

Designing Adhoc Reports

Intellicus Enterprise Reporting and BI Platform



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For details, visit: <http://www.intellicus.com/acknowledgements.htm> .

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Adhoc Wizard

Use Adhoc Wizard to quickly design adhoc reports. Report design involves simple steps like selecting a data source and display fields. You can view the report immediately after it is designed.

Adhoc report may have tabular data arrangement, a matrix as well as a chart. On Adhoc Wizard, you can also:

- Set filters to get only the information that you need (filter-out unwanted records)
- Create groups to logically arrange the information
- Sort the data to re-arrange it in order of your choice
- Get totals / summaries at the end of page, report as well as a group
- Highlights records (when a condition is met) to catch user attention
- On Adhoc Wizard, you can also select template (it provides look and feel to the report) and output format of the report.

When you run an adhoc report in HTML output format, it opens in PowerViewer. On PowerViewer you not only view report output, but also change any of the above settings as well as do activities like show or hide chart, change template and then view the output by re-running the report.

The screenshot shows the 'Design > Adhoc Report Wizard' window. At the top, it says 'Untitled Report' and has buttons for 'Run', 'Preview', 'Save', 'Save As', and 'Open'. The 'Report Format' is set to 'HTML' with a 'View Options' link. The main area is divided into two sections: 'Select Display Fields' and 'Select Filter Criteria'.

Select Display Fields: This section includes a 'Report Title' text box, a 'Report Contents' dropdown menu set to 'Detailed', and a tree view showing '(Root)' with a plus icon. Below this are two large boxes: 'Available Fields' on the left and 'Selected Fields' on the right. Between these boxes are five arrow buttons: '>|', '>>|', '<|', and '<<|'. The 'Selected Fields' box also has up and down arrow buttons on its right side.

Select Filter Criteria: This section has a 'Max. Rows' text box and a table for defining filter criteria. The table has three columns: 'Field', 'Criteria', and 'Value'. There are three rows in the table, each with a plus icon in the first column.

Field	Criteria	Value
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

Figure 1: Adhoc Wizard

When you run the report, Adhoc Toolbar is displayed. Use this toolbar to make changes in adhoc report design without returning to Adhoc Wizard.


Using Adhoc Wizard, an end-user can design reports on adhoc basis. To get a report, user needs to select a data source, choose fields to be placed on report and that is all.



Important: The tabs for filtering, grouping, totals, sort order, matrix and chart will appear depending on configuration.

To open Adhoc Wizard, click Navigation > Design > Adhoc Wizard.



Tip: Another way to open Adhoc Wizard is, click  button report list page. This opens Adhoc Wizard page. After opening the wizard this way when you try saving report, it will be saved in the same category.

In this case, the page:

- May have data source dropdown box. You can select a data source and fields for the report.
- May have data source name. So that you are aware of the data source name. You can select fields for the report.
- May have only fields list (no data source name, no data source dropdown box). You can select fields for the report.

Adhoc Reports - General settings

This includes settings that effect entire report.

A template defines look and feel of the report. In **Template** dropdown, select the desired template for this report. In **Report Format** dropdown select the format in which you want to get the report output.

When a report is run, application can cache its data so that next time when the report is run with same parameters, it can run with cached data, instead of fetching data from database. This method improves performance. If data caching feature is turned on, **Refresh Data** checkbox will be displayed. By default, it is checked to fetch the data from database server. Uncheck it to use cached data (if cached) to run the report.

Application offers **View Options**, which are specific to the selected report format. For example, Pagination and Zipped download. To view the available options for selected report format and specify the needed options, click **View Options** hyperlink.

Buttons

- **Run:** To view the report in the selected report format and with the chosen settings.
- **Preview:** You preview a report when you have not completed with report design and want to have a feel of report output. When you preview the report, application fetches limited number of records (by default 200, which administrator can change) from the database and generates the report. This

saves server resources and is much quicker. It is same as **Run** in all other aspects (like template, report output, etc).

- **Save:** To save changes made in the report.
- **Save As:** To save the new report, as well as to rename and save an existing report.
- **Open:** To open and edit an adhoc report.

Selecting Data Source and Display Fields

Under the **Select Display Fields** tab, you specify report title, select report content type and specify data source and fields to be displayed on the report.

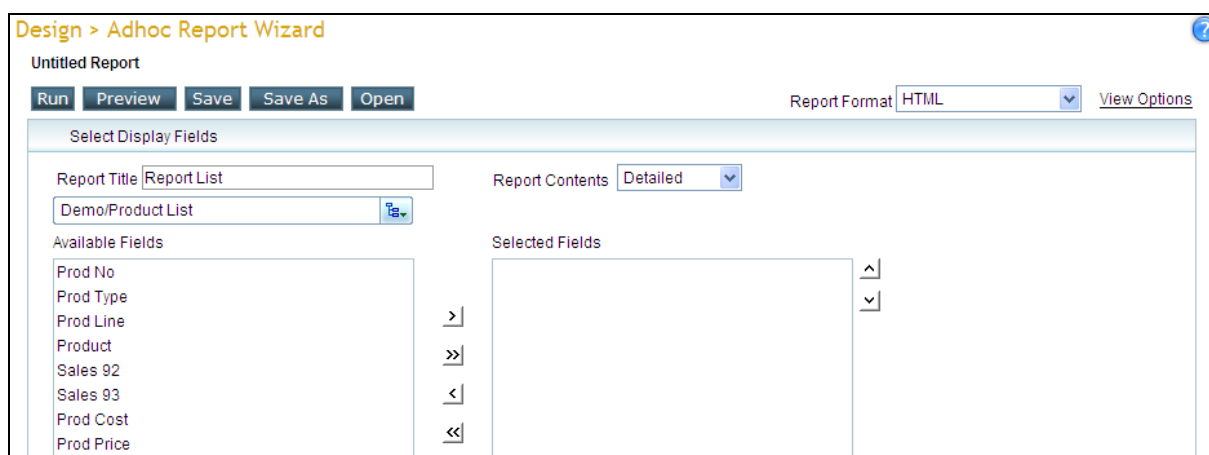



Figure 2: Selecting Display fields

In **Report Title**, specify the text that should appear as title of the report. Report title appears on all the report-pages.

In **Report Contents**, select *Detailed* option to get a detailed report (one line per database record). Select *Summarized* to get a summary report. A summary report contains report level, page level and group level summary. The report needs to be grouped in order to get group level summary.

Selecting the desired data source

Query Objects (QO) contain fields (database-fields and formula fields) that one can select for report. QO available for your selection can be at (Root) or inside a folder.

Click  to open object selector. Navigate to the desired folder and select the QO. Object Selector's features like multiple views, filtering and sorting makes the selection easier and quicker. Refer to the online help to know more about Object Selector.

After you select a data source, the fields retrieved from the data source will be listed as check boxes or dual list.

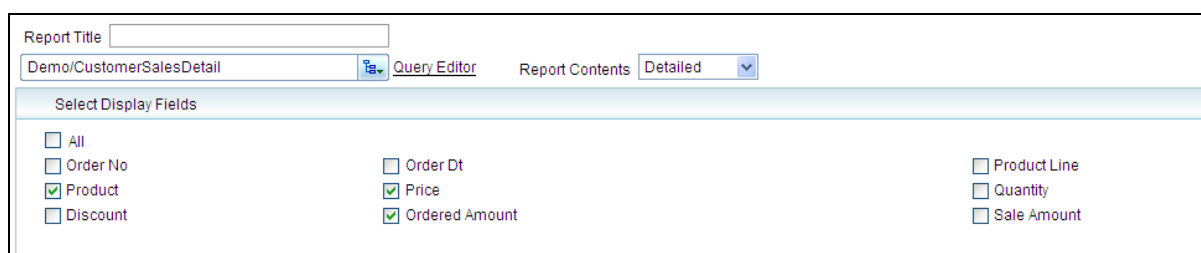
If you are a Super administrator, Administrator or a user having *Data Admin* privilege, you can create a new query for this report also. To start creating a new query, click **Query Editor** link. Report Objects tab will open, from where you can setup a query object on **Query** page.

If you have opened this page from report list page, then Adhoc Wizard page may have:

- **Data source dropdown box.** You can select a data source and fields for the report.
- **Data source name.** You can read data source name, but can't change a data source. You can select fields for the report.
- **Only fields list** (no data source name, no data source dropdown box). You can select fields for the report and proceed.

Selecting report-fields when listed as check-boxes



- Check the field name to include it in the report.
- Check All to include all the fields in the report.
- If configured in the QO, fields will be grouped and listed below group-names. Fields that are not grouped are listed under (Not Grouped). Check the group name to select all the fields within the group.





The screenshot shows a web interface for selecting display fields. At the top, there's a 'Report Title' field and a 'Demo/CustomSalesDetail' dropdown. Below this is a 'Select Display Fields' section. It contains a list of fields grouped under 'Demo/CustomSalesDetail'. The 'Product' group is selected, indicated by a green checkmark. Other groups include 'Order No', 'Discount', 'Order Dt', 'Price', 'Ordered Amount', 'Product Line', 'Quantity', and 'Sale Amount'.


Figure 3: Select group name to select all the fields in the group

Setting field sequence

A field sequencer window (in closed state) is available on the right side of the tab. Click **Sequence** to open it. When it is open, it lists fields selected for display on the report. Sequence of fields from top to bottom indicates fields' placement sequence on the report from left to right respectively. To change a field's sequence, click the field in sequencer window and click  and  buttons to shift the selected field up (left) or down (right) respectively.

Selecting fields in Dual list

To select a field, click and drag it from **Available Fields** and drop it to **Selected Fields**, or click the field and click  button. To select all the fields, click  button.

To select a group, click and drag the group-name from **Available Fields** and drop it to **Selected Fields**, or highlight the group-name and click  button.

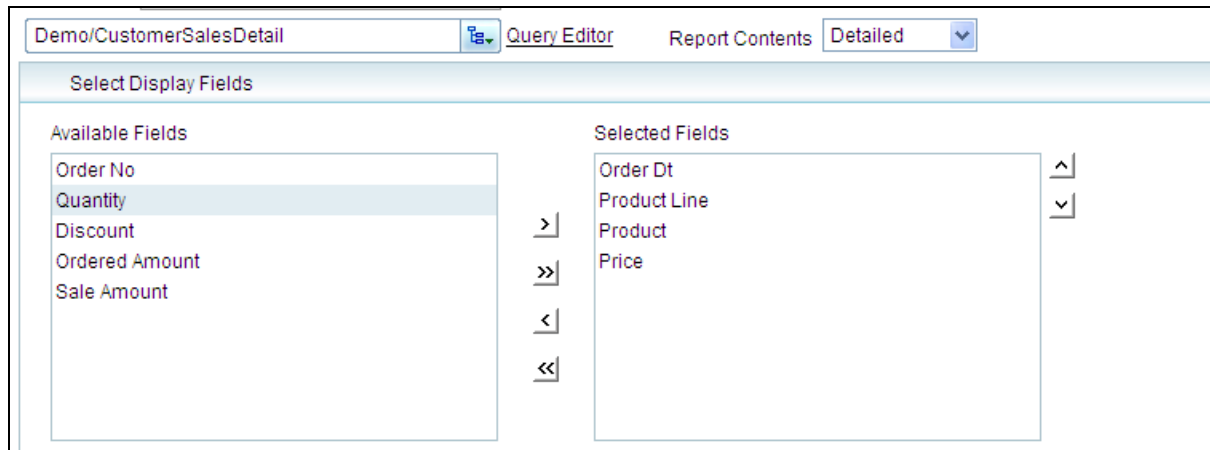





Figure 4: Dual List for selecting fields for report

When selecting display fields through dual list, fields may be arranged in tree view. To select all the fields within branches, select top branch. To deselect a field, highlight it from **Selected Fields** and click  button. To deselect a group, highlight the group-name from **Selected Fields** and click  button. Click  button to deselect all the fields.

Setting field-width

Width is the number of characters (1 characters = 20 pixels) of the selected field. If you reduce the field width, the field will occupy less horizontal space on the report. Increasing value will occupy more. What will happen if there are more characters than can be set, will depend on report template used.

View Options

You can select View options for the selected report format.

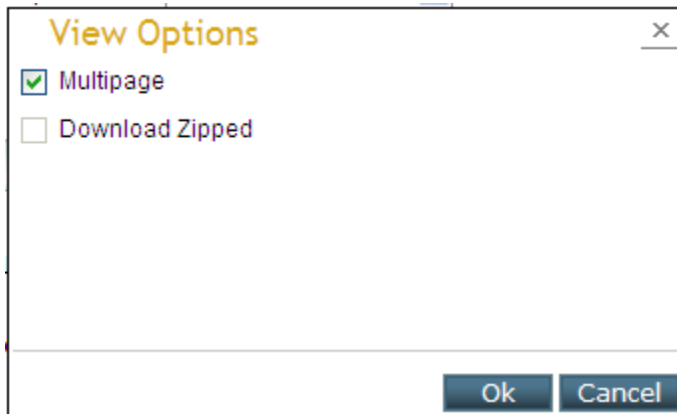


Figure 5: View Options appearing on Adhoc Wizard

1. Click **View Options** link.
2. In **View Options** dialog, select options for the selected output type.
3. Click **Ok** to proceed.

To save a new report

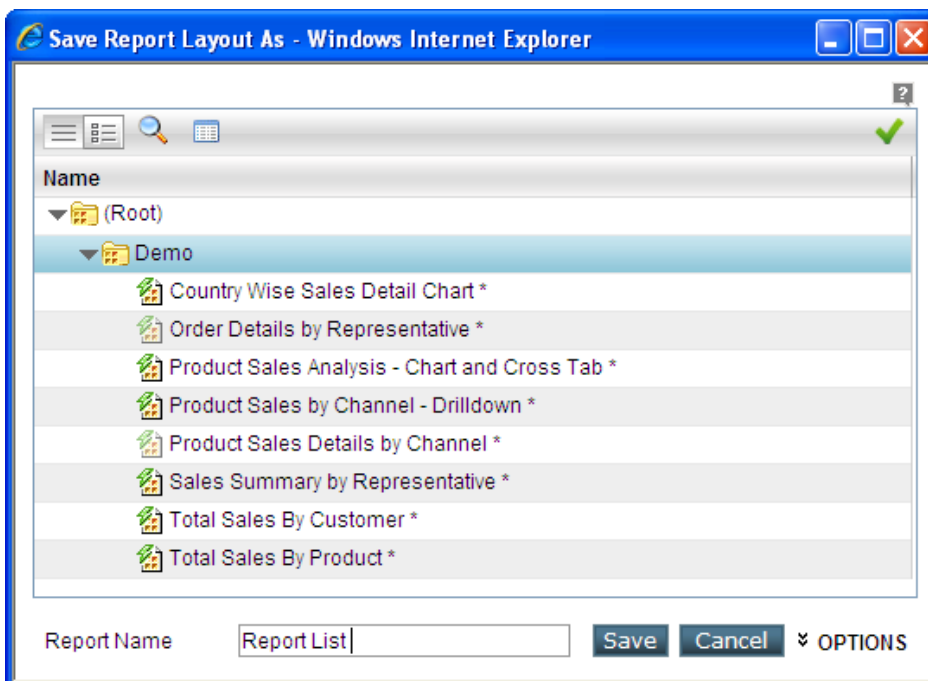


Figure 6: Saving an Adhoc Report

1. Click **Save As** Button. The **Save Report Layout As** dialog box is displayed.



Note: While saving for the first time, even if you click **Save** button, **Save Report layout As** dialog box will appear.

2. Navigate to the desired category in which you want to save the report.
3. In **Report Name** box, specify a name to uniquely identify the report being saved. This name will appear on report list.
4. Select **Public** if you want the report to be available to everyone, select **Private** if you want the report to be available only to you.
5. Specify the **Description**.
6. Click the **Save As** button.

The report will be saved.

Save as a existing report

1. Open the Adhoc report in Edit mode.
2. Click Save As button.
3. A Save As dialogue is available. Mention the name of the Adhoc report. Click 'Options' to have access to more properties. There is a checkbox available "Copy Access Rights". This checkbox is to be checked if the access rights need to be the same for both reports, source and target (saved as). Keep the checkbox as unchecked if you want to assign different access rights for the reports.

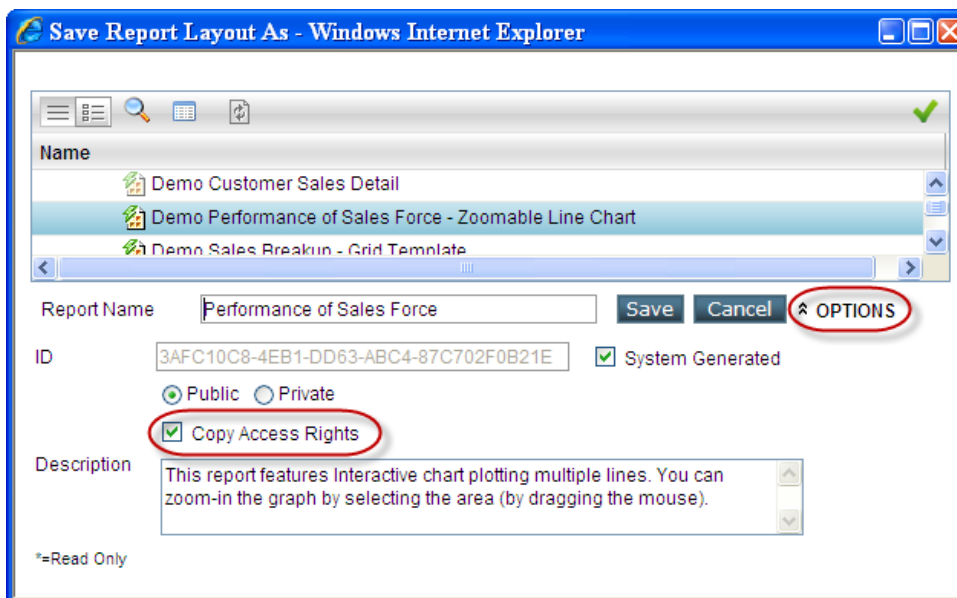


Figure 8: Save As a Report

4. Click Save. This will close the Save As dialogue after saving the settings.

Opening an adhoc report to work on

When you already have an adhoc report, you can open it on Adhoc Wizard to make changes in it and generate report or again, save the changed report.

If you know the location of report, Which ever page is open on Intellicus portal, you can click Repository > Click folder name where the report is located > Click Report option and double-click the report you want to open.

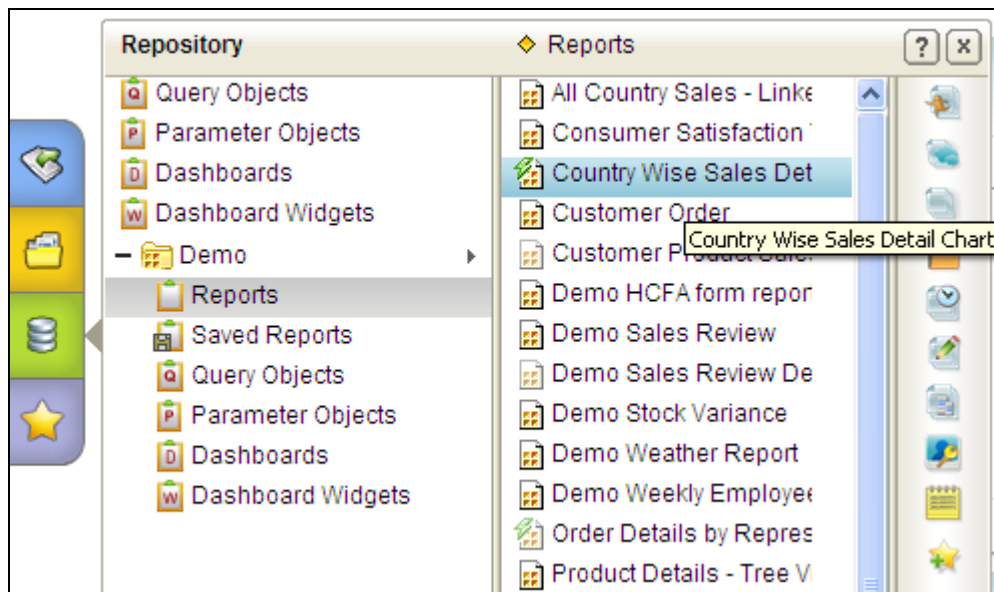


Figure 7: Opening an adhoc report from Repository Explorer

If you are already on Adhoc Wizard, you may wish to open a report using **Open** button available on the page. On **Open Report Layout** dialog, navigate to the folder where report is available, and double click the report to open.

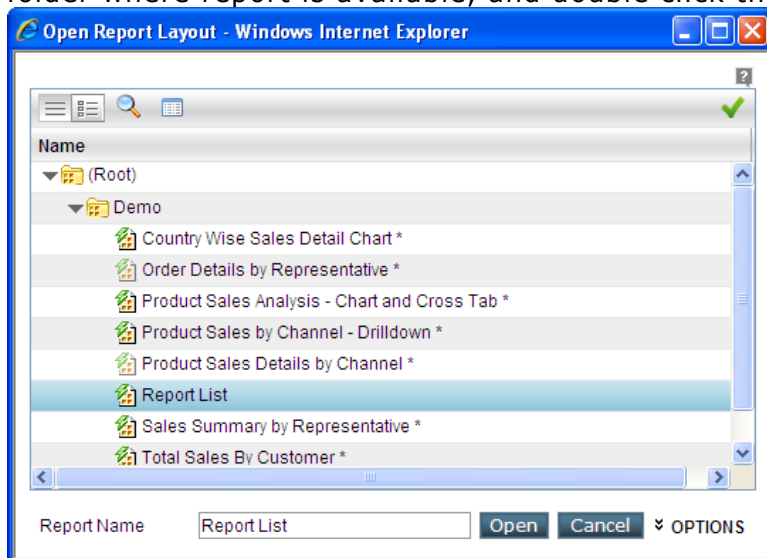


Figure 8: Open Report Layout dialog box

Folders and reports are listed on Object Selector area. Refer to dialog's online help to know features of Object Selector and how to search the report you want to open.

Selecting Filter Criteria

Filter is a condition (for example, city = "NYC"). The records that meet the condition will be displayed on the report. This way, by specifying one or multiple filters, you make sure you get only the desired records on report.

You can also control the number of records to be fetched from database by specifying the number in **Max. Row** text box. For example, if you specify 100 in **Max Rows**, but query's result-set has more records, database will send only first 100 records.

Database may have records with exactly same values in all the fields of the record-set.

For example, table may have fields SalesPersonName, City, Sales and Month, having one record per SalesPersonName per month. "Sales Persons List" report, will have only sales persons names, you will fetch only SalesPersonName and City fields. This may potentially give 12 duplicate records for every SalesPersonName (even if they are not duplicate records in the table).

To get only first of such duplicate records, click **Suppress Duplicates** checkbox.

Note: To check if the record is duplicate or not, its field values are compared with that of the previous record in record-set. So, if you wish to use Suppress Duplicates feature, make sure that the report is sorted on all the report fields.

All the fields that query has fetched are listed in **Field** dropdown.

A field may appear selected and disabled in **Field** dropdown. Such a field may also carry an asterisk. This means, it is mandatory for you to set filter criteria on this field.

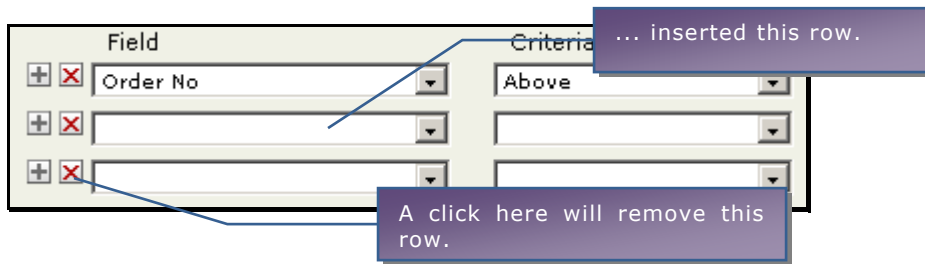
A **Field** dropdown may carry an asterisk, but dropdown may be enabled for making selection. This means, it is mandatory for you to select a field in that row and set filter.

If **Field** dropdown does not carry an asterisk mark, it means, it is optional for you to set filter in that row.

Field	Criteria	Value
Manufacturer	In List	Samsons PrecisionTV Mirage Crimson
Product Category	Is	Televisions

Figure 9: Selecting Filter Criteria


Adding and removing Criteria rows



After selecting criteria field, you may select **Criteria** condition and specify filter **Value**. Options appearing in Criteria will depend on field type. If between is selected as criteria, then specify two value-range (both values inclusive).

If you can see multiple values in **Value** box, it means, you can select multiple values for criteria. To select multiple values,

1. Press and hold down **Ctrl** key on the keyboard and click the value you want to select.
2. Similarly, click other values you want to select. (Clicking a selected value will unselect that value).
3. Release the **Ctrl** key.

Use Date picker dialog to select the date. Click  icon to open date picker dialog box.

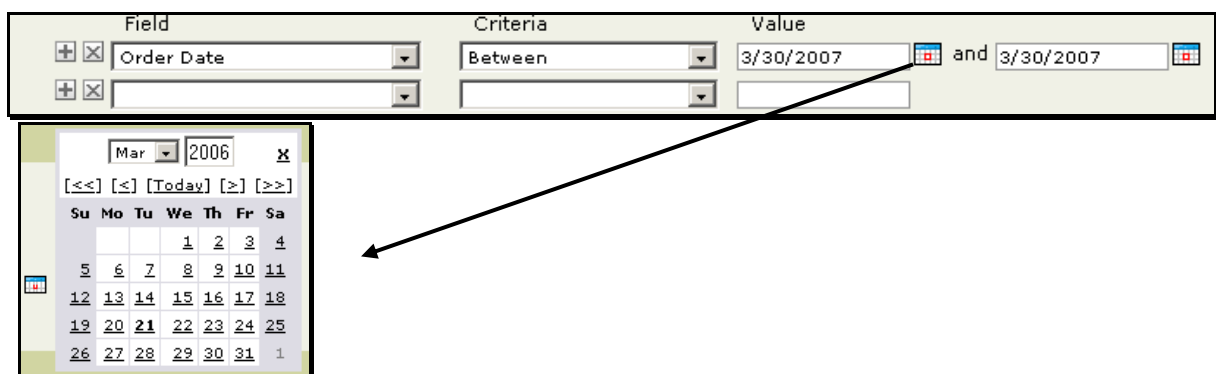


Figure 10: Click Calendar icon to get this dialog to select date

Click the date to be selected. That date will be selected and dialog box will close.

To change the year, type in the year or click << or >> to select previous year and next year respectively. To specify a different month, select it from dropdown, or click < or > to select previous and next month respectively. To select a date, click that day in the calendar. You can also type in the date. For explanation of date format, refer to online help.

When the value is a Network ID

- **IP:** It needs to be specified as a set of 4 numbers (decimal) separated by dots. Each of the number needs to be between 0 and 255. Example: 90.233.245.162.
- **MAC Address:** It needs to be specified as a set of 6 numbers (hexa) separated by colon. Each of the number needs to be between x00 (00) and xFF (FF). Example: 15:FF:01:F1:01:B4 .

TIP: While specifying MAC address, putting a colon between the hexa digits is not necessary. The application will automatically insert colon after every second 'digit' (starting from right side). Example: number entered is FF101B4; Number changed to is 00:00:0F:F1:01:B4.

To filter using a user parameter's default value

The screenshot shows a 'Select Filter Criteria' dialog box with a title bar indicating '3 Selected'. It contains a table with three rows of filter criteria. The first row is 'Rep No' with a 'Criteria' of 'Is' and a 'Value' of '12'. The second row is 'Site No' with a 'Criteria' of 'Is' and a 'Value' of '01'. The third row is 'Order Date' with a 'Criteria' of 'Between' and a 'Value' of '3/24/2007' and '3/24/2007'. The 'Order Date' row is highlighted in blue. Above the table, there are checkboxes for 'Max. Rows' and 'Suppress Duplicates'.

Figure 11: Specifying default value of parameter

1. Select **Field** and **Criteria** condition.
2. If not, uncheck **Prompt** check box.
3. Select desired parameter in Use Parameter drop down box.

Note: If you do not get Prompt check box and / or Use Parameter drop down box, check the Adhoc Wizard tab of Administration > Configure menu option.

The default value set for the parameter will be used for filtering the report.

Specifying parameter value at run time

1. Select **Field** and **Criteria** condition.
2. Check the **Prompt** checkbox.
3. Select appropriate parameter in **Use Parameter** drop down box.

The Smart Date feature

When a field selected is of **Date** type, you have the option to use Smart Date feature. Using this feature, you can simplify criteria selection for date range based on the date of report generation.

For example,

- Date of hire **is in last** 10 *days* from today (report generation date).
- Date of sales transaction is **in this** *Quarter*.
- Transaction Date **is in last** *month*.
- Date of retirement **is in next** *month*.

Field	Criteria	Value
<input type="checkbox"/> <input type="checkbox"/> Order Date	Between	3/24/2007 and 3/24/2007
<input type="checkbox"/> <input type="checkbox"/> Closed Date	is in Last	1 Week(s)
<input type="checkbox"/> <input type="checkbox"/>		

Figure 12: The Smart Date feature

For criteria, you may select any of the following:

- is in last
- in this
- is in next



Note: The options that will appear in Criteria drop down box are configurable. So, the actual option that will appear will depend on the configuration made.

If **in this** is selected as **Criteria**, the **Value** drop down box has following options to choose from:

- Day
- Week
- Month
- Quarter
- Year

If **is in last** or **is in next** is selected in **Criteria**, specify the number of Day(s), Week(s), Month(s), Quarter(s) or years (as the case may be) in **Value** entry box. Explanation for each of the option is given below:

- **Day(s):** The number of days from the date of report generation.
- **Week(s):** The number of weeks from the date of report generation. A week is considered from Sunday to Saturday.
- **Month(s):** The number of months from the date of report generation.
- **Quarter(s):** The number of quarters from the date of report generation. A quarter is Jan to March, April to June, July to September and October to December.

-
- **Year(s):** The number of years from the date of report generation.

After specifying filters, if you choose to click the **Run** button, you will receive a report having records that satisfy all of the set conditions.

"In List" and "Not in list" operators

- Select **In List** operator when you want to include rows in the report having selected multiple values.
- Select **Not in List** operator when you want to exclude rows in the report having selected multiple values.

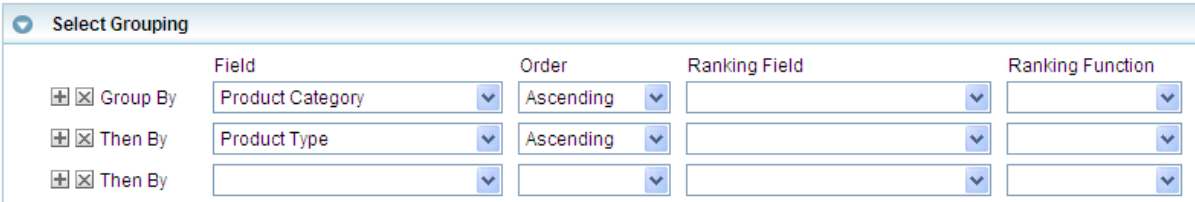
Selecting Grouping

Logical data grouping increases relevance and usability of report data. Group can be arranged in ascending order or descending order. For example, if you group data by Region, all the records of a region will come one below other, followed by another region.

When you arrange region (which has values East, West, North, South) by ascending order, report data will be arranged in this order:

- All records where region is East
- All records where region is North
- All records where region is South
- All records where region is West

Application supports multi-level grouping, for example, you can group the report data by country; within country by states and within states by cities.



	Field	Order	Ranking Field	Ranking Function
+ [-] Group By	Product Category	Ascending		
+ [-] Then By	Product Type	Ascending		
+ [-] Then By				

Figure 13: Selecting Grouping

Application needs sorted data to apply grouping. If the data fetched from database is not sorted, application will sort the data (on all the fields on which grouping is applied) and then generate grouped report.

The number of groups you have selected is displayed on right side of the header.

To specify grouping

If not already open, click **Grouping** tab header to open the tab.

In **Group By**, select the field to be grouped. This will be the outermost grouping in the report. In **Then By**, select the field to group it after first level of grouping.

For example, to group by SaleCountry and within it, to group by SaleState, select SaleCountry in Group By and SaleState in Then By.

For each row, select a field in Field dropdown box and order of arrangement (Ascending or Descending) in Order dropdown.

If you select date type field in Field dropdown, you can also group dates by:

- Day: Day of the month
- Week: Week number of the month
- Month: Month number
- Quarter: Quarter number
- Year: Number indicating the year
- Hour: Number of the Hour indicating the hour of the day
- Minute: Number of the minute indicating the minute of an hour

Select Grouping

	Field	Order	Group By	Ranking Field	Ranking Function
<input checked="" type="checkbox"/> Group By	Sale Date	Ascending	YEAR		
<input checked="" type="checkbox"/> Then By			YEAR		
<input checked="" type="checkbox"/> Then By			QUARTER		
			MONTH		
			WEEK		
			DAY		
			HOUR		
			MINUTE		

Group By: Date: Ascending

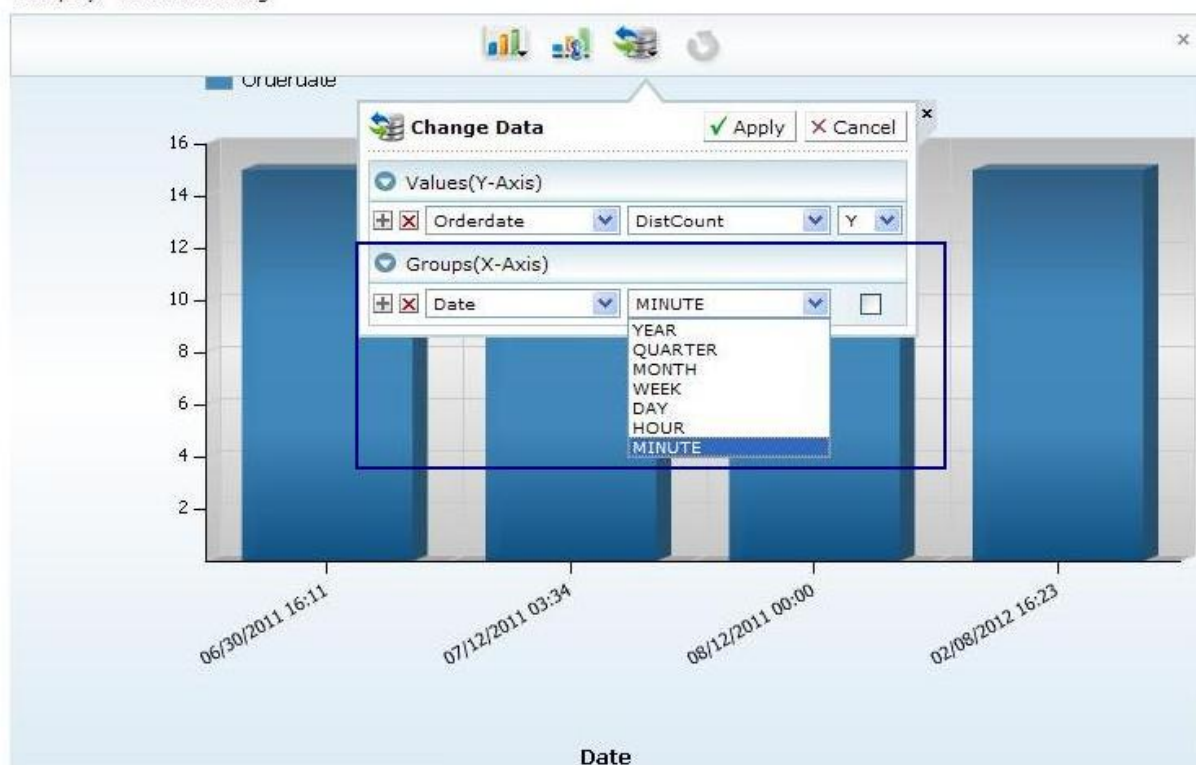


Figure 14: Change Group level through Powerviewer

Set **Ranking Field** and **Ranking Function** when for a grouped report, if you want to set order of appearance of groups based on total of a group. For example, groups are required to be in descending order of "Total Sales" for the

group. If "Total Sales" of "East Region" is 1000 units and "Total Sales" of "West Region" is 1900 units, then, "West Region" group detail will appear before "East Region" group details.

Ranking Field is the one based on which ranking will be decided. In above example, "Sales" would be the ranking field.

Ranking Function is the function applied to calculate value in the field set in Ranking Field.

Adding and removing Group rows

The screenshot shows a report design tool interface with three rows for grouping. Each row has a '+' icon to add a row, an 'X' icon to remove a row, and a 'Group By' label. The first row is labeled 'Group By' and has 'Prod Type' in the 'Field' column and 'Ascending' in the 'Order' column. The second row is labeled 'Then By' and has 'Prod Type' in the 'Field' column and 'Descending' in the 'Order' column. The third row is labeled 'Then By' and has empty fields for 'Field' and 'Order'. Annotations with arrows point to the '+' icons: 'A click here...' points to the '+' icon of the first row, '... inserted this row.' points to the '+' icon of the second row, and 'A click here will remove this row.' points to the '+' icon of the third row.

	Field	Order
<input type="checkbox"/> <input checked="" type="checkbox"/> Group By	Prod Type	Ascending
<input type="checkbox"/> <input checked="" type="checkbox"/> Then By	Prod Type	Descending
<input type="checkbox"/> <input checked="" type="checkbox"/> Then By		

If you want to set sub-groups, specify details in the row 2 and row 3.

Select Totals

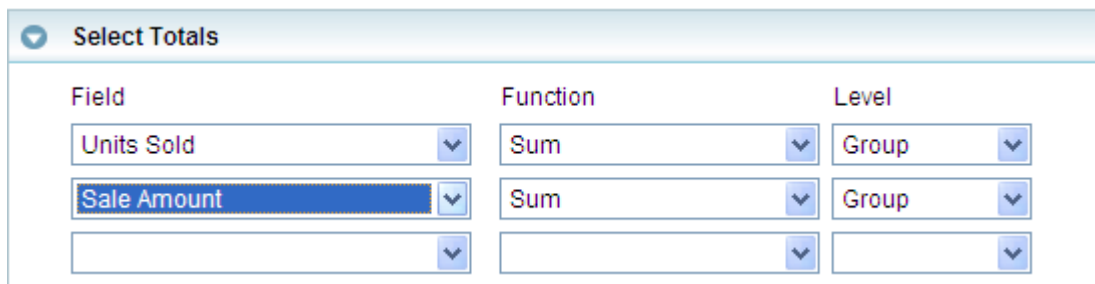
You can get totals (also known as summaries) on an adhoc report. It can be set to be displayed at three levels:

- At the end of report
- At the end of the page
- At the end of the group (if the report is grouped)

Totals can be applied on Char type field, Date type or number type field. The function available for totals would differ as per the chosen data type. For example, if you want summary of character field like "City", functions available are: Count and DistCount. For a date type field like "Sales Date", functions available are: Count, DistCount, Min and Max. For numeric data type like Sales amount or discount the available functions are Sum, Avg, Count, Min and many more.

If desired, you can have multiple summaries (at multiple levels) on report. The number of totals you have set is displayed on right side of the header.

To specify summary details,



Field	Function	Level
Units Sold	Sum	Group
Sale Amount	Sum	Group

Figure 15: Selecting Totals (summary)

1. From **Field**, select the field that will be totalled.
2. On the same row, from **Function**, select the summary function select the summary function to be applied on the field.
3. On the same row, from **Level**, select the level (at the end of report, at the end of every report page, at the end of group) at which the summary is desired.

After doing this if you choose to click **Run** button, your report will have summary information specified.

To get multiple totals on the report, repeat the above steps for each of the field.

To get summary of a field at multiple levels, add one row for the chosen field for every level where summary is desired. For example, to get count of city at report level and page level, specify two rows of totals:

- Row 1>> Field: City, Function: Count, Level: Report
- Row 2>> Field: City, Function: Count, Level: Page

Note: If total is applied on field that is not in display fields, it will be automatically added in the **Display Fields** list.

Sort Order

You can sort the report to get the report data in a pre-determined (ascending or descending) order.

Note: If you have setup grouping for a report, you need not set sorting for it. This is because, data is already sorted to make groups.

Application supports multiple level of sorting. For example, you can Sort By "Country"; then within "Country", sort by "State" and within "State" sort by "City".

If not already expanded, click **Sorting** tab header to expand it. The number of sort levels you have selected is displayed on right side of the header.

The screenshot shows a 'Sort Order' dialog box with a header bar containing a dropdown arrow and the text 'Sort Order'. Below the header, there are three rows of sorting criteria. The first row is labeled 'Sort By' and contains a dropdown menu with 'Product' selected and a 'Criteria' dropdown menu with 'Ascending' selected. The second row is labeled 'Then By' and contains a dropdown menu with 'Product Type' selected and a 'Criteria' dropdown menu with 'Ascending' selected. The third row is also labeled 'Then By' and contains two empty dropdown menus. The dialog box has a light blue header and a white body.

Figure 16: Specifying Sort Order

In **Sort By** row, select the **Field** on which sorting is to be applied. After selecting the **Field**, select the sort order from **Criteria** dropdown menu. You can set sort on more than one field.

To apply sorting on one field specify field in **Sort By** row. To set sorting on another field select the field from **Then By** field.

You can choose to alter given sorting settings at the run time from PowerViewer.

Highlighting

Highlight is a visual indication on an adhoc report. It catches user's attention to specific records while viewing the report output.

For example, if you set a highlight for "sales above 100", application will check every record and highlight row if sales for that record is over 100.

When report extends to multiple pages and you browse through pages, you may not notice a highlight. Set alert for a highlight to get all the highlight instances as alert on Alert pane. From Alert pane, you can view that record and any of the other highlighted records at a single click.

You can set multiple highlights on a report. For example,

- Get yellow highlight for a specific = "Marc", and
- Get green highlight as well as an alert for Sales above 2000.

Every highlight can be set at Detail level, Page level or Report level. If the report is grouped, highlight can be set at group level too. If alert is set at level other than Detail level, application will calculate summary of the field. So, you need to set a summary function to be applied on that field. For example, for a page level highlight, set Bold highlight if "Count" of Salesman ID is more than 10.

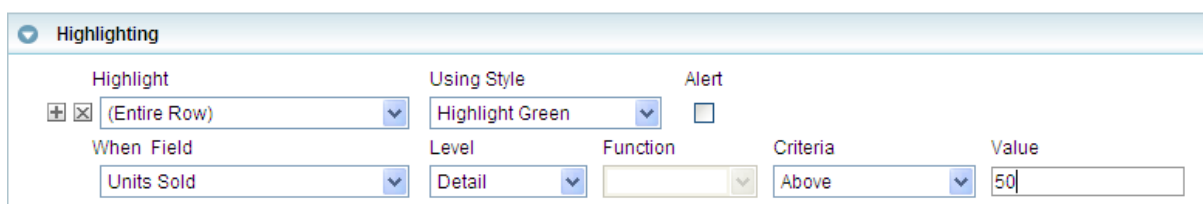


Figure 17: Setting highlighting

In **Highlight**, select *Entire Row*. In **Using Style**, select a style. Available highlights are: Bold, Green, Red and Yellow. If you desire to set multiple highlights, you may select different style for each highlight. Select Bold if you wish to print the report on printer having black ink.

If you want to get alerts, check **Alert** checkbox. When you run a report for which Alerts are set, you receive a visual alert (a blinking icon) on report viewer's toolbar. Click the icon to open the Alert pane. It will have links, which you can click to directly navigate to that record.

Note: Alerts are available when you generate an adhoc report in HTML format or view a published report in HTML format.



A highlight is associated with a field. (For example, In **Field**, select the field that will be evaluated. In **Level**, select the level at which the selected field's value should be evaluated. Select *Detail* to evaluate for each row (record), select *Report* to evaluate at the end of report, select *Page* to evaluate at the end

of the page. If the report is grouped, all group levels will be listed in Level dropdown.

In **Level**, you select a value other than Default, select Function to be applied on the field. For example, if Field is "Sales", Level is "Page", and you want a highlight when sales for that pages goes over 40, then in Function, set Sum. At run time, if sum of Sales on that page is more than 40, the value of sum will be highlighted.

Select **Criteria** ("is more than" in above example) and specify **Value** ("40" in above example) too, to complete the highlight setting.

An adhoc report may have multiple alerts / highlighting. They provide a visual indication on report viewer when a report is run and set condition is satisfied.

Click the  button available on the left of the criteria entry to delete an entry. Click  button to add another entry.

Creating Matrix

Use matrix to summarize your report data in the form of cross-section of fields in rows and columns. For example, product-groups and products in columns; Zone and Area in rows. A cross section of group, product and zone area will display sales of that product in that area.

		Group1		Group2		Total
		Prod1	Prod2	Prod1	Prod2	
Zone1	Area1	Sales	Sales	Sales	Sales	Total
	Area2	Sales	Sales	Sales	Sales	Total
Zone2	Area1	Sales	Sales	Sales	Sales	Total
	Area2	Sales	Sales	Sales	Sales	Total
Total		Total	Total	Total	Total	Total

Under **Select Display Fields** tab, select the data source.

To get only matrix on the report, don't select any display fields on **Select Display Fields** tab. If you select display fields, matrix will be placed below the tabular data.

If not already open, click **Matrix** tab header to open the Matrix tab.


The screenshot shows the 'Create Matrix' dialog box. It has a title bar 'Create Matrix' with a dropdown arrow. Below the title bar is a 'Clear Matrix' link. The dialog is divided into four main sections: 'Available Fields', 'Column Fields', 'Row Fields', and 'Summary Fields'. 'Available Fields' is a list box containing: Product ID, Product Category, Product Type, Product, Manufactured By, Manufacturer, Product Type, and Units Sold. To the right of this list are '>' and '<' buttons. 'Column Fields' is a table with columns 'Field', 'Group By', and 'Totals'. It contains one row: 'Product Type' with a checked 'Totals' box. 'Row Fields' is a table with columns 'Field', 'Group By', and 'Totals'. It contains one row: 'Product Category' with a checked 'Totals' box. 'Summary Fields' is a table with columns 'Field' and 'Function'. It contains one row: 'Units Sold' with 'Sum' selected in the 'Function' dropdown. There are also up/down arrows for each of these three tables. At the bottom of the dialog are '<' and '>' buttons.



Figure 18: Creating a matrix

To place a field as matrix row, drag it from **Available Fields** list and drop it in **Row Fields** (or, select a field and click button). To place a field as matrix column, drag it from Available Fields list and drop it in **Column Fields** (or, select a field and click button).

You can group a Date type or Numeric type field placed in Row Fields, or Column Fields box.

Last column of the matrix contains total of all the summary cells in a row. Last row of matrix contains total of all the summary cells in that column.

To place a field on summary (intersection of row and column), drag a field from **Available Fields** list and drop it in **Summary Fields** (or click  button). These fields will be calculated for summary/totals. Functions listed in Functions dropdown box will depend on data type of the Summary Field.

You can drop multiple fields in **Row Fields**, **Column Fields** and **Summary Fields** box. Fields appear higher in sequence in **Row Fields** and **Column Fields** will appear on outer side on matrix. Fields are placed left to right in **Summary Fields**. To move a field up or down, click  or  button.

First field dropped in **Row Fields** and **Column Fields** will have **Totals** checkbox checked. To get totals for other fields, select **Totals** checkbox of the field.

Grouping values of numeric fields

You can make range of values by specifying grouping. For example, to have groups of 0-9, 10-19,... specify 10 in Groups box of respective row in Row Fields or Column Fields box.

Grouping values of Date type fields

You can group a date by **Day**, **Week** (Sunday to Saturday), **Month**, **Quarter** (Jan-Mar, Apr - Jun, Jul - Sep, Oct - Dec), **Year**. Select an option from **Groups** box of respective row in **Row Fields** or **Column Fields** box.

After making a matrix if you think that is not something you wanted to make, click **Clear Matrix** link to clear matrix to start all over again.

You may choose to have a matrix on your report since it presents a summary of data. Make sure that the right query object is selected (under **Select Display Fields**).

Creating Chart

Chart is used for graphical representation of data. To address your charting needs adhoc report supports most of the popular chart types like bar, line, pie and radar.

Check **Link with Report Fields** checkbox to auto-plot the chart based on fields selected in **Select Display Fields**.

First character type or date type field will be plotted on x-axis and first numeric field will be plotted y-axis/y1-axis. If the report has group, then groups set in report will become X-Fields of Chart and all group level totals (summary) in report will become series of chart.

Changes made in tabular report, grouping summary field / summary function will be reflected on chart as well. This will keep chart in synchronization with the table.

When chart is linked then you cannot add any field in chart's X-Field or Series. Before linking, if any fields are part of chart then they need to be removed.

An adhoc report may have tabular data as well as chart on the report. To summarize entire report data on a single chart, select *Report* in **Level**. To summarize page wise data on chart (each report will have tabular data as well as chart representing corresponding page's data), select *Page* in **Level**.

Figure 19: Creating Chart

In **Align**, select *Top* to get chart above the tabular data. For example, if **Level** is *Page*, and **Align** is *Top*, application will process page-full of data, plot the chart on the page, followed by displaying tabular data on the page. This will be repeated on all the report pages.

In **Align**, select *Bottom* to get chart below the tabular data. For example, if **Level** is *Page*, and **Align** is *Bottom*, application will process page-full of data, display the tabular data, followed by plotting the chart on that page.

Chart can be placed at the top (of report or page set in **Level**), or bottom (report or page, what ever is set). Select this in **Align**.

To select a chart type, click the chart type from the types displayed in **Select Chart Type** box. Selected type will be displayed in **Selected Chart Type** box.

To view value of a data point plotted on chart, check **Point Labels** checkbox available on top right of **Value Fields** box.

Fields fetched by the QO (data source) are listed in **Available Fields** list. To place a field on Value axis (Y-Axis/Y1-Axis) or Group axis (X-Axis), drag and drop the field in respective box. Or,

- Click the field and click ➤ button near **Value Fields** box.
- Click the field and click ➤ button near **Group Fields** box.

Click the **Clear Chart** link to clear the chart settings.

Fields in Value Axis

Chart type selected in **Select Chart Type** box will be applicable to all series. To plot a series in different chart type, click **Chart type** button of that field.

The placements of value fields on chart are in the sequence of their placement on Value Fields box: The field on the upper side will appear towards left. To change the sequence, select the field in Value Fields box and click ▲ to move it up and click ▼ to move it down.

By default **Sum** function is applied on value fields. Select a different function in **Function** dropdown if desired.

A field can thus be placed on Y-axis or Y1-axis.

Align: ☒ Top ☐ Bottom Level: Report

Top(N): Field: N = 5 Sort Order:

Value Fields (Y-Axis) ☒ Point Labels

Field	Function	Axis	Chart Type
Target Sales	Sum	Y	
Unit Sold	Sum	Y1	

Group Fields (X-Axis)

Field	Group By	Display Field	Pivot
Product Category			<input type="checkbox"/>

Select Chart Type

Selected Chart Type

Select Chart Type

Bar Column Pie Line Scatter Radar Curve Curve Area

Figure 20: Axis Y and Y1

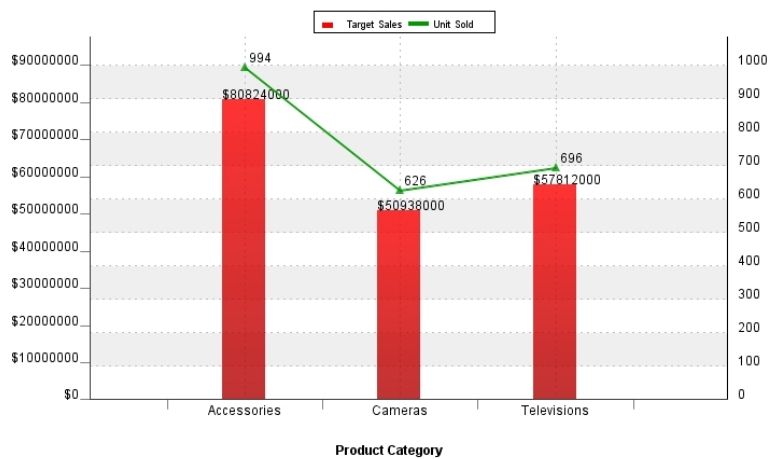
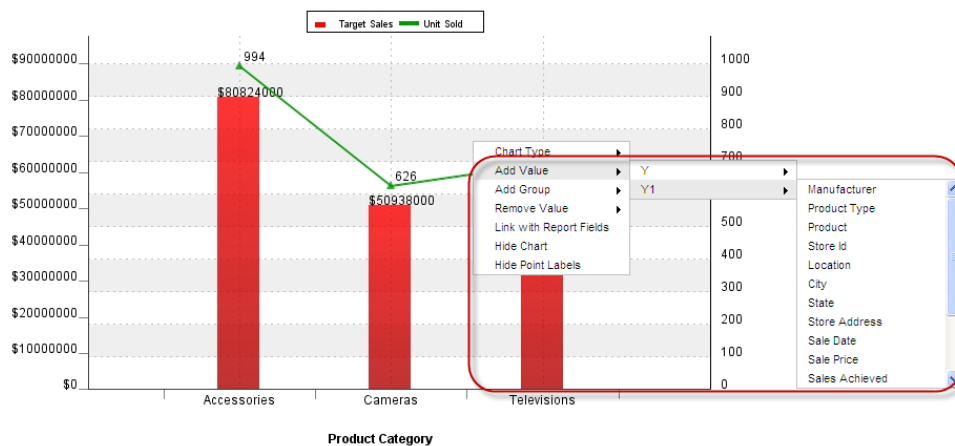


Figure 21: A chart with Y and Y1 axis

Note: When a user is trying to place Y-axis and Y1-axis then the chart type needs to be line chart.

You can now remove/add the fields from the corresponding axis using power viewer.



You can now add/delete/change the value placed on Value axis using Am chart.



Figure 22: Am Chart and Value axis

You get the support of Merge axis facility to the Adhoc reports. Now a Adhoc report designer has the facility to merge multiple X-axis fields on the Adhoc wizard. This helps user to see the grouped data in a more compact manner.



Figure 23: Using Pivot

Effect of "Function"

Example: Value Fields (Y-Axis/Y1-Axis) has "Sales". Group Fields (X-Axis) has "Product". If record-set has only one occurrence of a product, no function can be applied, because chart will plot the value received in record-set. In such cases make sure functions like Count are not selected (except selected purposefully), otherwise chart will depict 1 as sales, instead of actual value.

Example: Value Fields ((Y-Axis/Y1-Axis) has "Sales". Group Fields (X-Axis) has "Sales Person". The record-set may have multiple values of "Sales Person". In such cases, application will plot only one data point for one value of "Sales Person". Here for "Sales", you may select "Sum" to get total sales, or "Min" to

plot minimum of sales made or "Max" to plot maximum of sales made by respective sales person.

Example: Value Fields ((Y-Axis/Y1-Axis) has "Sales". Group Fields (X-Axis) has "Product Type". The record-set will almost certainly will have multiple records of a product type (each record of a unique product name). Application will plot one data point for one Product Type. For "Sales", you may select "Sum" to get total sales of products belonging to that product type.

Fields in Group axis

You can specify **Display Field** for a field. This is useful when you want to use a field in chart, but want to display another field on axis. For example, select "Product Number" as the Group field and select "Product Name" as display field.

Grouping


Instead of plotting one data point of each record you can group numeric and date type fields.

Grouping values of numeric fields

You can make ranges by grouping records of certain value-range. Specify value range in **Group By** box of respective field. For example, specify 1000 to make ranges (group) of 0-999, 1000 - 1999, Application will plot one data point for all the values falling in one range.

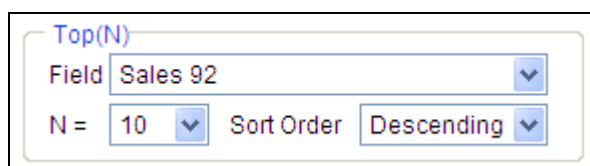
Grouping values of Date type fields

You can group a date by **Day**, **Week** (Sunday to Saturday), **Month**, **Quarter** (Jan-Mar, Apr - Jun, Jul - Sep, Oct - Dec), **Year**, **Hour and Minute**. Select an option from Group By box of respective field. For example, if you group by Month, chart will have up to 12 data points, one for each month. Records of same month will be added in one data point. If there are 4 records where month of date is May, then data point of May will be 4.

To remove a field from **Value Fields** box or **Group Fields** box, drag and drop it out of the box where it is, or select the field and click  button.

Top (N)

A chart may have large number of data points making it complex to analyze. Use **Top (N)** feature to set maximum number of data points to be plotted on chart.



Top(N)

Field

N = Sort Order

Figure 24: Top(N) area on Adhoc Wizard

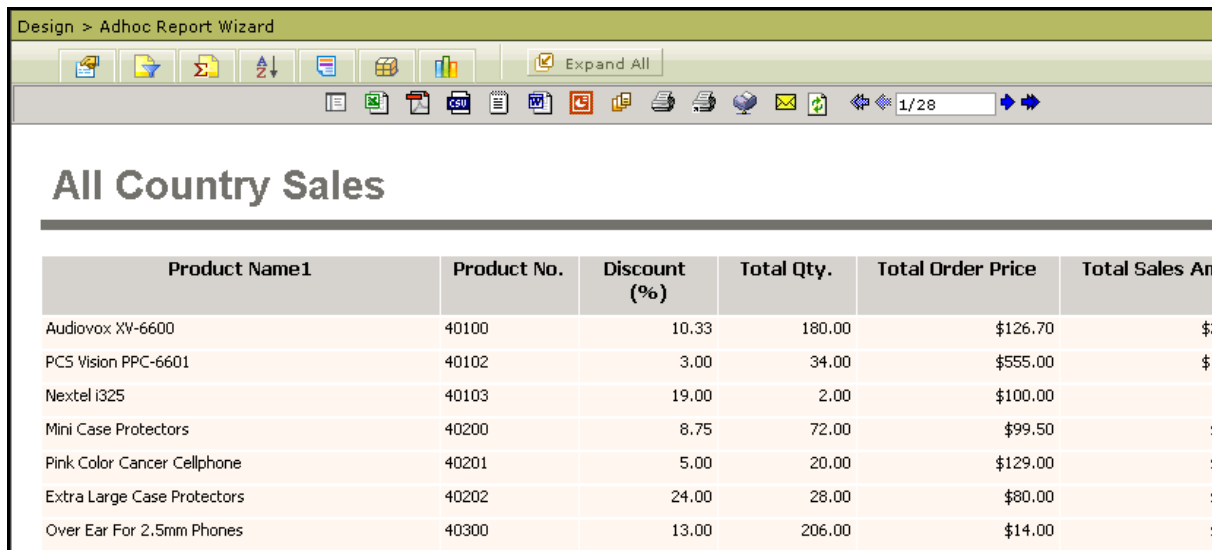
For example, Value Axis has SALES and Group Axis has Product Name. You wish to see only 10 lowest SALES values on chart.

In N= dropdown, select the number of data points to be plotted (10 in above example). Field dropdown box displays first field placed on both the axis. Select the field based on whose value (SALES in above example) application will plot data points specified in **N**. In **Sort Order**, select *Ascending* to get lowest values, select *Descending* to get highest values (Ascending in above example).

If **Link with Report Fields** checkbox is checked, then by default first group field will become TopN field and group order will be set as sort order for chart. However if ranking is applied on first group, then ranking field if present in totals of report will become TopN field and group order should be set as sort order for chart.

Adhoc Report Toolbar

When you run an adhoc report you will get Adhoc report toolbar. Using the functionalities available on this toolbar you can change adhoc report settings on viewer itself.



The screenshot shows the 'Design > Adhoc Report Wizard' window. It features a toolbar with icons for Data Source, Filter, Total, Sorting, Highlight, Matrix, and Chart, along with an 'Expand All' button. Below the toolbar is a table titled 'All Country Sales'.

Product Name1	Product No.	Discount (%)	Total Qty.	Total Order Price	Total Sales An
Audiovox XV-6600	40100	10.33	180.00	\$126.70	\$
PCS Vision PPC-6601	40102	3.00	34.00	\$555.00	\$
Nextel i325	40103	19.00	2.00	\$100.00	
Mini Case Protectors	40200	8.75	72.00	\$99.50	
Pink Color Cancer Cellphone	40201	5.00	20.00	\$129.00	
Extra Large Case Protectors	40202	24.00	28.00	\$80.00	
Over Ear For 2.5mm Phones	40300	13.00	206.00	\$14.00	

Figure 25: Adhoc Wizard on HTML Viewer



Important: If the viewer is set to open in a new window, the new window will not have Adhoc Report Toolbar.

Adhoc Report toolbar has buttons that will open respective tab of Adhoc Wizard:



Figure 26: Buttons on Adhoc Report Toolbar

From left to right the buttons are: Data Source, Filter, Total, Sorting, Highlight, Matrix and Chart.

When you click a button, its tab opens up. You can change respective settings on the tab and run the report again. To close an open tab, click that button again.

Clicking **Expand All** button will open all the tabs of Adhoc Wizard. When you click **Expand All** button it changes to **Collapse All** button. Clicking **Collapse All** button will close all the tabs.

Using Adhoc Report Toolbar

When you click a Adhoc Report toolbar button, it opens respective tab.

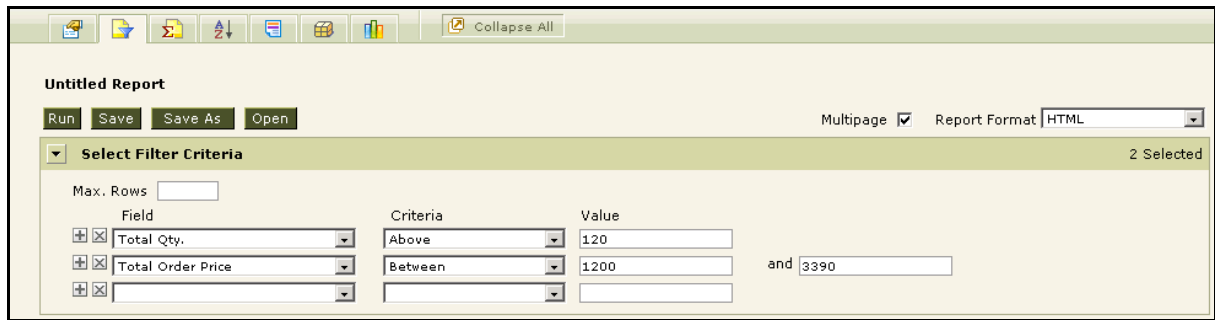


Figure 27: Adhoc Report toolbar with Filter tab in open position

After changing the values in an open tab, you can:

- Click any of the buttons ns to take respective action
- Click any of the other tool-buttons to carryout respective modification task

All the changes that have been made will come into effect when the report is run.

When you click **Run** button, the report is run and tab is closed. This does not occupy screen space and more space can be allotted for viewing of the report.

