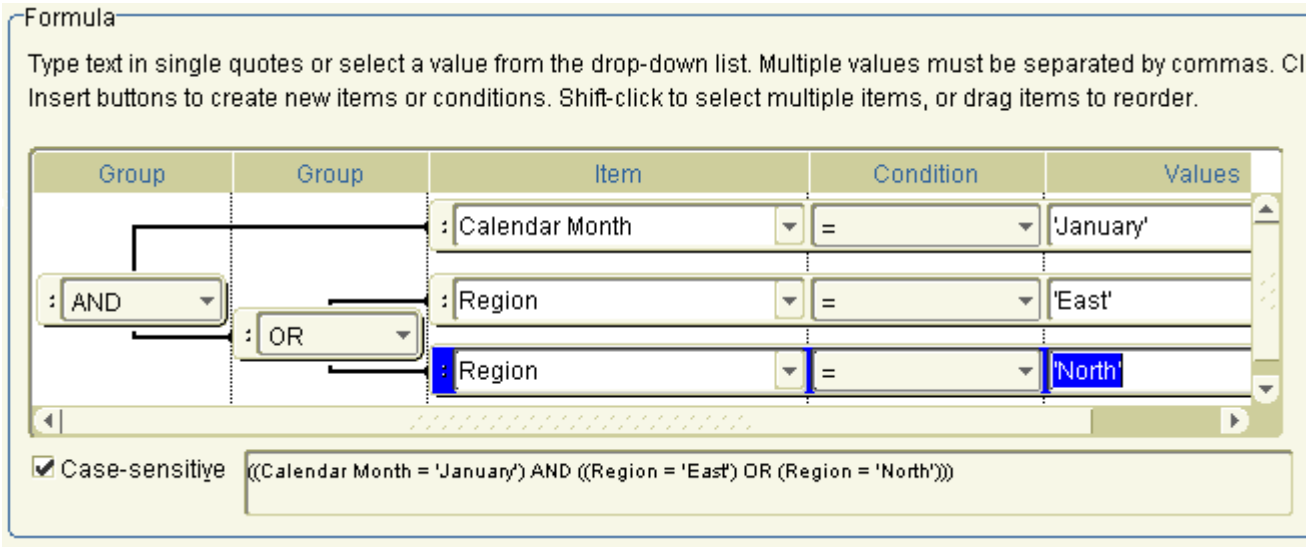
A multiple condition to return data for the month of January for the East region



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.

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 Month = January 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.

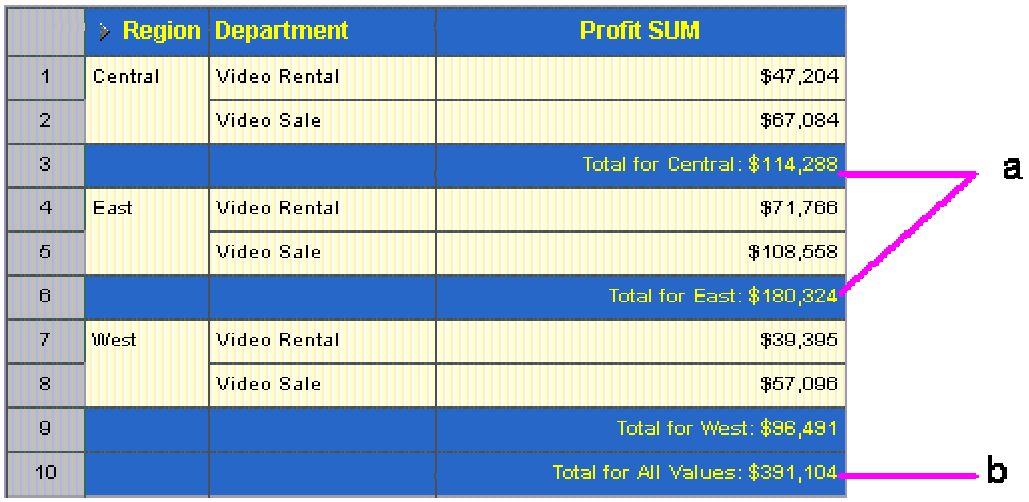
Using totals

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

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 to calculate the average of a row of sales figures. You can then use the totals to analyze the worksheet data.

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	$67,096
9			Total for West: $86,491
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)

When a worksheet contains totals, you can:

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

About totals on 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 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

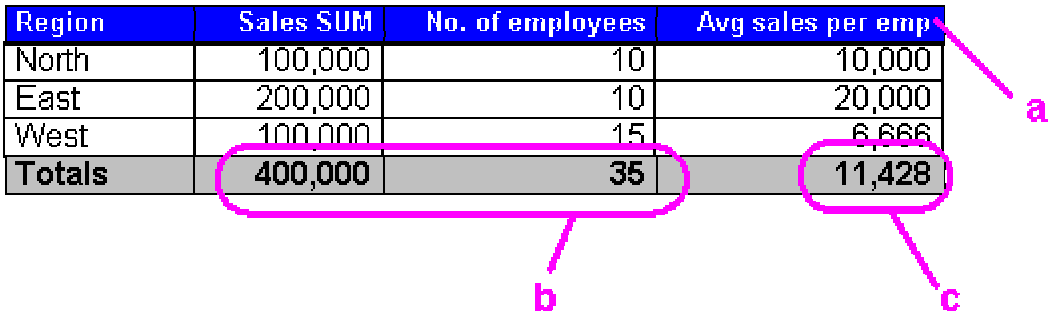
You typically use SUM rather than Cell SUM when you add items containing:

- analytic functions (for example, Rank and NTILE)
- aggregated (sum total) items (for example, 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.

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 (that is, 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 (that is, 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 (that is, 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 (that is, 10,000 + 20,000 + 6,666).

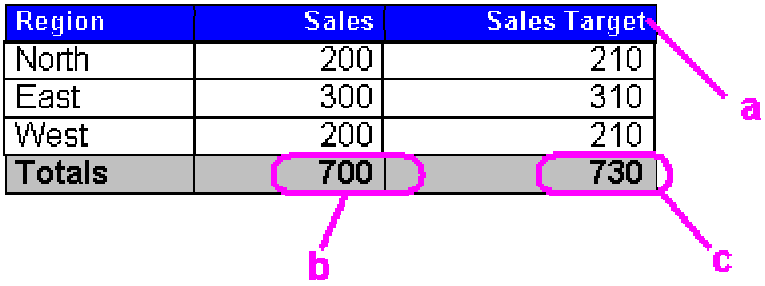
When to use Cell SUM instead of SUM

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 (tha is, an increase of ten units).

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 (that is, 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 Oracle BI Discoverer

If you migrate workbooks containing totals from earlier versions of Discoverer to Oracle BI Discoverer, you might want to:

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

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 (that is, 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 fo Chicago and Louisville to create aggregated values for the Central region (that is, $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 (that is, if you select the Outline option in the**Crosstab style** drop down list on the "Options dialog: Sheet tab").

What are linear and non-linear totals

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 (that is, $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 (that is, 49,246/77,668), not as 1.322 (that is, 0.708 + 0.614).

		Year	1998		
			Profit Sum	Sales Sum	Sales M
Region	City				
Central			$49,246	$77,668	0.634
	Chicago		$11,638	$16,433	0.708
	Louisville		$37,607	$61,235	0.614

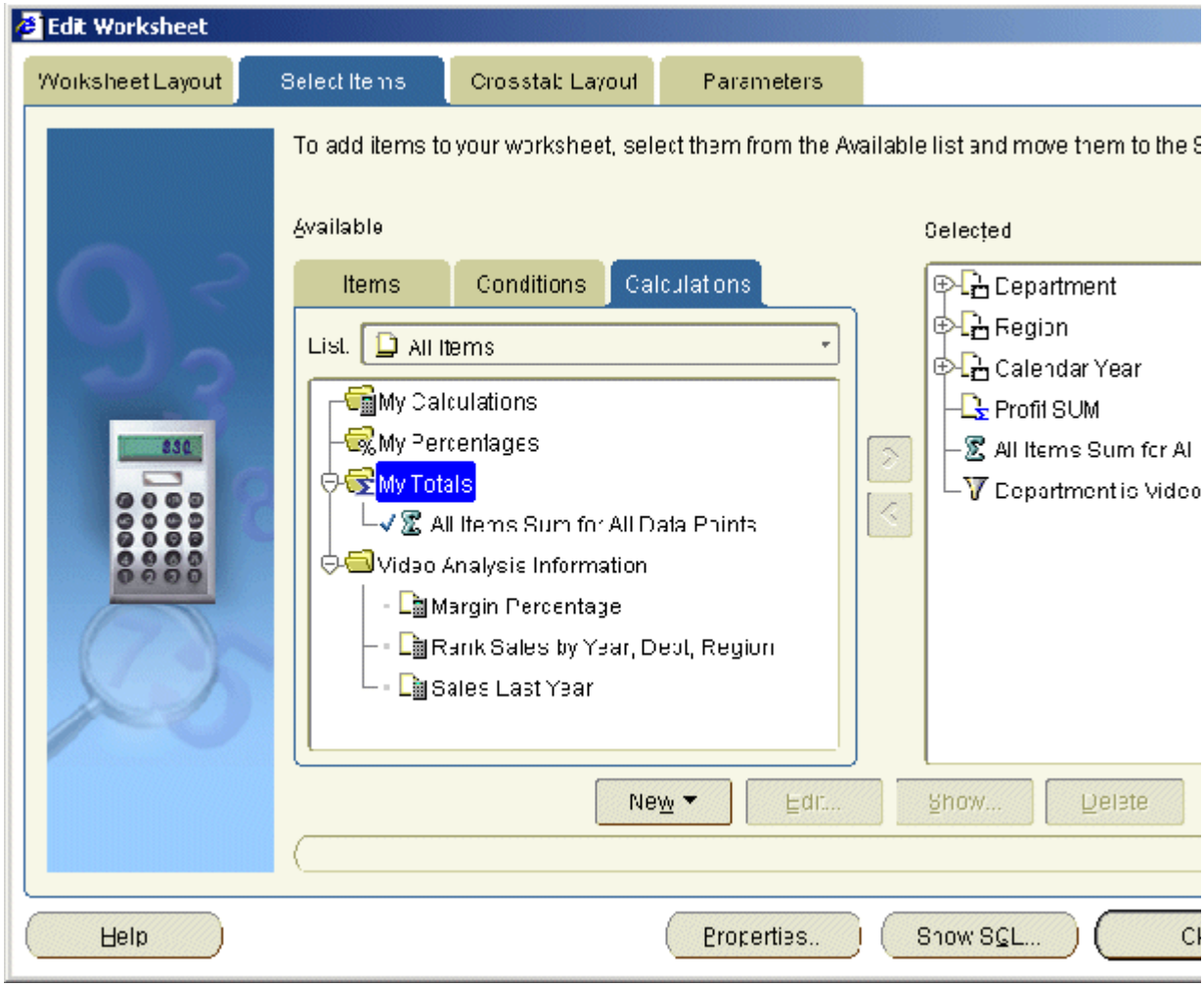
How to display or hide totals

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 you want to analyze.
2. Choose Tools | Totals to display the "Edit Worksheet dialog: Select Items tab: Calculations tab".



The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active totals are marked with a checkmark in the **Available** list and are also displayed in the **Selected** list.

3. To display an existing total, move the total from the **Available** list to the **Selected** list.

4. To hide an existing total, move the total from the **Selected** list to the **Available** list.
5. Click OK to close the Calculations tab and display the worksheet.

   Discoverer refreshes the worksheet.

Notes

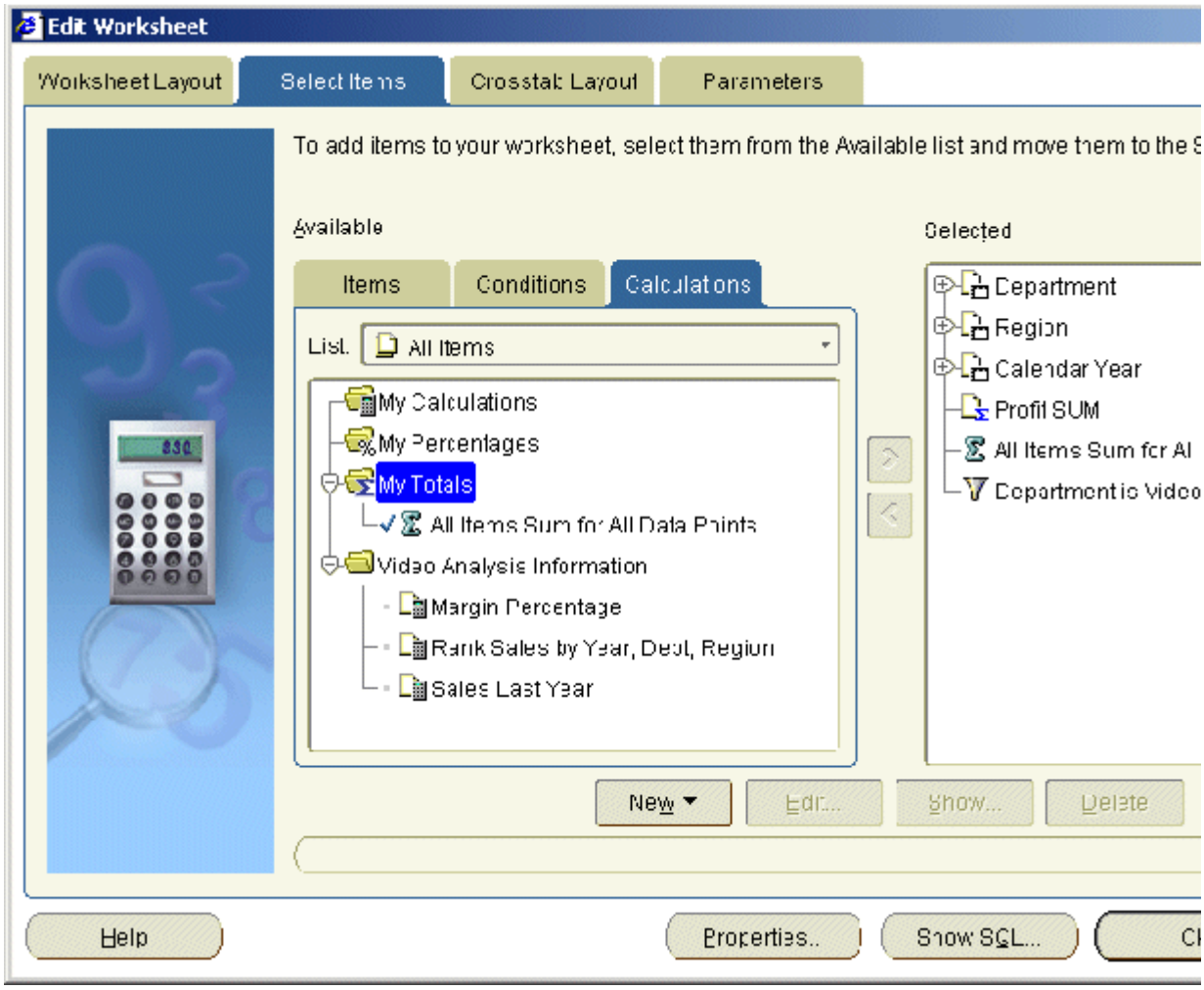
- You can also display existing totals in the following way:
  - If the Available Items pane is displayed, drag and drop a total from the Calculations tab to the worksheet.
- You can also hide totals in the following way:
  - If the Selected Items pane is displayed, right-click on a total in the Selected Items list and select Remove from Worksheet.
- 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.

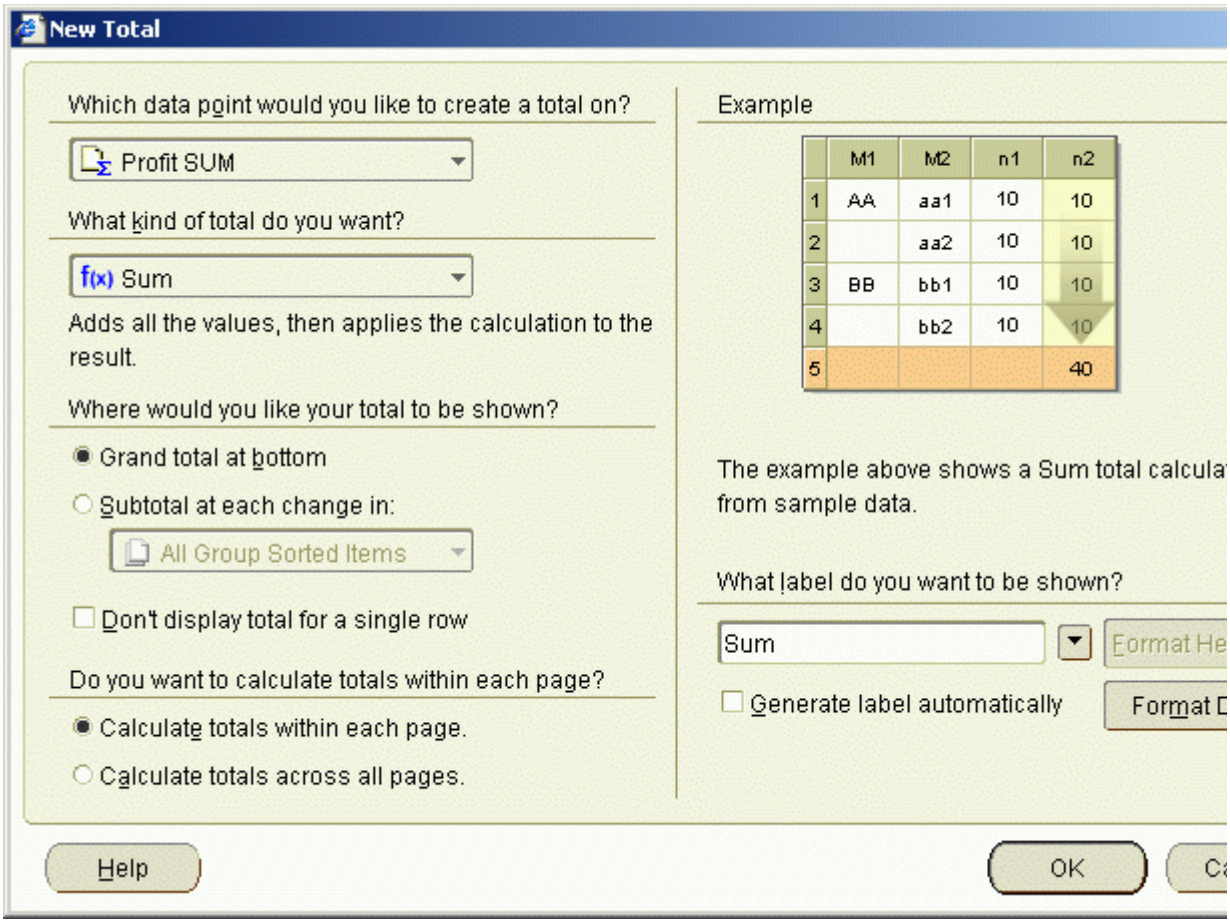
To create a total on a table worksheet or crosstab worksheet:

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



   The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active totals are marked with a checkmark in the **Available** list and are also displayed in the **Selected** list.

3. Click New and select New Total from the drop down list to display the "New Total dialog".



4. Under **Which data point would you like to create a total on?**, select the item 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.

5. 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.

6. 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** option 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 the worksheet

7. If you select the **Subtotal at each change in** option, 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 displays the total profit for each region on a separate line.

8. 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.

9. Click OK to save the details and close the dialog.
10. Click OK to close the Calculations tab and return to the worksheet.

    Discoverer calculates the total and displays it on the worksheet.

Notes

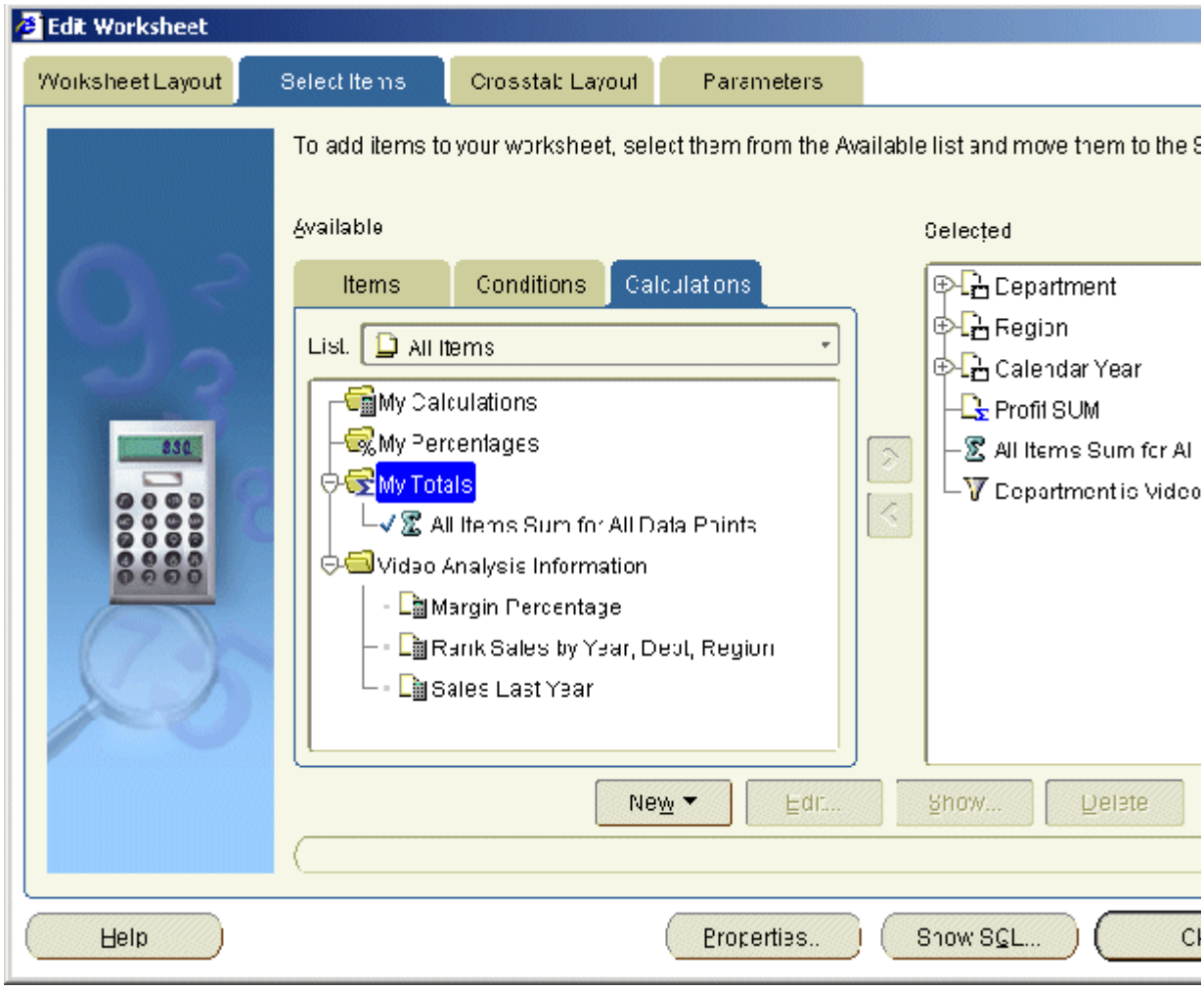
- You can also create a total in the following ways:
  - Select the worksheet item for which you want to create a total, then select the New Total option on the Standard toolbar and choose one of the total types available.
  - If the Available Items pane is displayed, select the New Total option on the Available Items toolbar (for more information, see "Available Items pane").
  - If the Available Items pane is displayed, display the Calculations tab, right-click on My Totals and select New Total.

How to edit totals

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

To edit a total:

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



   The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active totals are marked with a checkmark in the **Available** list and are also displayed in the **Selected** list.
3. Select a total in the Available list.
4. Click Edit to display the "Edit Total dialog".
5. Edit the total details as required.

6. Click OK to save the details and close the Edit Total dialog.
7. Click OK to close the Calculations tab and return to the worksheet.

Discoverer refreshes the worksheet.

Notes

- You can also edit totals in the following way:
    - If the Available Items pane is displayed, display the Calculations tab, right-click on a total, and select Edit.
- You can change the format of totals on a worksheet using Format | Item Formats to display the "Format dialog". Then, select the total from the item list and choose Format Heading or Format Data.

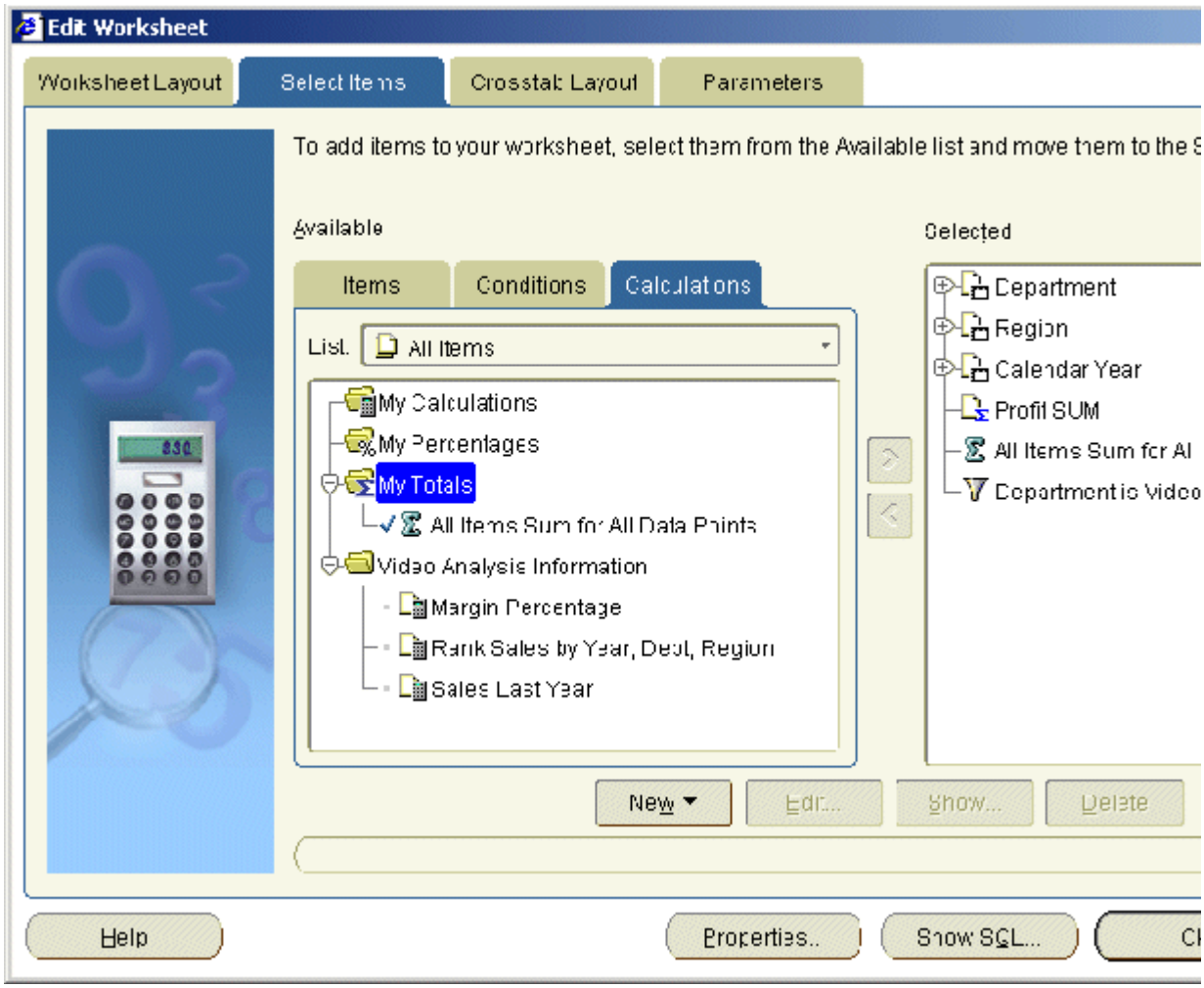
How to delete totals

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



The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active totals are marked with a checkmark in the **Available** list and are also displayed in the **Selected** list.

3. Select a total in the Available list.

4. Click Delete.
5. Click OK to close the Calculations tab and return to the worksheet.

Discoverer refreshes the worksheet.

Notes

- You can also delete totals in the following way:
    - If the Available Items pane is displayed, display the Calculations tab, right-click on a total, and select Delete.

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.

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

a

b

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.

Displaying a total on a crosstab worksheet

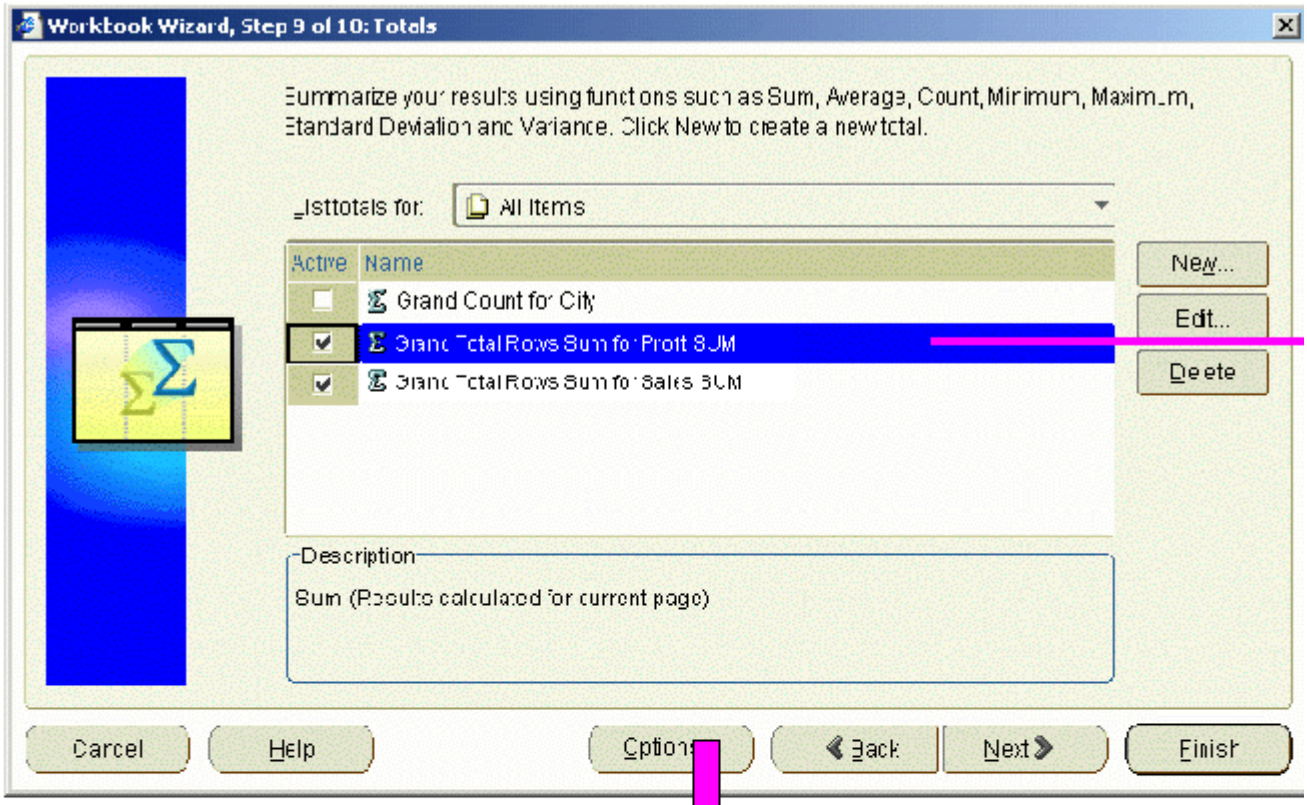
		Profit SUM			
	Year	1998	1999	2000	Sum
Region					
Central		£67,084	£97,921	£69,493	£234,498
East		£108,558	£145,462	£109,637	£363,657
West		£57,096	£87,172	£52,092	£196,360

a

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 Centra region. You want to display a total profit figure and a total sales figure.

Displaying two totals on a crosstab worksheet



	Profit SUM	Sales SUM
Region		
Central	£47,204	£84,967.60
East	£71,766	£131,491.44
West	£39,395	£65,346.33
	Sum: £158,366	Sum: £281,805.37

b c

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.

Examples of worksheet aggregation in Discoverer

The following examples show how aggregation options specified on the"Worksheet Properties dialog: Aggregation tab" affect how Discoverer displays aggregated values.

Example 1: Example of a Rank calculation using an Oracle9*i* or later database

In this example (using an Oracle9*i* or later database), you want to calculate a ranked list of cities based or 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 (for example, 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 (for example, 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 computed by the database. The database uses the same aggregation method as Discoverer** option on the "Worksheet Properties 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 "Worksheet Properties dialog: Aggregation tab".

Explanation of fields

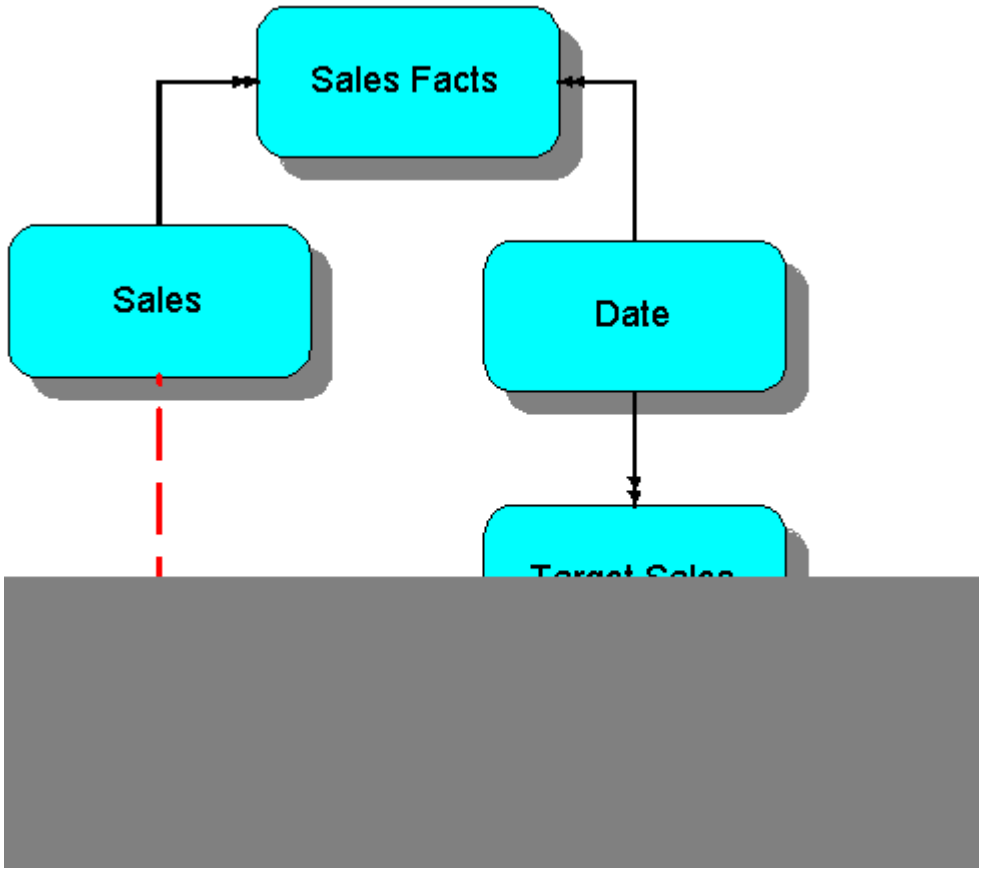
Check box selected	What value is displayed?
Show the aggregated value calculated by the database. The database uses the same aggregation method as Discoverer	Valid ranks for each region and for each city (as in example above)
Show <Non-aggregable label>, the "values that cannot be aggregated" option, set on the Sheet Format tab	<N.A.>
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 showing how Discoverer does not aggregate repeated values using an Oracle9*i* or later database

This example (using an Oracle9*i* or later database) shows how Discoverer does not aggregate repeated values, whichever aggregation option you choose on the "Worksheet Properties dialog: Aggregation tab".

In this example, a worksheet displays sales values (that is, the Sales SUM item) for regions for each year. The worksheet also displays the target sales value set by the company (that is, 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 (that is in the Sales Facts table) but the Target Sales Sum item is dimensioned by date (that is, in the Date table)



Therefore, you want Discoverer to display a non-aggregable label (for example, N.A.) for the yearly total values for the Target Sales Sum item. The worksheet below shows how Discoverer displays a non-aggregable label (that is, N.A.) for the yearly totals for the Target Sales Sum item (regardless of which aggregation option you choose on the "Worksheet Properties 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 options on the "Worksheet Properties dialog: Aggregation tab".

Explanation of fields

Check box selected	What value is displayed?
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.

Using percentages

This chapter explains how to use Discoverer Plus Relational's 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 (that is, $25,157).

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

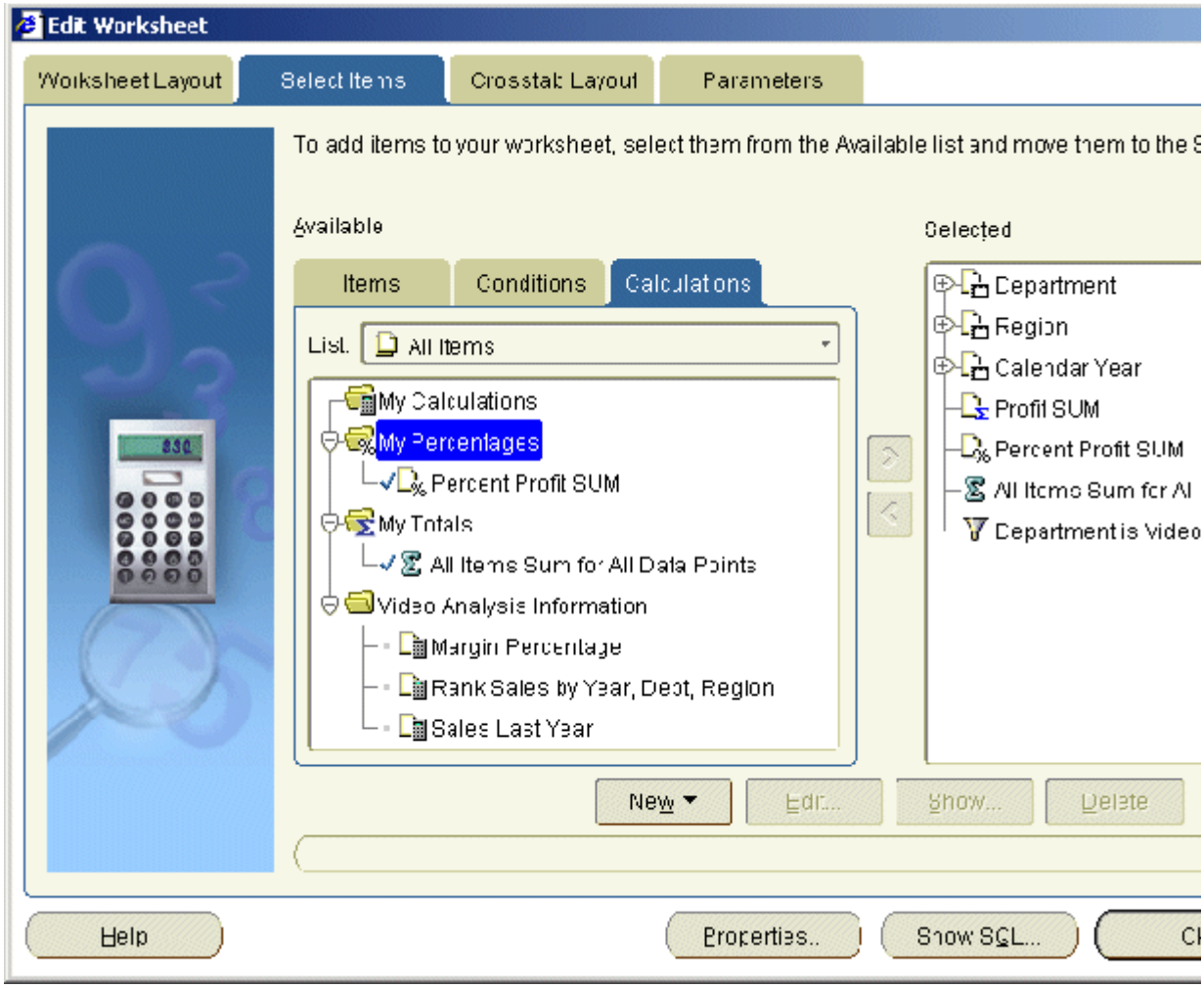
If a worksheet contains existing percentages (for example, percentages created by other Discoverer users or created by the Discoverer manager) you can display or hide the percentages on the worksheet.

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. Display the worksheet you want to analyze.
2. Choose Tools | Percentages to display the"Edit Worksheet dialog: Select Items tab: Calculations tab".



The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active percentages are marked with a checkmark in the **Available** list and are also displayed in the **Selected** list.

3. To display an existing percentage, move the percentage from the **Available** list to the **Selected** list.
4. To hide an existing percentage, move the percentage from the **Selected** list to the **Available** list.
5. Click OK to close the Calculations tab and display the worksheet.

Discoverer refreshes the worksheet according to the options selected.

Notes

- You can also display existing percentages in the following way:
    - If the Available Items pane is displayed, drag and drop a percentage from the Calculations tab to the worksheet.
- You can also hide percentages in the following way:
    - If the Selected Items pane is displayed, right-click on a percentage in the Selected Items list and select Remove from Worksheet.
- To remove a percentage from the worksheet permanently, you delete the percentage (for more information, see "How to delete percentages").

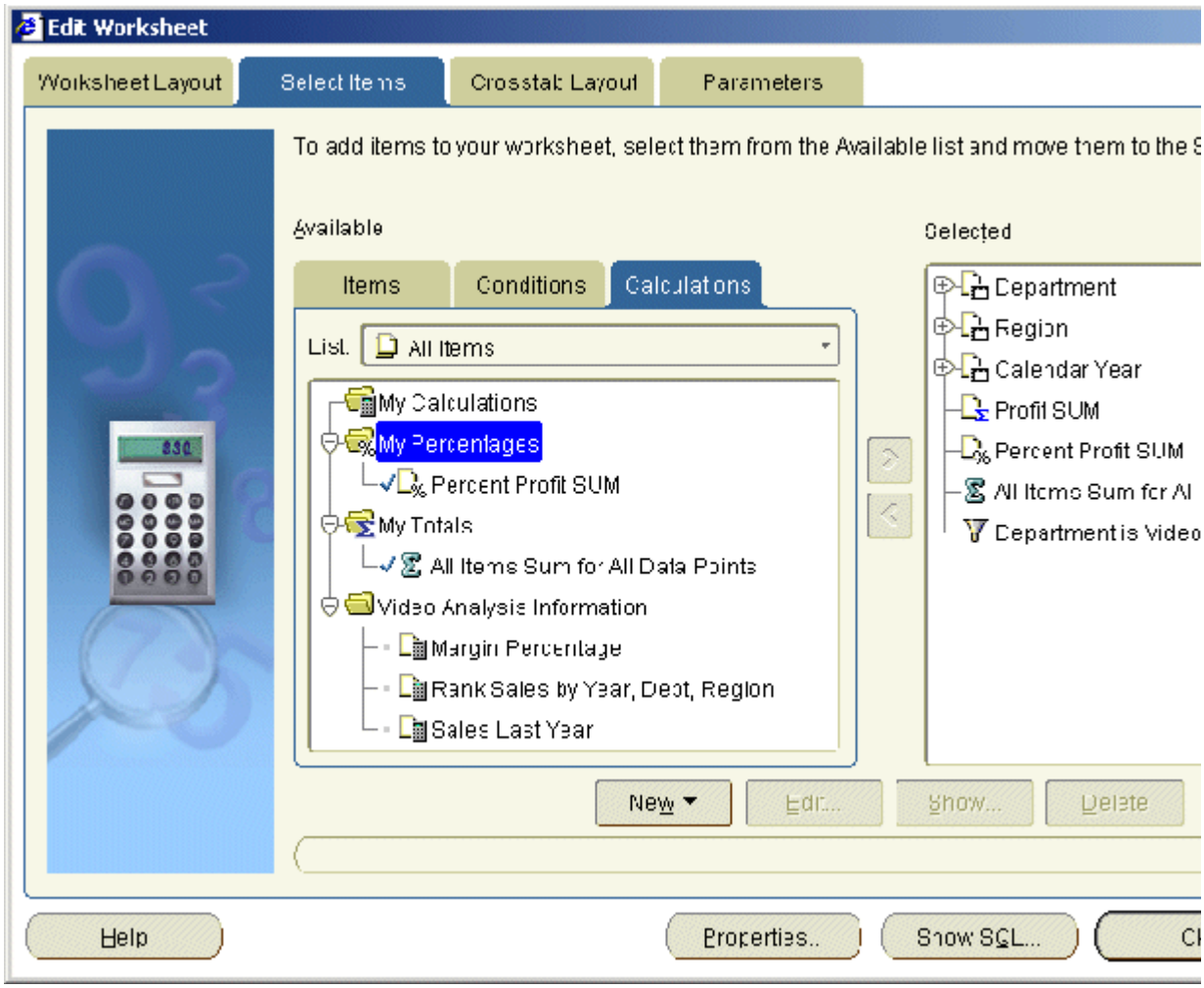
How to create percentages

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. Display the worksheet you want to analyze.
2. Choose Tools | Percentages to display the"Edit Worksheet dialog: Select Items tab: Calculations tab".



The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active percentages are marked with a checkmark in the **Available** list and are also displayed in the **Selected** list.

3. Click New and select New Percentage from the drop down list to display the "New Percentage dialog".
4. (optional) To change the default name of the new percentage, enter the name in the **What do you want to name this percentage?** field.
5. 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.
6. Use the **Calculate as a percentage of** options to choose where to display the percentage, as follows:
   - Select the **Grand total of all values** option to calculate the values as a percentage of the whole column.
   - Select the **Subtotal at each change in** option, 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.
7. Use the **Do you want to calculate percentages within each page?** options to choose whether to calculate percentages for each page, or for all pages.
8. Use the **Which totals do you want to be shown?** check boxes to specify how to display grand totals and subtotals.

   The options available depend on whether you have selected the **Grand total of all values** option, or the **Subtotal at each change in** option.
   - (optional) If you selected the **Grand total of all values** option, 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** option, 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** option, 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.
9. Click OK to save the details and display the Percentages dialog.
10. Click OK to close the Calculations tab and return to the worksheet.

Discoverer calculates the percentages and displays them on the worksheet.

Notes

- You can also create a percentage in the following ways:

- Select the worksheet item for which you want to create a percentage, then select the New Percentage option on the Standard toolbar and choose one of the percentage types available.
- If the Available Items pane is displayed, select the New Percentage option on the Available Items toolbar (for more information, see "Available Items pane").
- If the Available Items pane is displayed, display the Calculations tab, right-click on My Percentages, and select New Percentage.

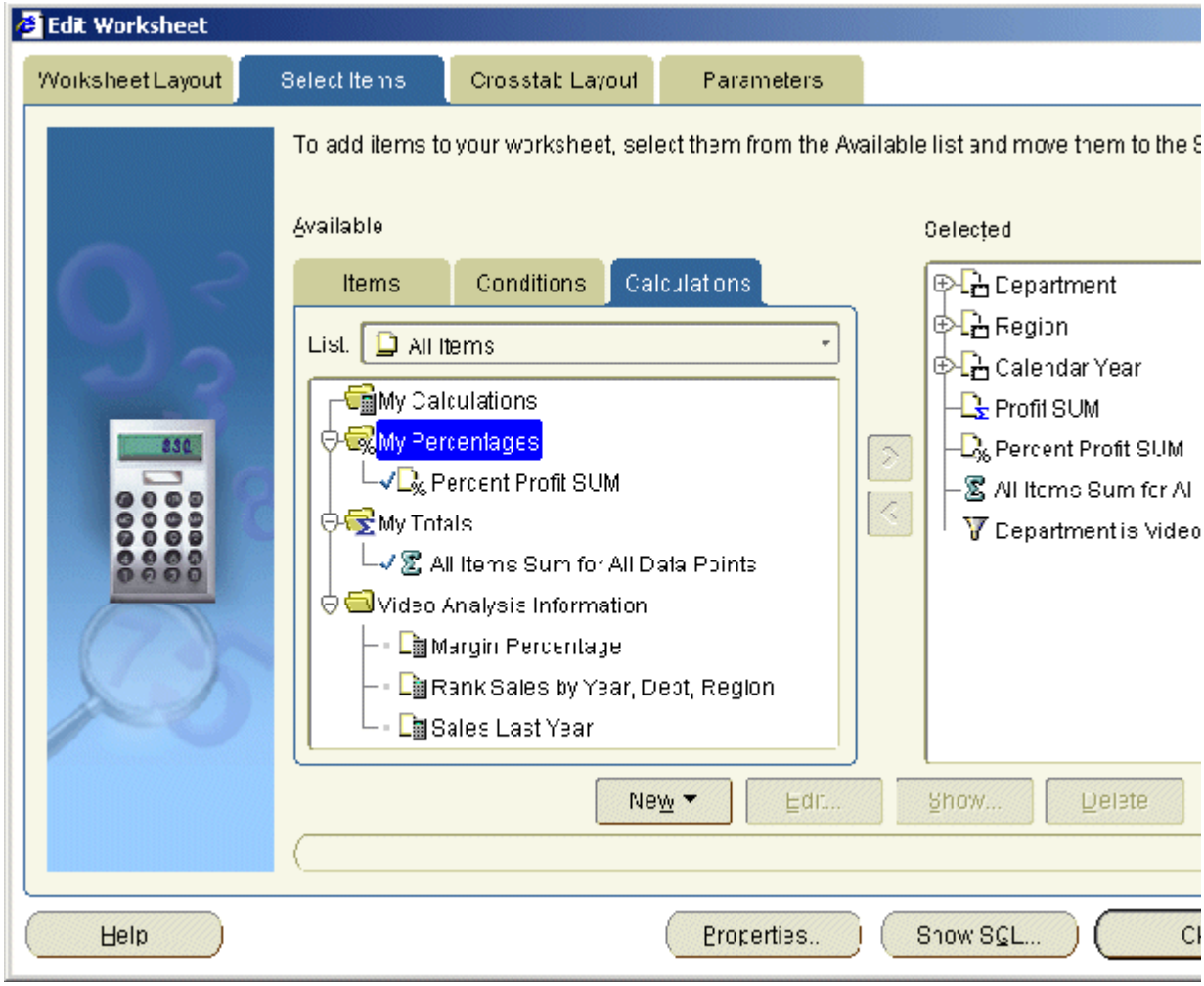
- If you use the **Show the percentage of the grand total for each subtotal** option, the grand total value includes all items displayed on the worksheet and also items in the page items area (if any). In other words, the subtotal percentages might not add up to 100% unless you display all page items 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. Display the worksheet you want to analyze.
2. Choose Tools | Percentages to display the"Edit Worksheet dialog: Select Items tab: Calculations tab".



   The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active percentages are marked with a checkmark in the**Available** list and are also displayed in the **Selected** list.

3. Select a percentage in the Available list.
4. Click Edit to display "Edit Percentage dialog".

5. Edit the percentage details as required.
6. Click OK to save the details and close the Edit Percentage dialog.
7. Click OK to close the Calculations tab and return to the worksheet.

   Discoverer refreshes the worksheet.

Notes

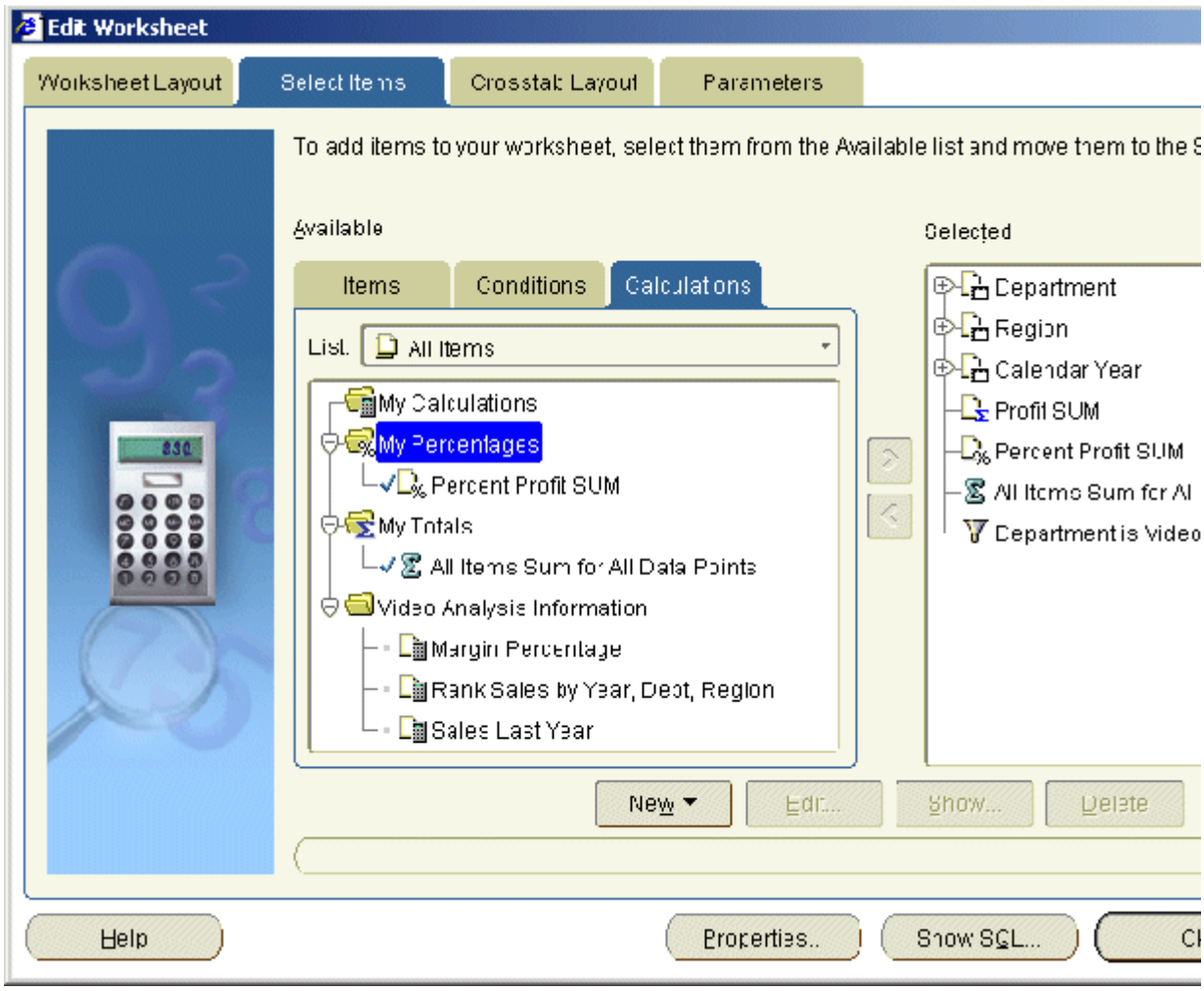
- You can also edit percentages in the following way:
    - If the Available Items pane is displayed, display the Calculations tab, right-click on a percentage, and select Edit.

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. Display the worksheet you want to analyze.
2. Choose Tools | Percentages to display the"Edit Worksheet dialog: Select Items tab: Calculations tab".



The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active percentages are marked with a checkmark in the**Available** list and are also displayed in the **Selected** list.

3. Select a percentage in the Available list.
4. Click Delete.

5. Click OK to close the Calculations tab and return to the worksheet.

   Discoverer refreshes the worksheet.

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

Notes

- You can also delete percentages in the following way:
  - If the Available Items pane is displayed, display the Calculations tab, right-click on a percentage, and select Delete.
- 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

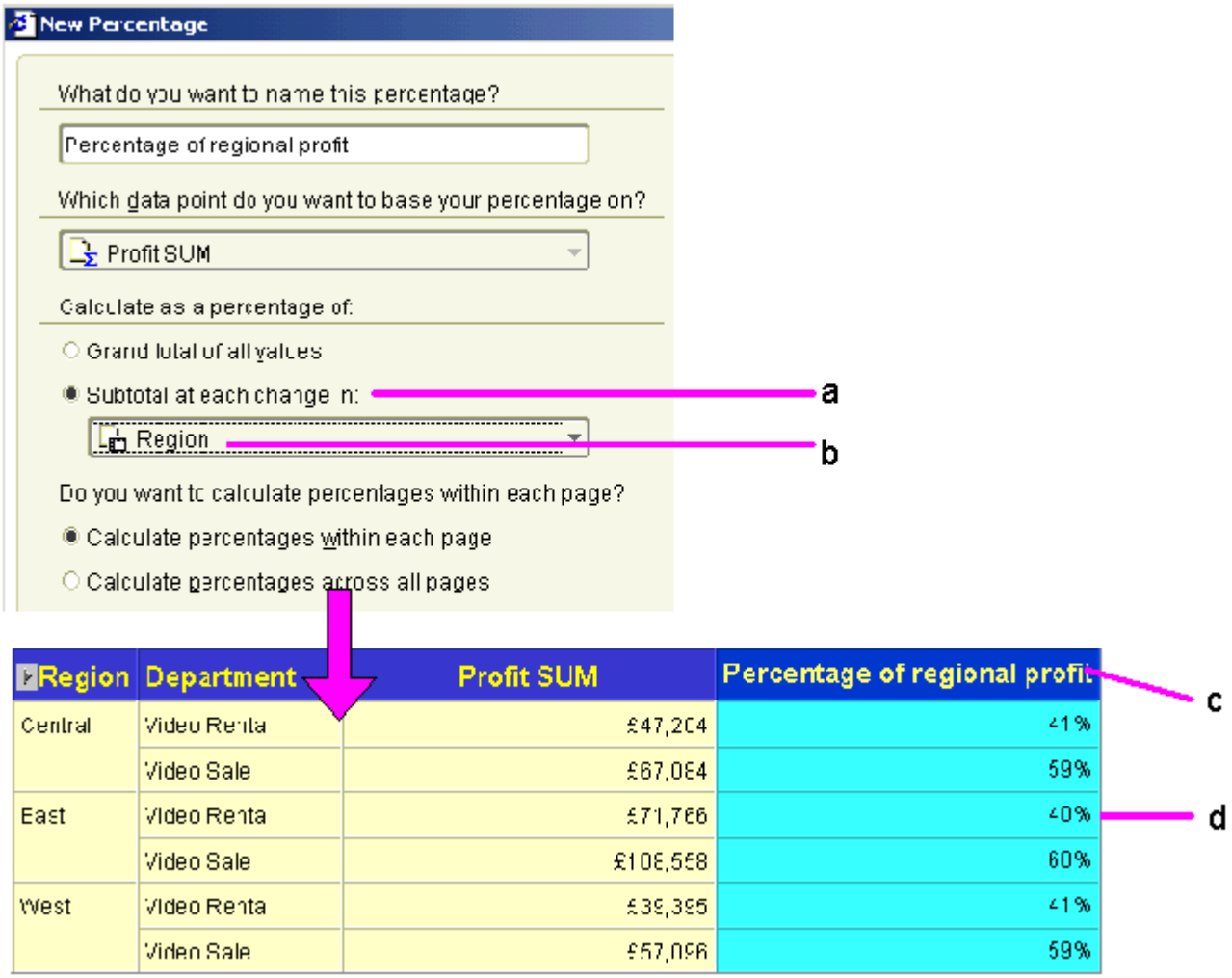
Example 1: This example shows how to use the New Percentage dialog to create a percentage, and how the percentage is displayed on a worksheet. In the figure below, you calculate the profit sum for each region and department as a percentage of total profit.

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 item
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 8% of total profit (that is, $25,157).

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.

A percentage based on a grouped total



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 (that is, $47,204). Notice that the percentages for each region add up to 100%.

Sorting data

This chapter explains how to use Discoverer Plus Relational'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 numeric 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 (that is, A to Z).

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 (that is, A to Z).

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 (that is, 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 (that is, A to Z).

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".

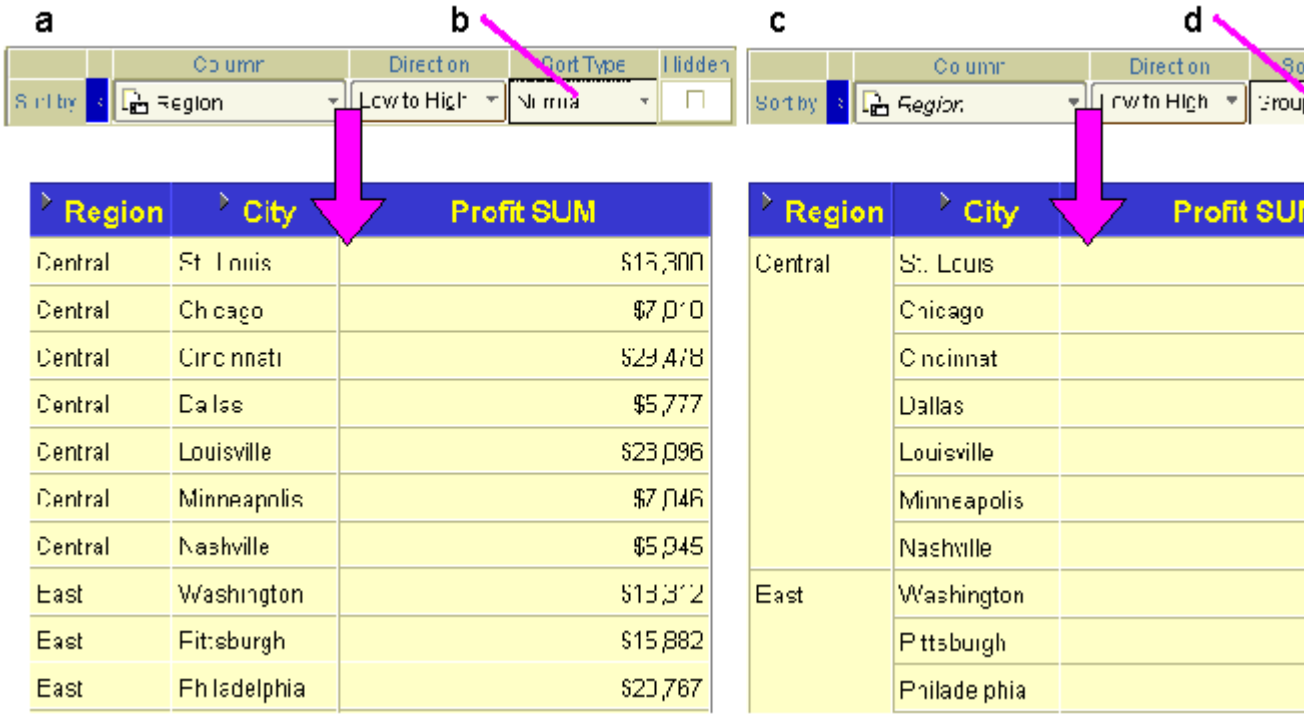
What is group sorting?

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 multiple items 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 (that is, the **Sort Type** setting is Normal). The worksheet on the right has the group sort on Region turned on (that is, the **Sort Type** setting is Group Sort). Notice that the repeated regions are removed when group sort is turned on.

Using the Group Sort option



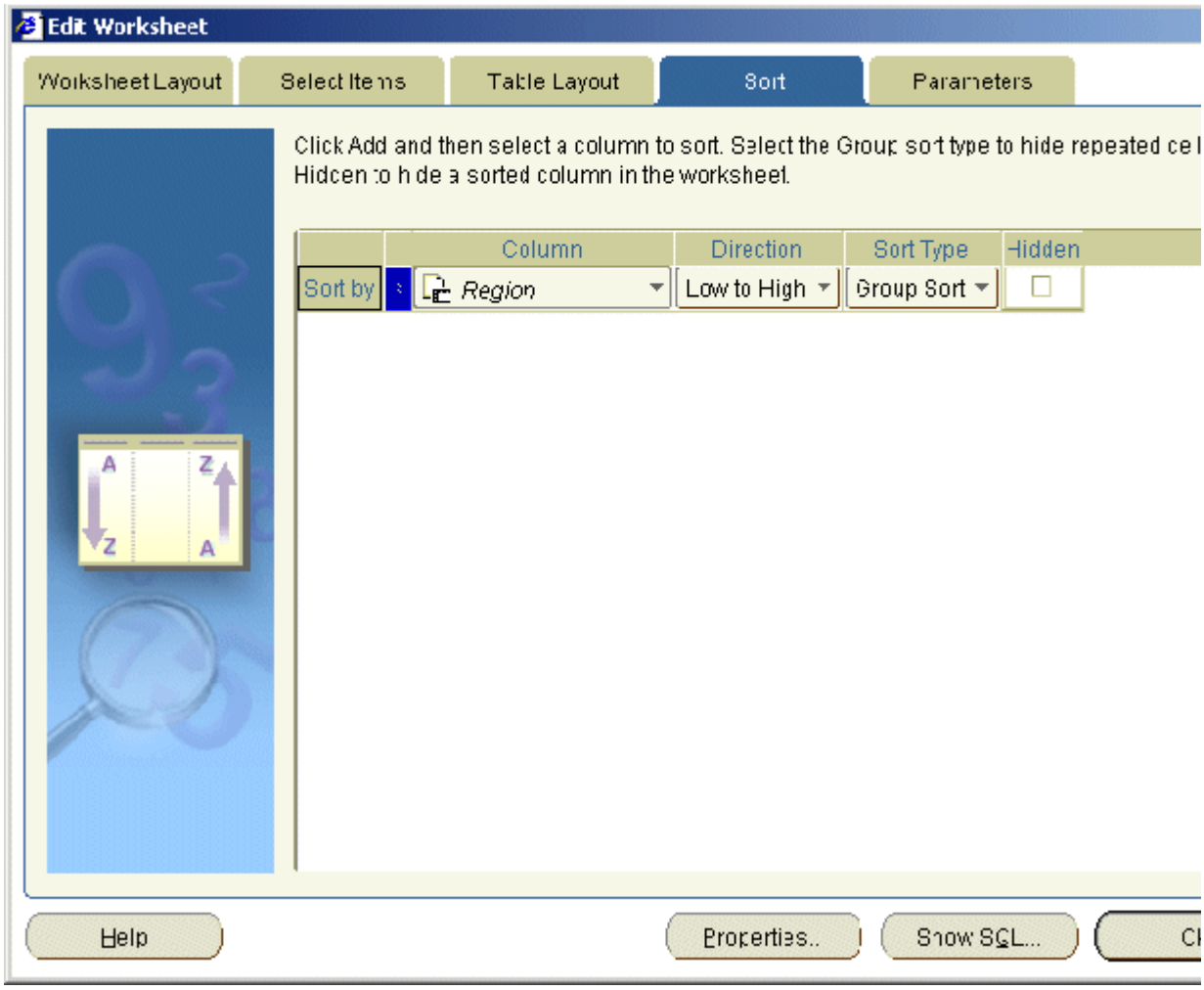
Key to figure:
a. The Sort dialog and worksheet before group sort is turned on.
b. The **Group** field set to none.
c. The Sort dialog and worksheet after group sort is turned on.
d. The **Group** field set to Group Sort.

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 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

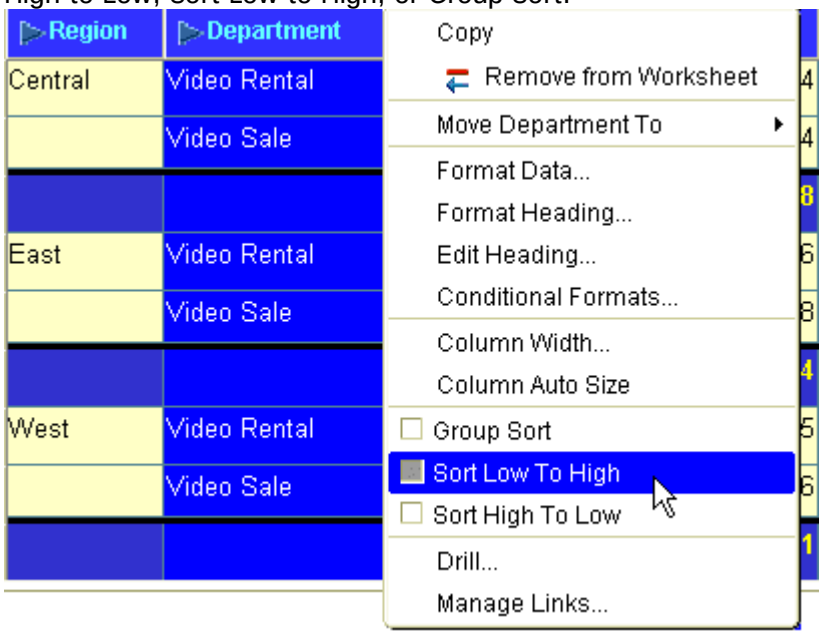
- rearrange the precedence of sort items by selecting an item in the sort list and clicking either Move Up or Move Down

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

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

Notes

- You can also sort worksheet data by right-clicking on a worksheet item and selecting either Sort High to Low, Sort Low to High, or Group Sort.

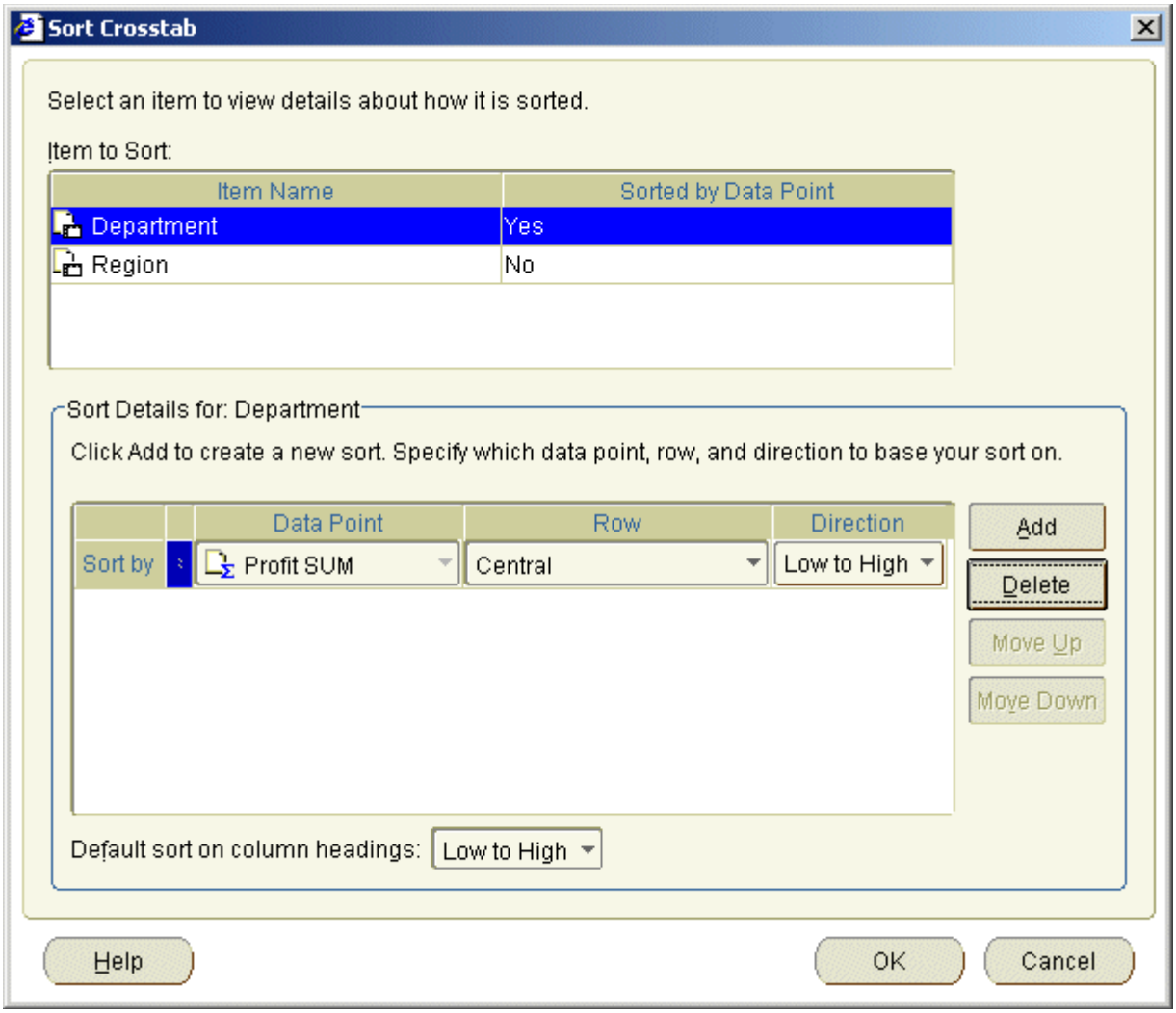


How to sort data on a crosstab worksheet

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



3. Select the item 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, hid the sorted column, or change a sort into a group sort.

To edit a sort:

1. Display the worksheet you want to sort.
2. Choose Tools | Sort to display the "Edit Worksheet dialog: Sort tab" or "Sort Crosstab dialog" (depending on the type of worksheet displayed).

   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 you want to edit.
2. Choose Tools | Sort to display the "Edit Worksheet dialog: Sort tab" or "Sort Crosstab dialog" (depending on the type of worksheet displayed).

   The Sort dialog displays current sort options in a sort list.
3. Select the item you want to remove.
4. Click Delete to remove it from the sort list.

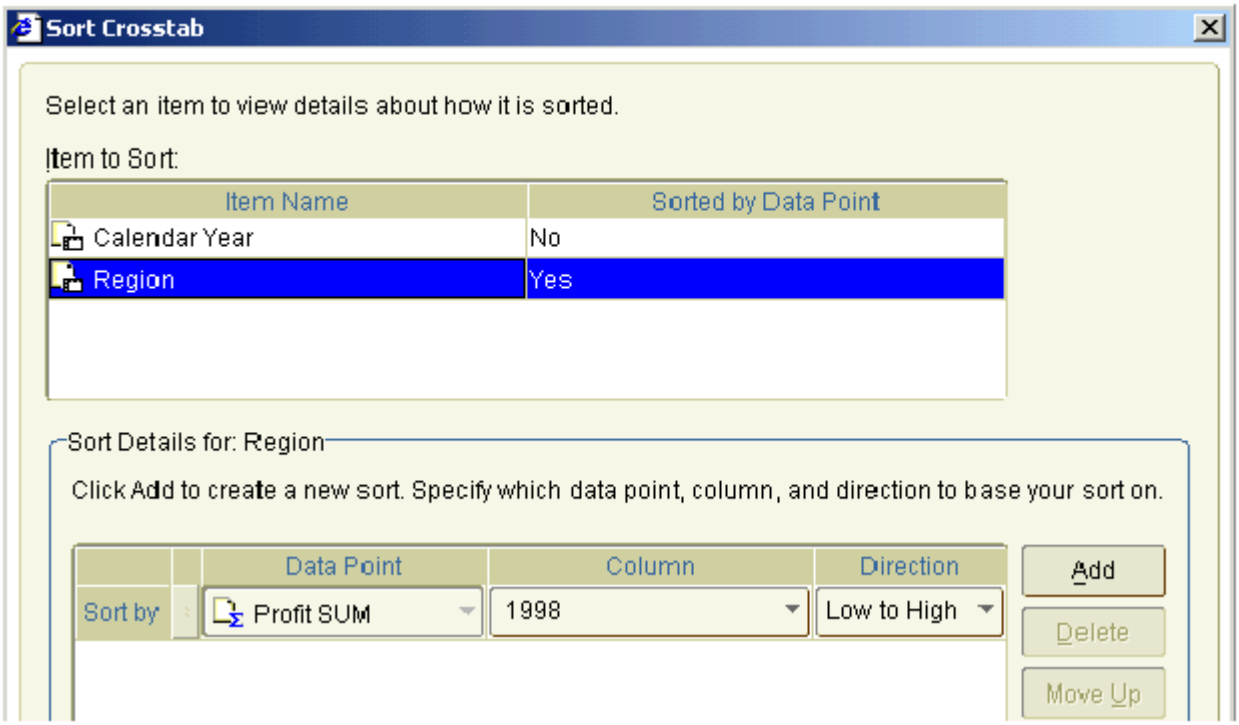
   Note: On crosstab worksheets, you cannot remove the original default sort (see "About sorting on crosstab worksheets").
5. Click OK to save the details and close the Sort dialog.

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

Examples of sorting

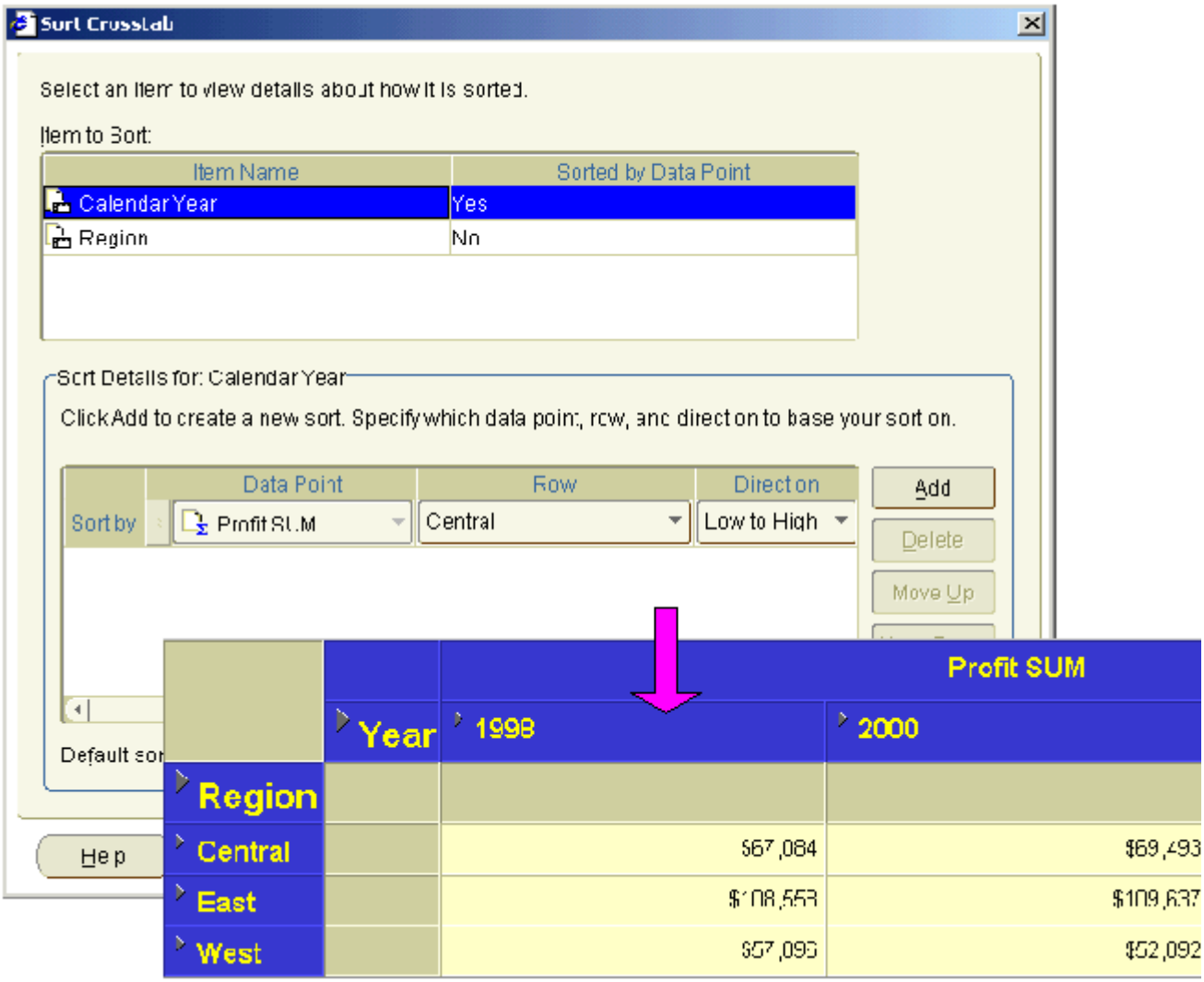
Example 1: This example shows how to use the Sort Crosstab dialog to sort a crosstab worksheet vertically. In this example, you want to sort data on Profit SUM down the column for the 1999 year. In the figure below, Region (on the left axis) is selected in the **Item to Sort** list. Profit SUM is selected in the **Data Point** list and 1999 is selected in the **Column** list.

A crosstab worksheet sorted vertically



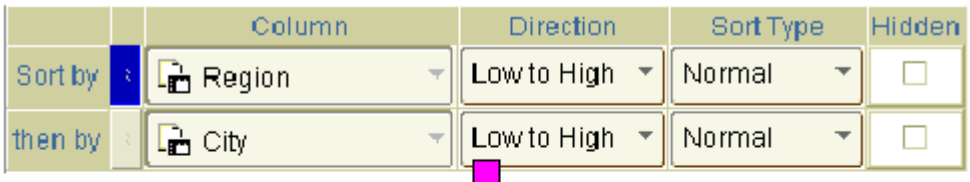
Example 2: This example shows how to use the Sort Crosstab dialog to sort a crosstab worksheet horizontally. In this example, you want to sort data on Profit SUM along the row for the Central region. In the figure below, Calendar Year (on the top axis) is selected in the **Item to Sort** list. Profit SUM is selected in the **Data Point** list and Central is selected in the **Row** list.

A crosstab worksheet sorted horizontally



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.

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

Using calculations

This chapter explains how to use Discoverer Plus Relational's calculations to answer typical business questions. For example, what are my top three best selling products? This chapter contains the following topics:

What are calculations?

Calculations are worksheet items based on formulas or expressions (for example, 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 (that is, the Sales SUM item) minus the value of costs (that is, the Cost SUM item).

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 ranked list position (that is, 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 BI Discoverer supports all functions that are supported by the version of the Oracle databas being used. 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 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 display Calendar Year and Department in a single column. For example:

  2002 Sales Department
- Various countries in the world use different characters as decimal separators. For example, the period (.) is used as a decimal separator in the United Kingdom and in the United States. The comma (,) is used as a decimal separator in Germany and France.

  For calculations, Discoverer uses the English format, for example, 167727.2. To use a different character as a decimal separator, then you must enclose the number in single quotation marks. For example, to use a comma separator, enter the number as: '167727,2'.

  If you use a character other than a period as the separator and if you omit the single quotation marks, then Discoverer treats the number as two separate input values, for example, 167727 and 2. This can cause incorrect data to be returned.

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 ranked list 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.

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	12

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 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 Relational 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 several bands (for example, quartiles) and places each value into one of the bands according to its ranked list position (for more information, see "Band by Rank dialog")
- Band by value - creates several 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 ranked list 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

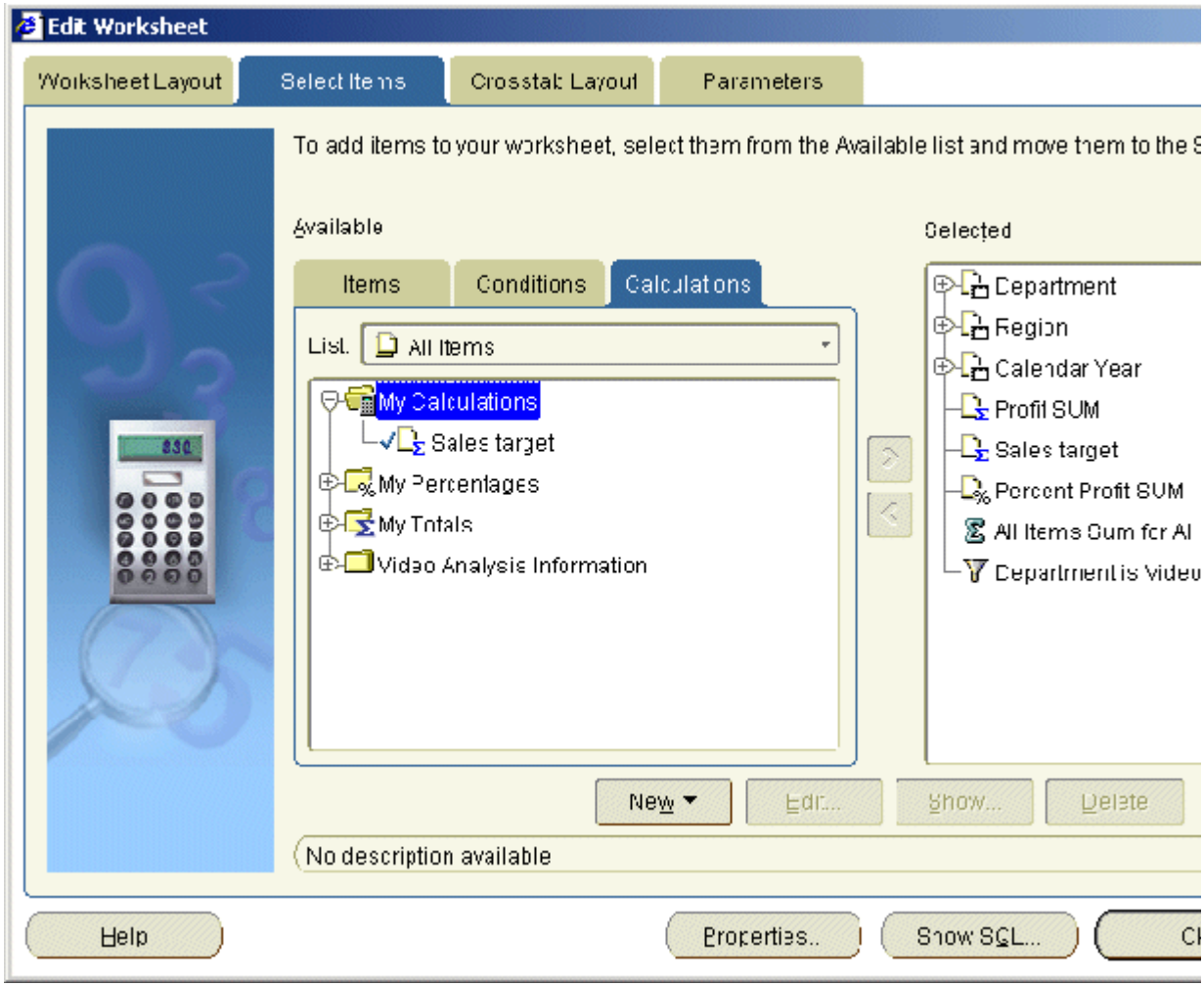
- When you use an analytic function template, you populate the **Calculation** field with the SQL statement for the analytic function formula. You can manually edit the SQL statement at any time in the **Calculation** field.
- For more information about analytic functions, see "What are analytic functions?".
- For more information about using analytic function templates, see "How to create a 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 you want to analyze.
2. Choose Tools | Calculations to display the"Edit Worksheet dialog: Select Items tab: Calculations tab".



The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active calculations are marked with a checkmark in the**Available** list and are also displayed in the **Selected** list.

3. To display an existing calculation, move the calculation from the**Available** list to the **Selected** list.

4. To hide an existing calculation, move the calculation from the **Selected** list to the **Available** list.
5. Click OK to close the Calculations tab and display the worksheet.

   Discoverer refreshes the worksheet.

Notes

- You can also display existing calculations in the following way:
  - If the Available Items pane is displayed, drag and drop a calculation from the Calculations tab to the worksheet.
- You can also hide calculations in the following way:
  - If the Selected Items pane is displayed, right-click on a calculation in the Selected Items list and select Remove from Worksheet.
- To remove a calculation item from the worksheet permanently, delete the calculation (see "How to delete calculations").

How to create calculations

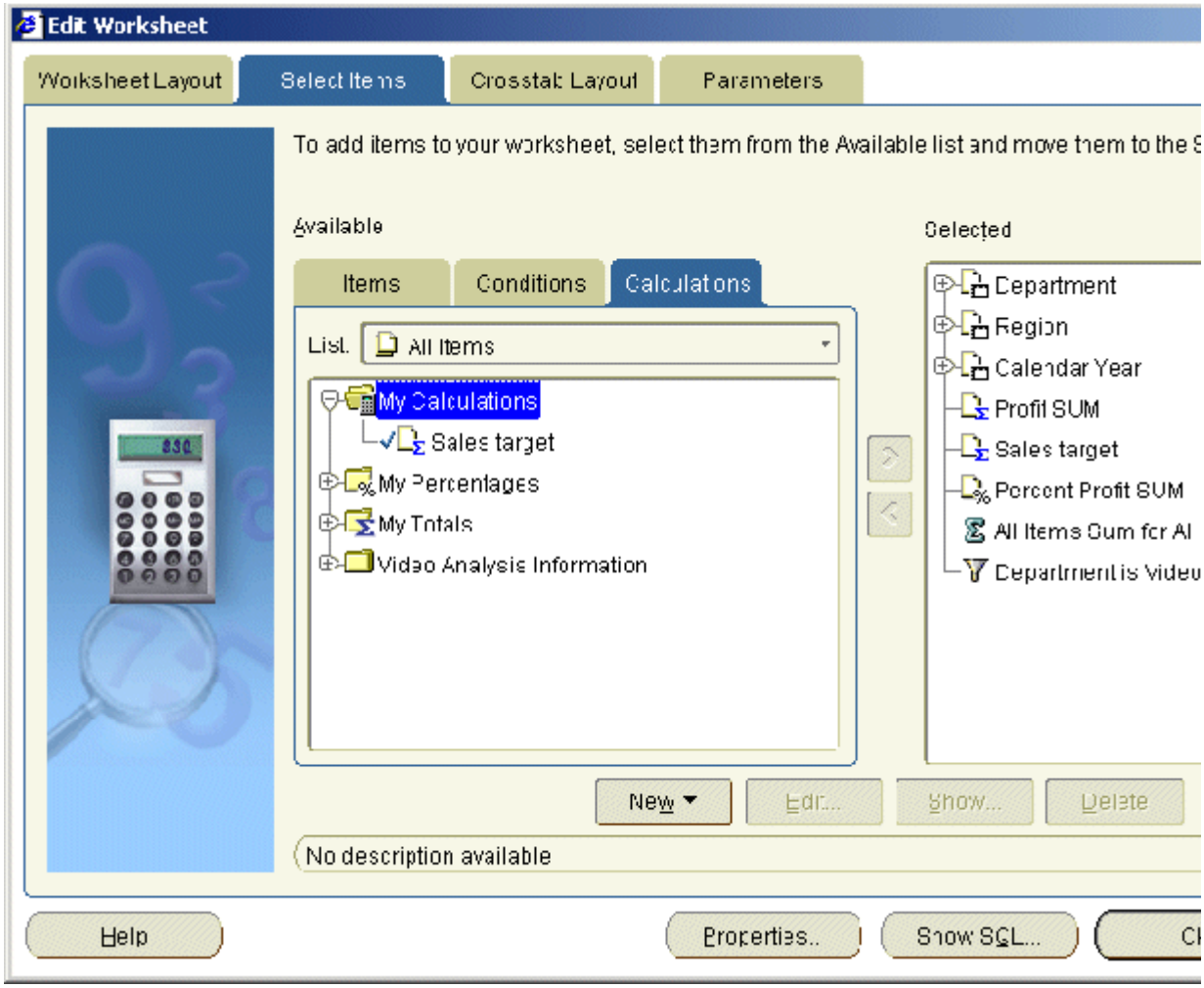
You create calculations to analyze a worksheet in a new way. For example:

- 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?").

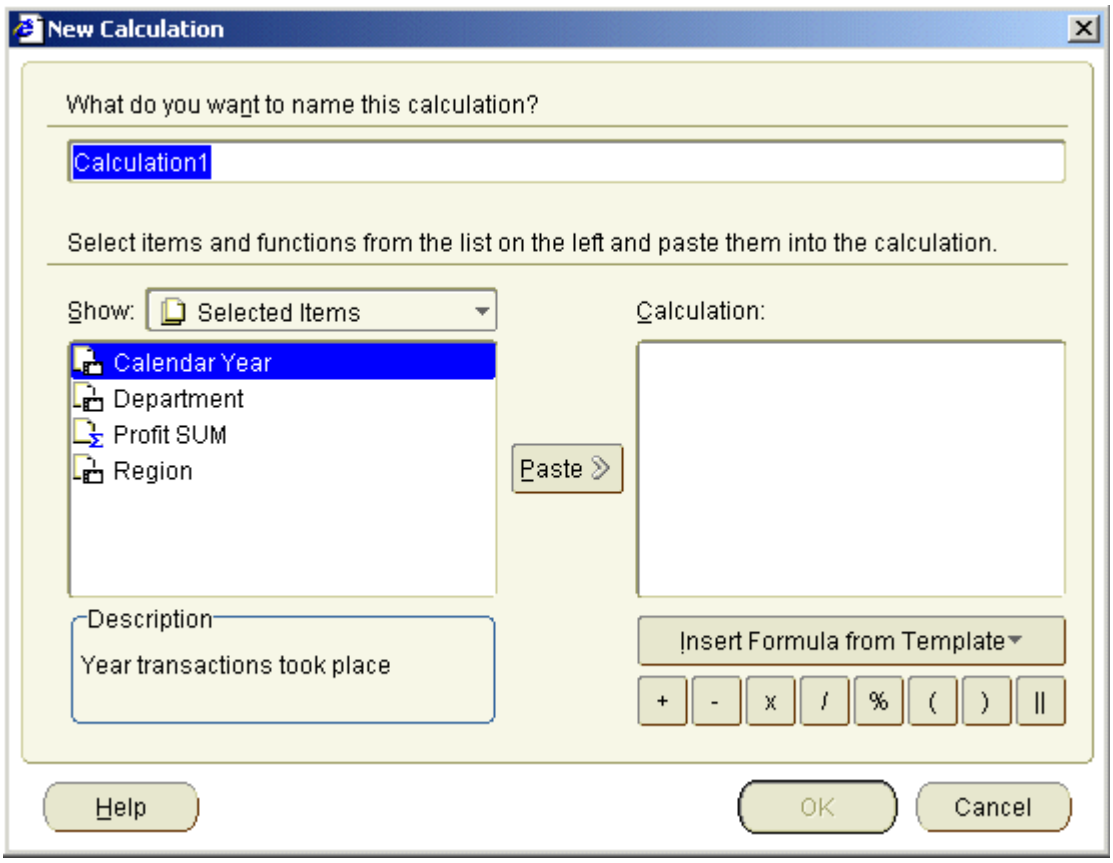
To create a calculation:

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



The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active calculations are marked with a checkmark in the **Available** list and are also displayed in the **Selected** list.

3. Click New and select New Calculation from the drop down list 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 is 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 (that is, =).

   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 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 calculation using an analytic function template").

Note: Calculations follow the standard Oracle calculation syntax. For a full description of this syntax, see the *Oracle Database SQL Language Reference.*

6. Click OK to save the details and close the New Calculation dialog.
7. Click OK to close the Calculations tab and return to the worksheet.

   Discoverer adds the calculation to the worksheet.

Notes

- You can also create a calculation in the following ways:
  - Select the worksheet item to use in the calculation, then select the New Calculation option on the Standard toolbar and choose one of the calculation types available.
  - Select two worksheet items to use in the calculation, then select the New Calculation option on the Standard toolbar and choose one of the calculation types available. For example, if you select item 1 and item 2 and choose + from the New Calculation options, Discoverer creates a calculation with the function item 1 + item 2.
  - If the Available Items pane is displayed, select the New Calculation option on the Available Items toolbar (for more information, see "Available Items pane").
  - If the Available Items pane is displayed, display the Calculations tab, right-click on My Calculations, and select New Calculation.
- 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".

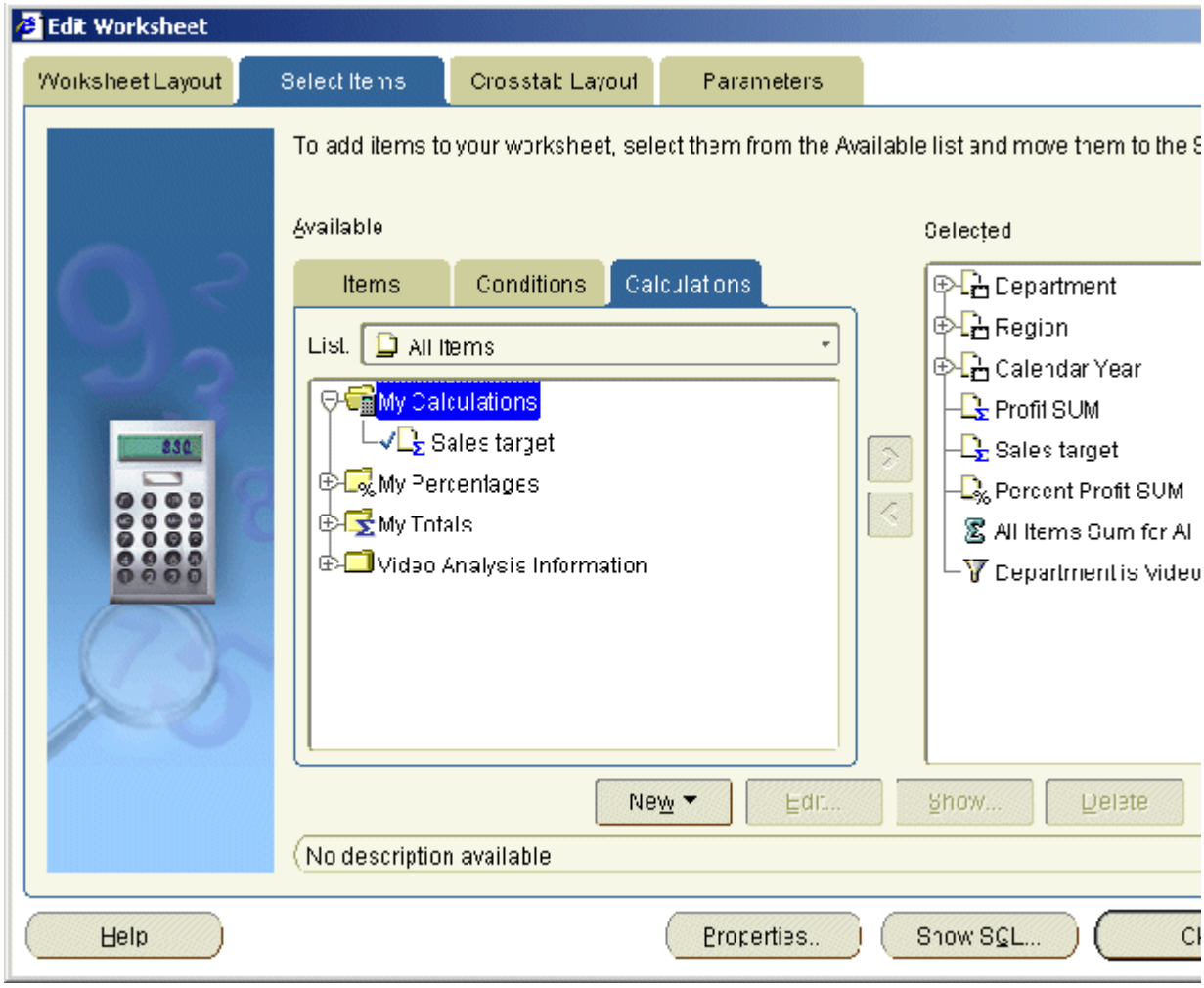
How to create a calculation using an analytic function template

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. Fo example, you might want to calculate the ranked list position (that is, rank) of sales outlets based on sale

You use a template to create an analytic function formula, which is inserted into the definition of a new o existing Discoverer calculation.

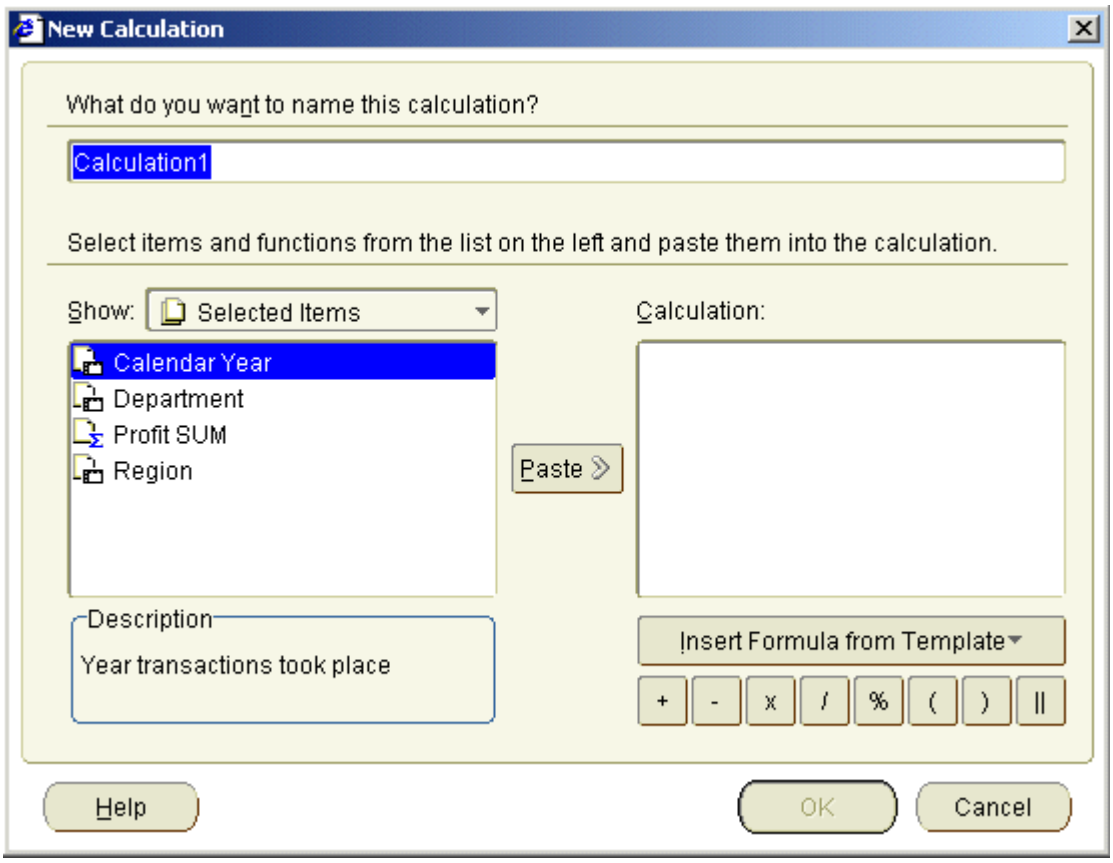
To create a calculation using an analytic function template:

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



The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active calculations are marked with a checkmark in the **Available** list and are also displayed in the **Selected** list.

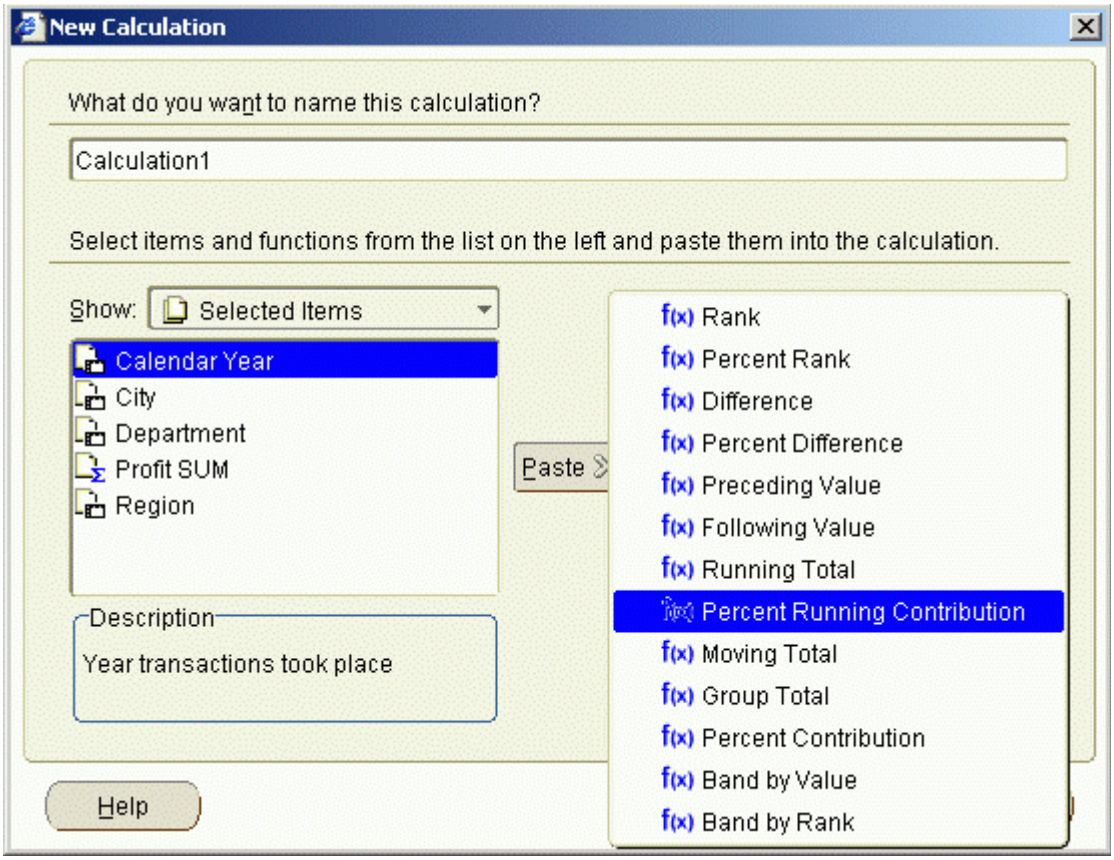
3. Click New and select New Calculation from the drop down list to display the "New Calculation dialog".



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 is displayed on the worksheet.

5. Click Insert Formula from Template to display a pop-up list of pre-defined templates.

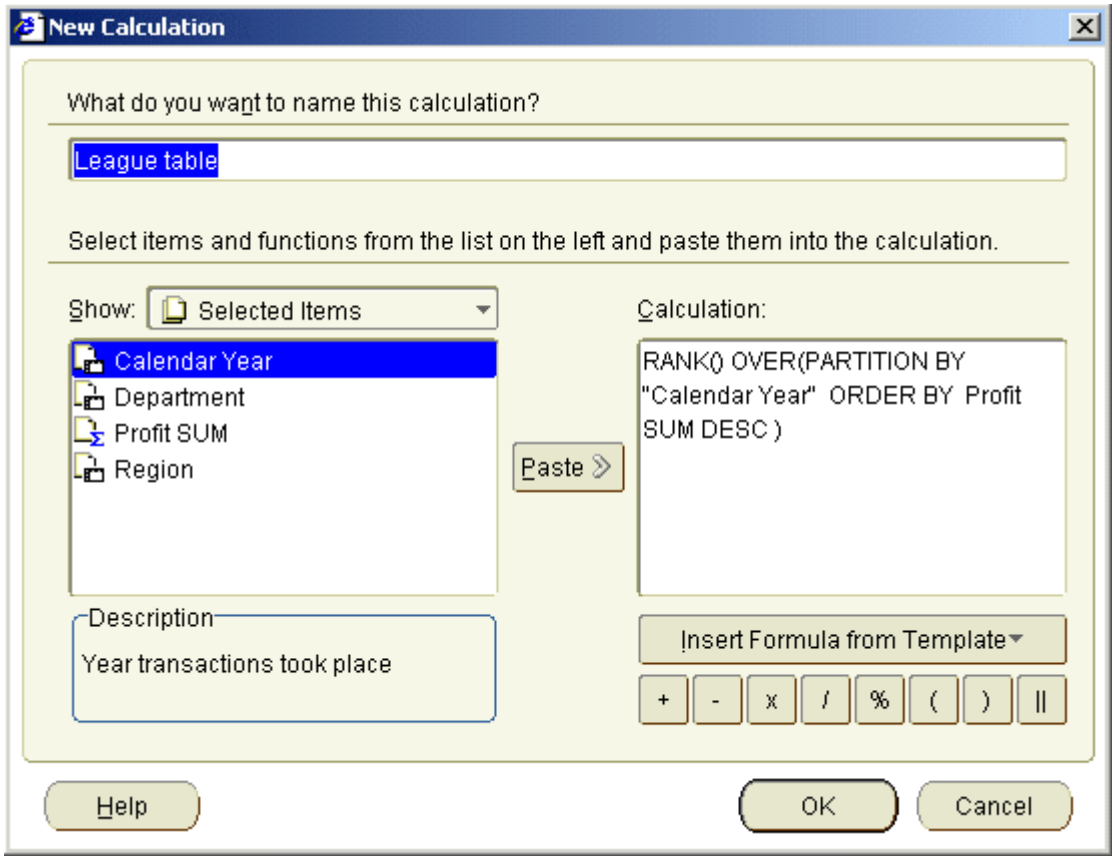


6. Choose a template from the pop-up list to display a template dialog for the selected analytic function.
7. Use the template to define the analytic function.

   For example, if you choose the Rank template, you 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 (for example, 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 (for example, 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 re-creating 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 multiple functions in the Calculation field, you must associate the functions (for example, using + or -).

9. Click OK to save the details and close the New Calculation dialog.
10. Click OK to close the Calculations tab and return to the worksheet.

    Discoverer adds the calculation to the worksheet.

Notes

- You can also create a calculation in the following ways:
  - If the Available Items pane is displayed, select the New Calculation option on the Available Items toolbar (for more information, see "Available Items pane").

    - If the Available Items pane is displayed, display the Calculations tab, right-click on My Calculations, and select New Calculation.

- For more information about analytic functions, see "What are analytic functions?" and "Examples of using row-based and time-based intervals".
- To use parameter values in analytic functions to collect dynamic input, you must manually prefix the item name with a ':' (that is, colon) character in 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 (for example, NTILE(4) OVER (ORDER BY Profit SUM DESC). If you want end users to select the number of bands at run time, 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)

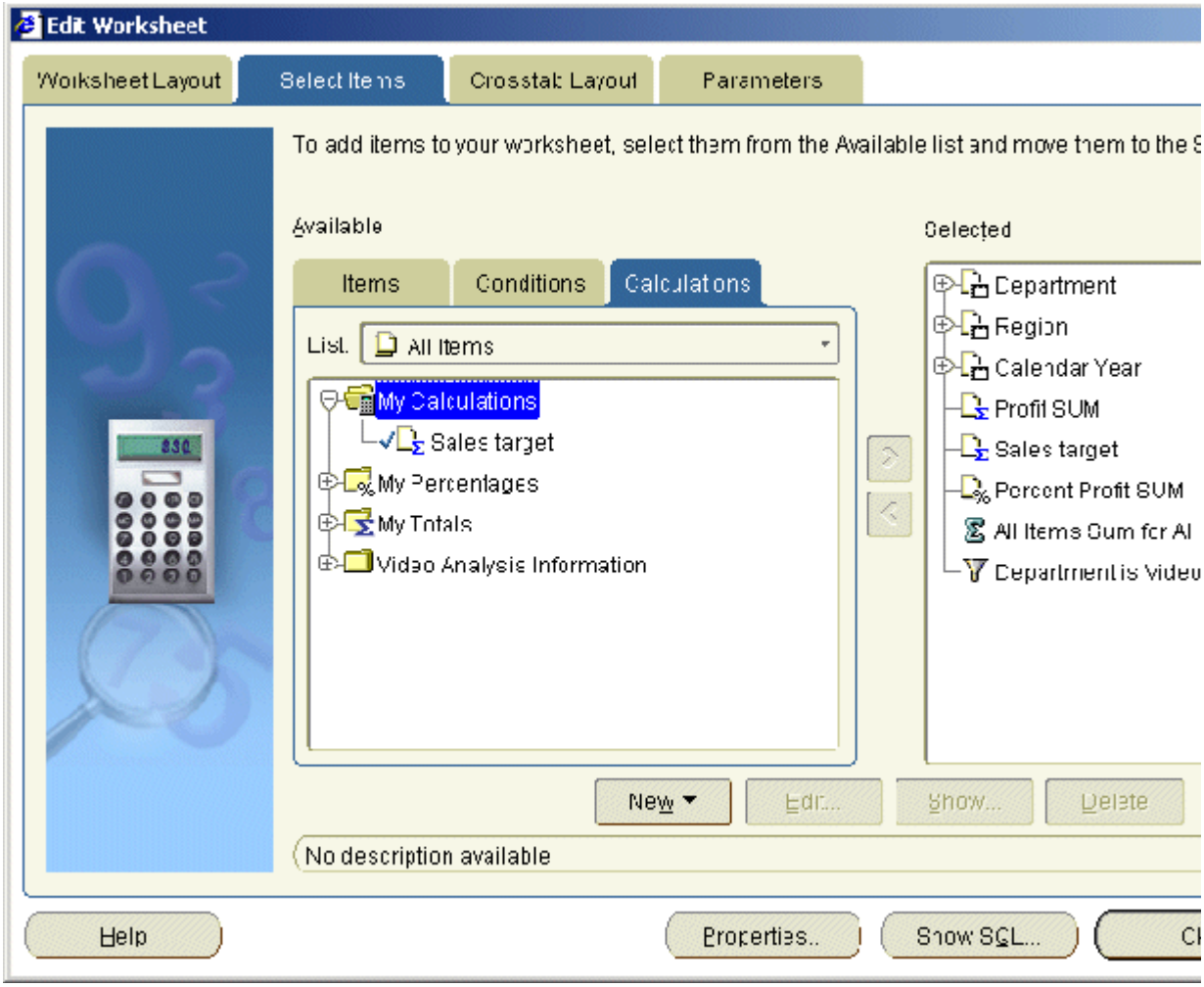
- Analytic functions follow the standard Oracle function syntax. For a full description of this syntax, see the *Oracle Database SQL Language Reference.*

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%.

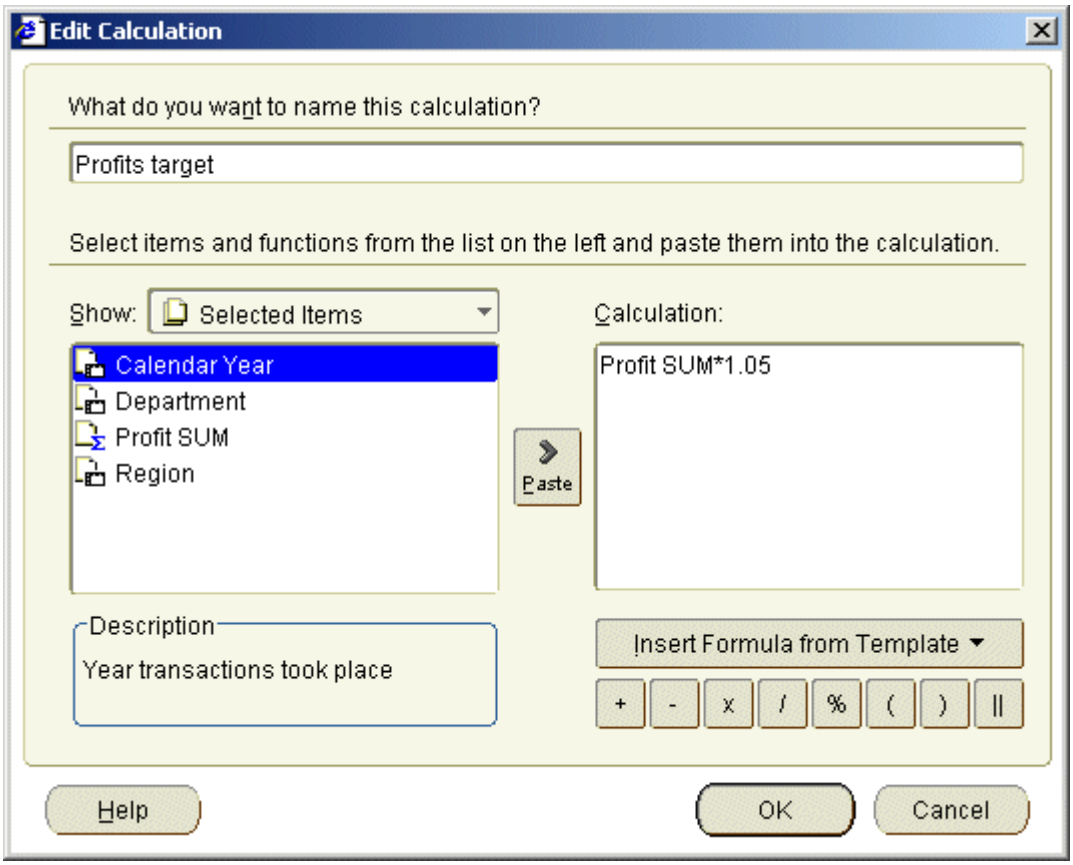
To edit a calculation:

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



   The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active calculations are marked with a checkmark in the**Available** list and are also displayed in the **Selected** list.

3. Select a calculation in the Available list.
4. Click Edit to display "Edit Calculation dialog".



5. Modify the calculation (for example, 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 re-creating 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 multiple functions in the Calculation field, you must associate the functions (for example, using + or -).
6. Click OK to save the details and close the Edit Calculation dialog.
7. Click OK to close the Calculations tab and return to the worksheet.

   Discoverer updates the calculation.

Notes

- You can also edit calculations in the following way:
    - If the Available Items pane is displayed, display the Calculations tab, right-click on a calculation, and select Edit.
- You cannot edit calculations created by the Discoverer manager. Only the Discoverer manager can edit calculations that they have created. To use a similar calculation, do the following:

1. Create a 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.

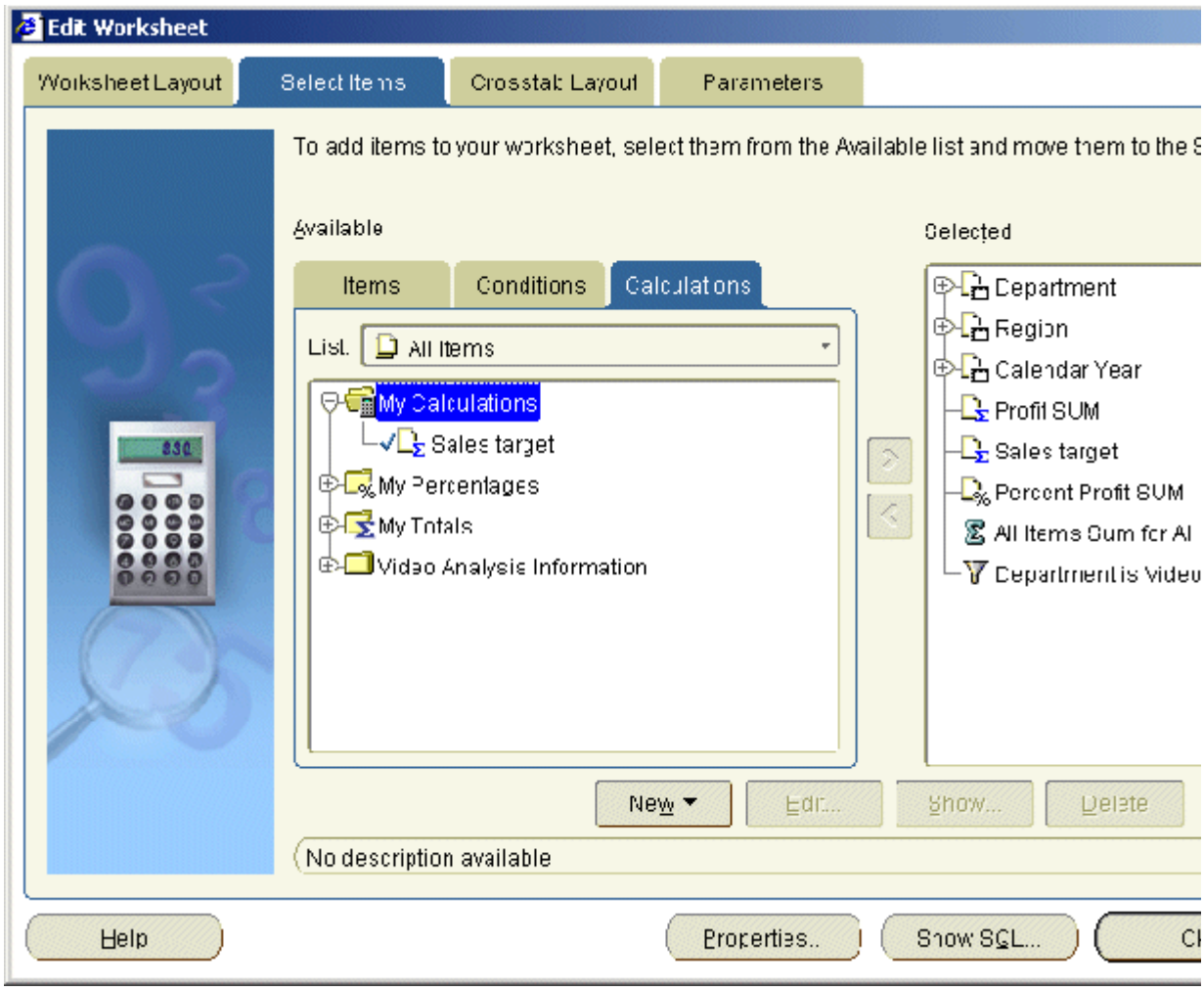
- If a calculation contains a syntax error, Discoverer displays an error message. You must correct syntax errors before you can save the calculation.

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. Display the worksheet you want to analyze.
2. Choose Tools | Calculations to display the"Edit Worksheet dialog: Select Items tab: Calculations tab".



The Calculations tab lists existing calculations, percentages, and totals available in the worksheet. Active calculations are marked with a checkmark in the**Available** list and are also displayed in the **Selected** list.

3. Select a calculation in the Available list.
4. Click Delete.

5. Click OK to return to the worksheet.

Discoverer removes the calculation that you specified.

Notes

- You can also delete calculations in the following way:
    - If the Available Items pane is displayed, display the Calculations tab, right-click on a calculation, and select Delete.
- 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, see:

- "Simple calculation examples"
- "Oracle analytic function examples"
- "Examples of using row-based and time-based intervals"