

Working with Cross-tabs

Intellicus Enterprise Reporting and BI Platform



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

Contents

Introduction.....	1
Summary and details dilemma	1
More on Cross-tab.....	2
What is a summary field?	2
General Scenario	2
Setting up a Cross-tab	3
Getting the right data	5
Bound cross-tab or unbound cross-tab	5
When to use Bound cross-tab	5
When to use Unbound cross-tab.....	5
Getting data for an unbound cross-tab.....	5
What an SQL should provide.....	7
Your first Cross-tab	9
Placing the cross-tab control on report	10
Building the cross-tab.....	11
Placing field for column header	12
Placing field for row header.....	13
Numeric field as row header or column header	14
Date field as row header or column header	15
Placing the field as summary field	16
Titles.....	17
Basics of Look and Feel	18
Examples	19
Date on Row header	19
Working with Formatting	21
Alignment and formats	22
General Options	22
For fields of number type.....	27
For fields of date type	28
Title for cross-tab.....	28
Formatting of background and cell Borders.....	29
Making use of ready-to-use schemes	29
Background color	29
Border.....	30
Examples	31

Use of light formatting	31
Conditional Formatting of cells	33
What is it.....	33
When to use.....	33
Preparation	33
Applying conditional formatting on cross-tab.....	34
Data grouping on cross-tab	35
When to group	35
How to group	36
Example	37
Cross-tab and drill-down	39
What is a drill-down	39
How does it work	39
Prerequisites	40
Setting up hyperlink	40
Example	41
Advanced cross-tabs	43
Use of character field as summary field.....	43
Use of multiple summary fields	44
Different summary functions on summary field and row summary.....	45
Multiple values in Summary field.....	46

Introduction

Data is useful only if it can be arranged and presented in a way that makes sense to the user. Data representation on a report becomes more important when you have a lot of data to process and represent for the process of decision-making.

Summary and details dilemma

To be able to make informed decisions, you need data in the right detail. Here are some of the generally used data arrangements:

- **Form based arrangement**, where information is placed in any arrangement, side by side or one below other. This is good to give you ground level information. Generally found on operational reports / documents like cash memo, tickets, vouchers, salary slip, this arrangement will give you one unit of information per page.
- **Tabular** (also known as list or grid) arrangement is preferred when you want to have more units of information per page, where information about one unit will be arranged side by side. For example, list of employees for a department.
- **Grouped** is grid type of representation where information is arranged by a logical entity. For example, list of employees by arranged by departments. The information will be arranged / organized by departments. For example, department name, followed by list of employees in that department, then name of other department and like.
- **Charts** are best-to-use if you want to go for comparative analysis.
- **Matrix** is quite useful arrangement when you want to have bird's eye view of large volume of data. You can have a matrix where on left side you can have Subscription Plan and on top you can have Region. The cell that is intersection of a Subscription plan and a region will have figure of total subscribers for that region and plan. So, you can have summary information in a very limited space.

More on Cross-tab

Cross-tab is a data-arrangement where headings are listed on the top and left. Summary data is placed in cells formed by intersection of respective row and column. For instance, an expenditure summary report (cross-tab arrangement) may look like this:

Selected Expenditure by Zone

	East Zone	West Zone	Central Zone	
Administration	1970	2300	2994	7264
Electricity	3900	4500	4700	13100
Employee welfare	1488	1628	1952	5068
	7358	8428	9646	25432

Cross-tabs can be very useful as input to create charts in spreadsheet software.

What is a summary field?

- In the above table, the figures are summary fields. Figures indicate respective type of expenditure in a zone office. For example, *Employee Welfare* expenditure of *Central Zone* office is *1952*. The figure in cell at the cross section of right-most column and last row displays total expenditure.

General Scenario

Generally, summary field is of number type. For example, sales amount, expenditure, salary, revenue, costing, etc. Example of cross-tab:

- Production estimation by facility: that may include facility, product code, estimated production figures.
- Weekly Rainfall forecast by region: that may include State / region, week number, rainfall figures.



Tip: You can place non-numeric field in summary and apply "count" function on it. For example, a cross-tab may display *number of employees* in a *grade* and in a *department*.

Setting up a Cross-tab

After placing a cross-tab control on a report, setting up a cross-tab is a three-step process:

1. Get the data for cross-tab.
2. Place right fields for column header, row header and summary.
3. Apply formatting.

Getting the right data

Be it cross-tab or any other type of data arrangement on report, it is very important to see to it that you get the right data on cross-tab.

Bound cross-tab or unbound cross-tab

When you issue a command to place cross-tab component on a report, a dialog box opens up asking whether you want to have a bound cross-tab or an unbound cross-tab.

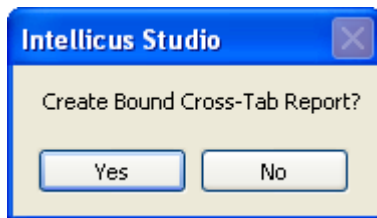


Figure 1: Cross-tab - bound or unbound

A cross-tab is known as bound cross-tab when it uses the same SQL that was used for the report.

When a cross-tab uses its own SQL to get the data, it is known as an unbound cross-tab.

When to use Bound cross-tab

Following are some of the cases when you may prefer to go for a bound cross-tab:

- A report has only one component – cross-tab.
- A report has cross-tab as well as other components and it uses the same data for all the components on the report.

When to use Unbound cross-tab

You may prefer to go for unbound cross-tab, when:

- Two different set of data is used for cross-tab and for the main report.
- Report has more than one cross-tab showing different set of data.

Getting data for an unbound cross-tab

When an unbound cross-tab is used, you have two alternatives to get data for your cross-tab:

Getting the right data

- Use pre-set query object
- Set a Connection Name, Specify SQL Query and verify the SQL.

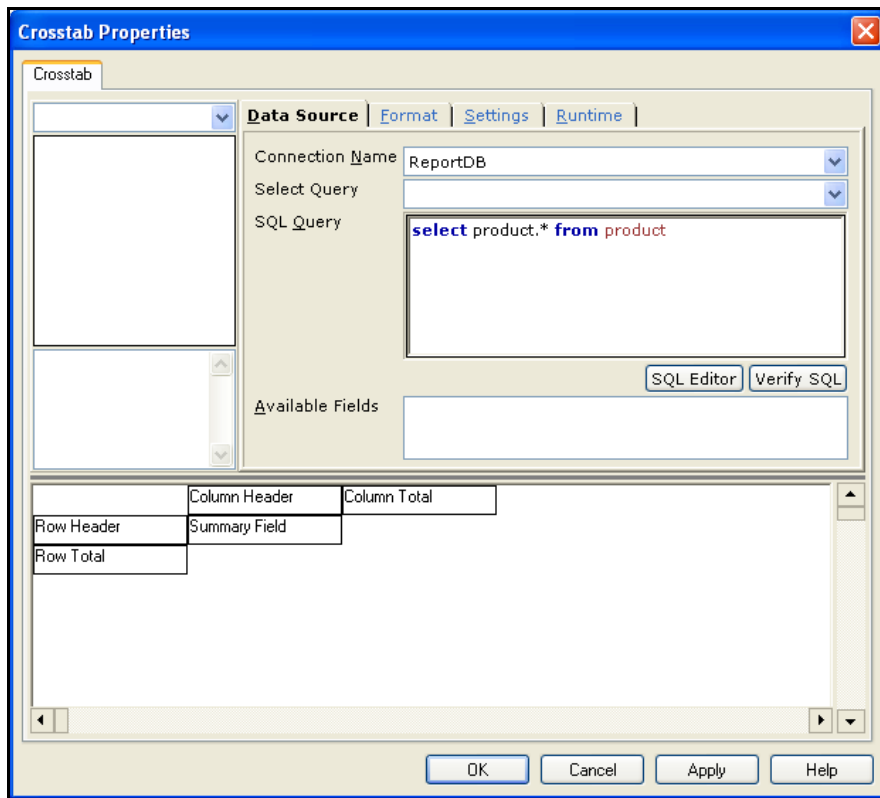


Figure 2: Get the right data for your cross-tab

A person using the ID having Intellicus' Administrator privileges creates query objects. Query objects are created using Intellicus Portal. A query object gets embedded in cross-tab.

If you do not prefer to use query objects, you can select a Connection Name and specify an SQL.

You need to verify the SQL in any case.

What an SQL should provide

SQL provides fields (at design time) and record-set (at runtime) to the cross-tab. The record-set that will come from Database Server will depend solely on the SQL provided.

A wrongly written SQL will not be able to fetch the right fields and so it would not be possible to get the right results from the cross-tab.



Important: In case of bound cross-tabs, cross-tab is created depending on the section where cross-tab component is placed. This is because the data made available for cross-tab depends on data source used for report. In case of unbound cross-tabs, this is not the case. In whichever section you place the cross-tab, entire record-set received, will be considered for creating the cross-tab. This is because the data made available for chart comes from its own data source.

Your first Cross-tab

To create our first cross-tab, let us have a detailed look at the cross-tab illustrated in the 1st chapter.

Selected Expenditure by Zone

	East Zone	West Zone	Central Zone	
Administration	1970	2300	2994	7264
Electricity	3900	4500	4700	13100
Employee welfare	1488	1628	1952	5068
	7358	8428	9646	25432

Generally, a cross-tab data arrangement has following components:

- **Row Headers (1):** This contains field values that will be placed on 1st column of every row.
- **Column Headers (2):** This contains field values that will be placed on 1st row of every column.
- **Summary fields (3):** All the cells covered by row headers and column headers are summary fields. Intellicus supports more than one field for summary. That means, for each intersection of a row and column you can have more than one cells of summary.
- **Column Summary (4) and row summary:** Generally, last row contains summary (sum or any other function specified) of values in the respective column. Similarly, last column would contain summary of values in respective row.



Tip: You can have multiple row-headers, column-headers as well as summaries. For example, row headers may have Region and Sales Executives; column headers may have product line and products.

Placing the cross-tab control on report

A report may have one or more section. The way Intellicus Report Server treats report components depends on the section where they are placed.


For example, a report component placed on detail section will be rendered every time a new record is processed. That would not be the case with a report component placed on page header.



Tip: A cross-tab processes all the records in a record-set before it is rendered. Safest location to place a cross-tab is **report header**. Do not place a cross-tab in detail section, since detail section is rendered for each record, which results in a wrongly rendered cross-tab.

However, if you have no choice, then an unbound cross-tab can be placed anywhere required.

Here are the steps to place a cross-tab control on report using tool bar button. On Desktop studio, when a report is open,

1. Expand the section where you want to place a cross-tab.
2. On toolbar, click  .
3. On the section where you want to place the cross-tab, click and mark top right corner of cross-tab, drag the mouse towards bottom right until you get right size of the cross-tab.
4. In **Create Bound Cross-tab report?** Click **Yes** to create bound cross-tab and **No** to create unbound cross-tab.

The cross-tab has been placed.

Building the cross-tab

You will get meaningful information on a cross-tab only if you have selected right fields for row header, column header and summary field. Assuming that you have already placed a cross-tab control on the report and arranged for a data source all the activities related to building a cross-tab is carried out on **Crosstab Properties** dialog box. They are:

1. Placing field for column header, row header and summary field.
2. Setting group preferences when a numeric type or date type value is selected for column header or row header.
3. Setting the right summary function for summary field.
4. Selecting suitable look and feel for the cross-tab.

To get cross-tab properties dialog box,

1. Place the mouse pointer anywhere on the cross-tab control and right-click the mouse. A context menu appears.
2. Click the option **Properties**. **Crosstab Properties** dialog box opens.

Placing field for column header

The figure below and boxes next to it shows how to select a field for column header.

The screenshot shows the 'Crosstab Properties' dialog box with the 'Data Source' tab selected. On the left, a list of fields includes 'PROD_LINE', which is highlighted with a blue circle and the number '2'. Below this list, the 'Available Fields' section contains 'COMMENTS', 'PICTURE', and 'PROD_COST', with 'PICTURE' selected and highlighted with a blue circle and the number '1'. A blue arrow points from the 'PICTURE' field to the 'Column Header' cell in the preview table below. To the right of the dialog, three callout boxes provide instructions: '1. Click Column Header.', '2. Click the field that you want to place in column header.', and 'Name of the checked field will appear here.' The preview table at the bottom shows a grid with 'Column Header' and 'Column Total' in the top row, and 'Summary Field' and 'Row Total' in the first column.

	Column Header	Column Total
Row Header	Summary Field	
Row Total		

Figure 3: Placing a field for the column header

Placing field for row header

The figure below and boxes next to it shows how to select a field for row header.

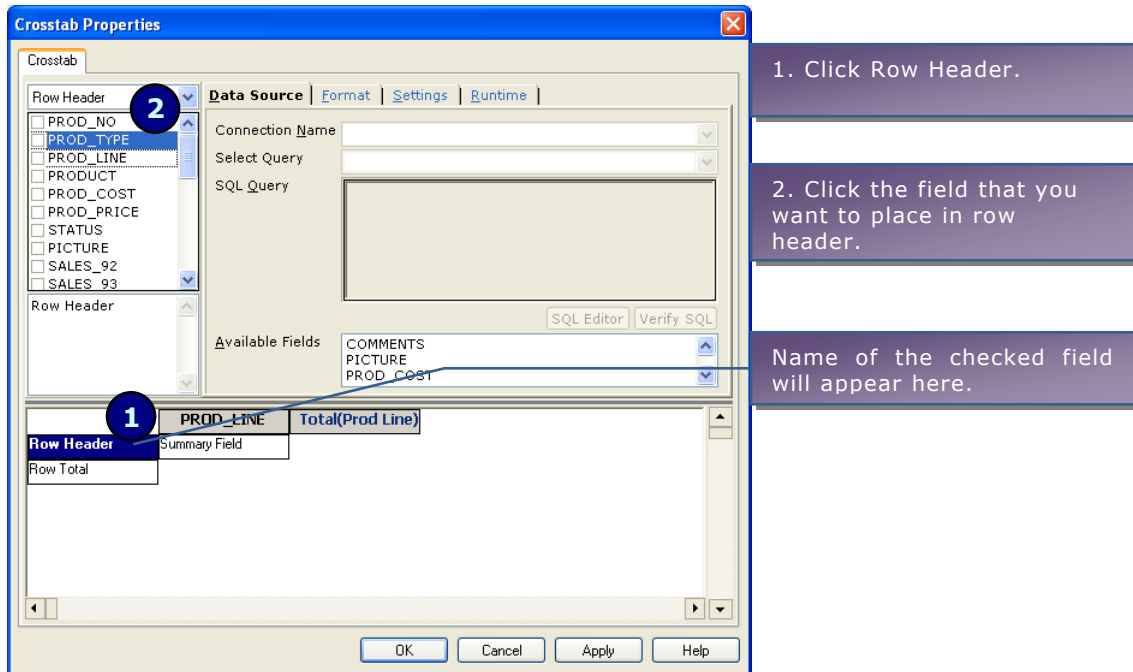


Figure 4: Placing a field for the row header

Numeric field as row header or column header

You need to take little care when setting up a numeric field as row header or column header.

If you place a numeric field as it is in a row header, you will get one row for each of the value of that field. For example, if you have a numeric value for Zones, then this may be fine.

If you are looking for departmental expenditure by expenditure range, then this method would not work. You have to set expenditure range, for example, 0 – 1000, 1001 – 2000, etc.

After selecting the right numeric field for column header or row header, do this:

1. Click **Format** tab.

2. Select respective header.

3. In **Numeric Group By**, specify the range. 1000 specified here will make groups 0 – 1000, 1001 – 2000, 2001-3000, etc.

Figure 5: Numeric field as row or column header



Important: When you set **Numeric Group By**, the cross-tab will display the starting number of the group. It will not indicate starting number and ending number of group. For example, for a group, 0 – 5, it will not show “ 0 – 5” in respective header. It will show “0”.

To get value of your preference in column header / row header which has numeric group, you need to use formula field (calculated field).

If there are no records representing a range, for example there is no data for group 6 – 9, that row / column will not be placed on cross-tab.

Date field as row header or column header

A date type field can be set as row header or column header.

If you place a date field as it is in a row header, you will get one row for each date. It is possible to group date records by:

- Day (Monday, Tuesday, etc)
- Month (Jan, Feb, March, etc)
- Quarter (Jan – March, April – June, July – Sep, Oct – Dec)
- Year (actual year number)

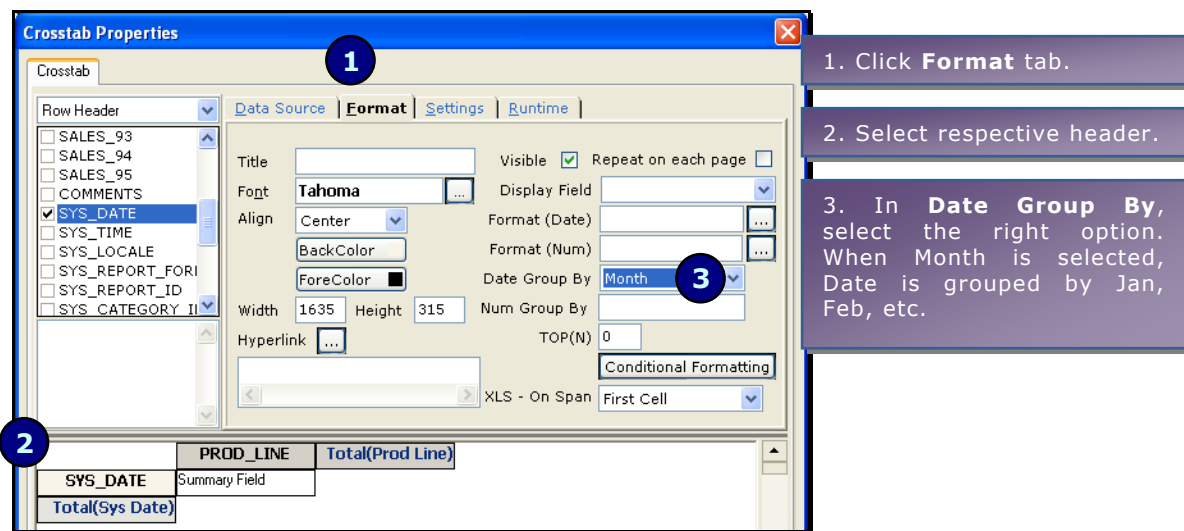


Figure 6: Date type field for row or column header

When date is grouped, the respective row header or column header will show the start date of the group. For example, quarter January 2006 – March 2006 will be represented by "1/1/2006".

To make the best use of this feature, we suggest using **Date Group By** along with the most appropriate **Date Format**. For example, if you have grouped by Month, use Date format as MMM.

Placing the field as summary field

1. While on Data Source Tab or Format Tab, click summary cell.

2. Select the field to be used as summary.

3. In **Summary Function**, select the right option.

	PROD_LINE	Total(Prod Line)
PROD_TYPE	Sales 92	Sum(Sales 92)
Total(Prod Type)	Sum(Sales 92)	Sum(Sales 92)

Figure 7: Placing field for summary

Selecting the right summary function

- For numeric fields, generally sum function is selected. When you want summary on fields having type other than numeric, you may choose count.

Titles

The title set on Settings tab, or on Format tab for a row / column will appear on top – left cell of the cross-tab:

- If title on Settings tab is specified, then it will appear on cross-tab. If this is not specified, in that case,
- If title is specified after selecting column header, then it will appear on cross-tab. If this is not specified, in that case,
- If title is specified after selecting row header, then it will appear on cross-tab.

Setting up cross-tab title (Format tab)

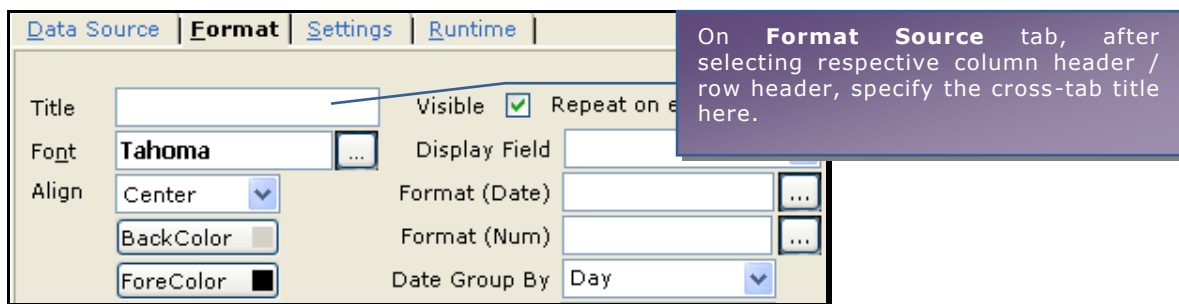


Figure 8: Title for row / column header

Basics of Look and Feel

Appearance of cross-tab makes a lot of difference. You can select specific colors for row header, column header as well as other components of a cross-tab.

You can also select one of the pre-designed color-theme too.

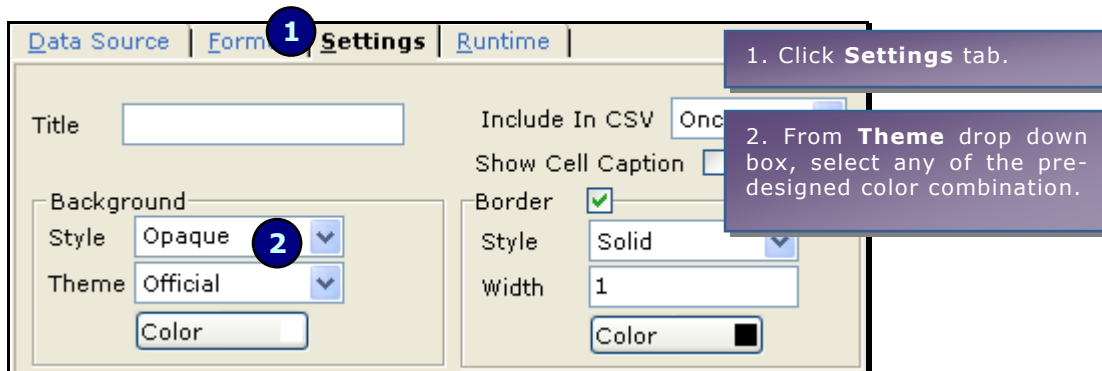


Figure 9: Setting look and feel for the cross-tab

Examples

Date on Row header

This imaginary example represents expenditure by branch, on lighting and heating for Months January, February and March.

Expenditure on Lighting and Heating

	Br1	Br2	Br3	Total
Jan	2000	1800	1890	5690
Feb	1900	1900	1900	5700
Mar	2000	1900	1850	5750
Total	5900	5600	5640	17140

All you need to have to get this report, is a record-set having fields:

- BranchCode
- Date of Bill
- BillAmount (or amount paid, or similar)

General steps in studio / arrangement of fields on cross-tab would be:

1. Set the appropriate connection, create an SQL and refresh fields.
2. Place Cross-tab component (preferably on Report Header section).
3. Place Date of Bill on Row header.
4. Set **Date Group By** as Month.
5. Set **Date Format** as MMM and Alignment as Left.
6. Place BranchCode on column header.
7. Place BillAmount (or amount paid, etc) in summary field.

Working with Formatting

Formatting of a report plays very important role in information presentation. In Intellicus, you can apply different kind of formatting effects on entire cross-tab or each component of the cross-tab. Formatting generally includes:

- Alignment
- Text Format
- Cell Dimension
- Color preferences

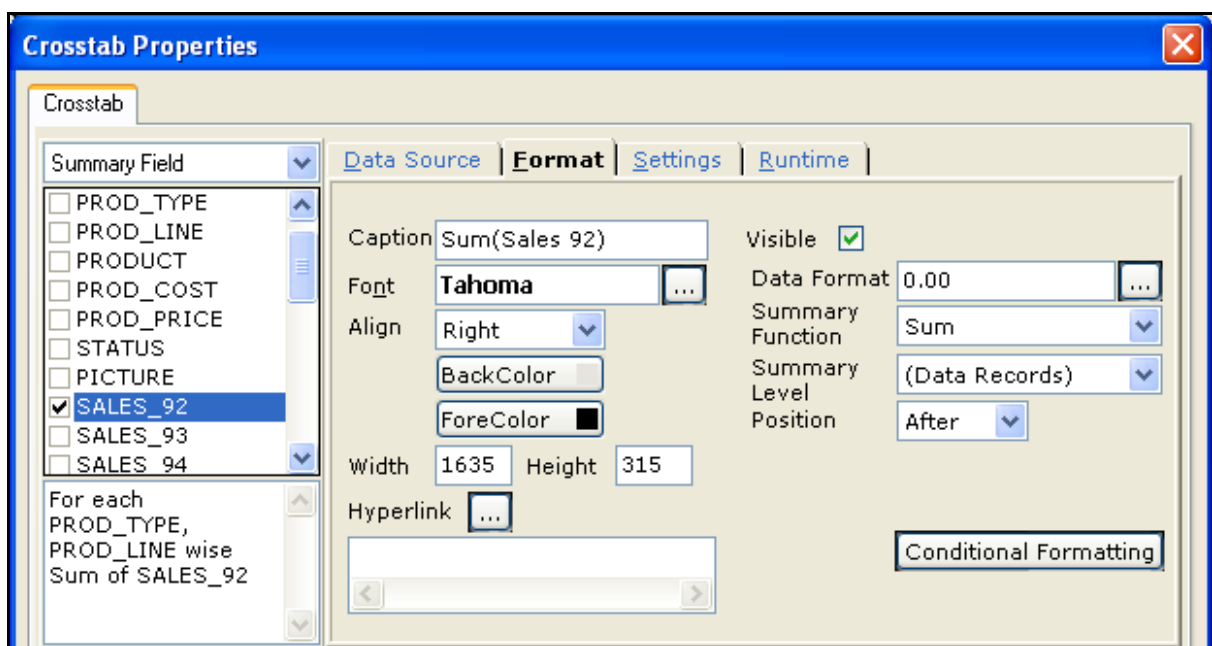


Figure 10: Format tab of cross-tab properties dialog box

These options are set on Format tab of **Crosstab Properties** dialog box. Some of the options are applicable to all type of fields. Some of the options are available to fields of date types and that of numeric type.

Alignment and formats

General Options

Alignment

This is a drop down box, having three options:

	40100	Column Header is number, but aligned as Center .
Alert Devices	0.00	Row header is character and is aligned as Left .
Bio-Friendly	0.00	
CellPhone	35310.00	Summary Field is number and is aligned as Right .

- **Left:** Values are left aligned in the cell. This alignment is generally used when character and date type fields are placed in the cell.
- **Right:** Values are right aligned in the cell. This alignment is generally used when number type fields are placed in the cell.
- **Center:** Values are placed in the center of the cell.

To apply an alignment,

1. Select a cross-tab component.

2. Summary Field is number and is aligned as **Right**.

SITE_NO	Total(SITE_NO)
ORDER_NO	Sum(ORDER_NO)
Sum(ORDER_NO)	Sum(ORDER_NO)

Figure 11: Setting Alignment

Back Color

BackColor sets the color to be used for background of selected cell.

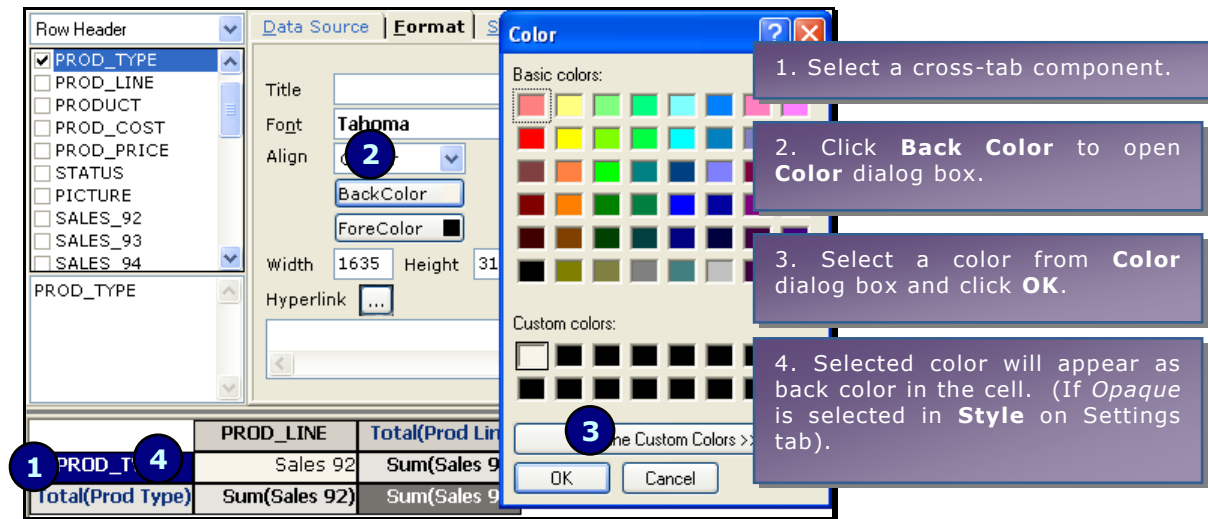


Figure 12: Setting the background color

Fore Color

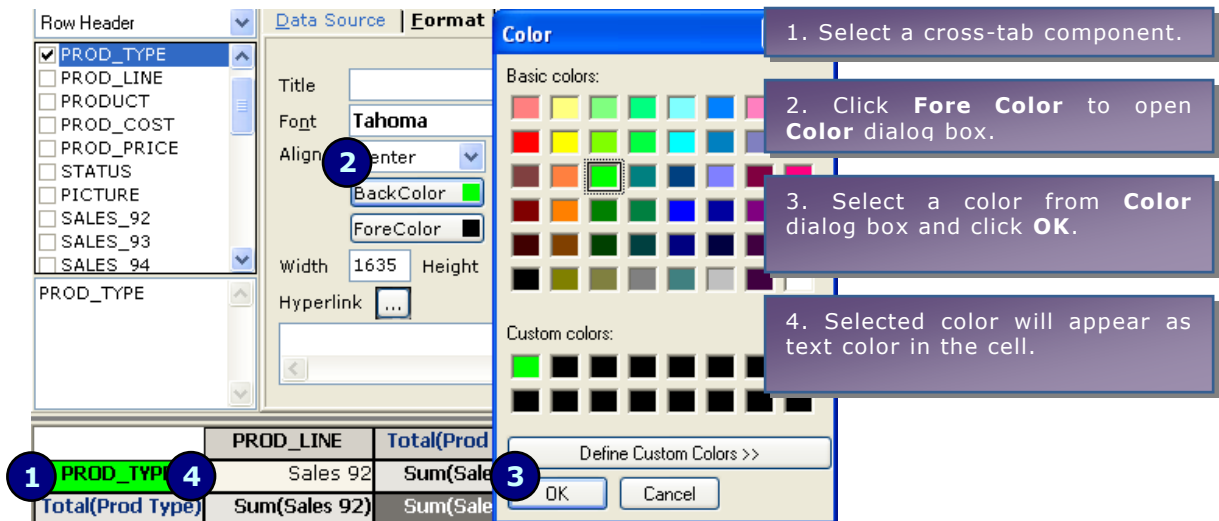


Figure 13: Setting font color (fore color)

Font

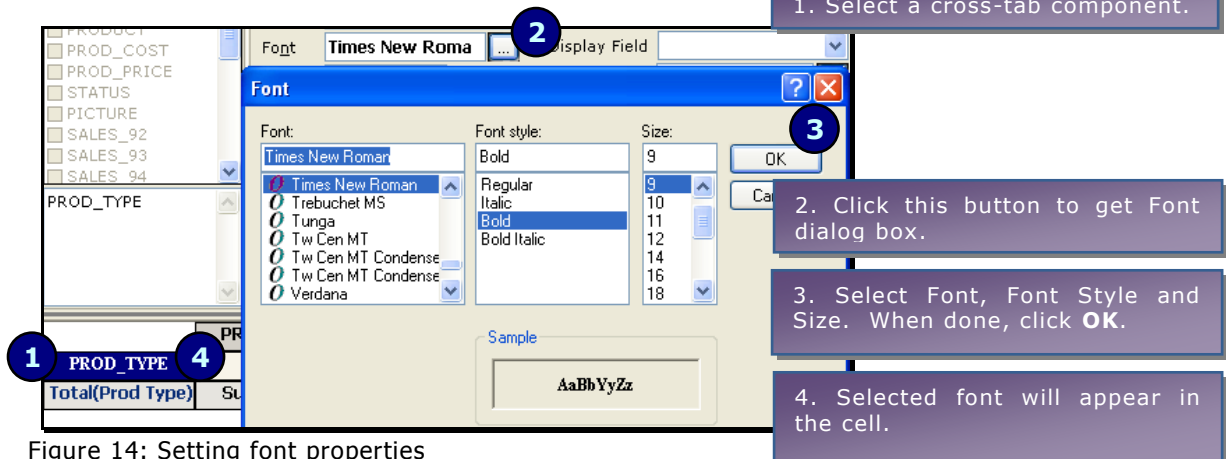


Figure 14: Setting font properties

Width and Height

Cross-tab are given default row height and column widths. However, it can be set to a specific value also.

1. Select a cross-tab component.

2. Click here and specify width in pixels.

3. Click here and specify height in pixels.

	PROD_LINE	Total(Prod Line)
PROD_TYPE	Sales 92	Sum(Sales 92)
Total(Prod Type)	Sum(Sales 92)	Sum(Sales 92)

Figure 15: Column width and row height

Actual width and height of a cell depends on width and height of respective header rows.



Tip: Set height of innermost row header. Set width of summary fields. Set height of row totals (summary) separately.

Display Field



Note: Presently, the Display Field feature is operational only for unbound cross-tabs.

This is a dropdown list. It lists all the fields that are available to be used in cross-tab. If you want to create a cross-tab based on a field (in row header or column header) and display another field (may be for better readability and understanding), you can use this option.

1. Select a cross-tab component (row header or column header).

2. From the dropdown box, select the field that should be displayed on the cross-tab component.

	PROD_LINE	Total(Prod Line)
PROD_NO	Sales 92	Sum(Sales 92)
Total(Prod No)	Sum(Sales 92)	Sum(Sales 92)

Figure 16: Setting display field

Working with Formatting

Based on what you want to display in the row header / column header, you may have to use any of the available database field or create a calculated field (formula field) and use it.

Visible check box

Check (select) this checkbox if you want this cell to appear on the cross-tab.

Sometimes it happens that you want to have one field as summary field, but another one on row / column summary. In that case, another field can be placed on summary field, with Visible checkbox as clear.

Human Resources count and monthly cost by department

	Dev.	QA	Doc.	Sales	
Managers	3	1	0	1	45000
Supervisors	10	3	1	0	560000
Entry-level	27	10	3	2	420000
	940000	310000	70000	110000	1430000

Here we placed employee code (count) and salary (sum). For Salary, we unchecked **Visible**.

And here, we unchecked employee code's **Visible**.



Tip: To achieve the above functionality, place two fields as summary fields, hide the one that you want to use for row summary. And on Row summary, hide the one that you used for field summary.

For fields of number type

Number Format

When a number type field is used as column header or row header you may like to see the field in the right format such as pre-set number of decimal places.

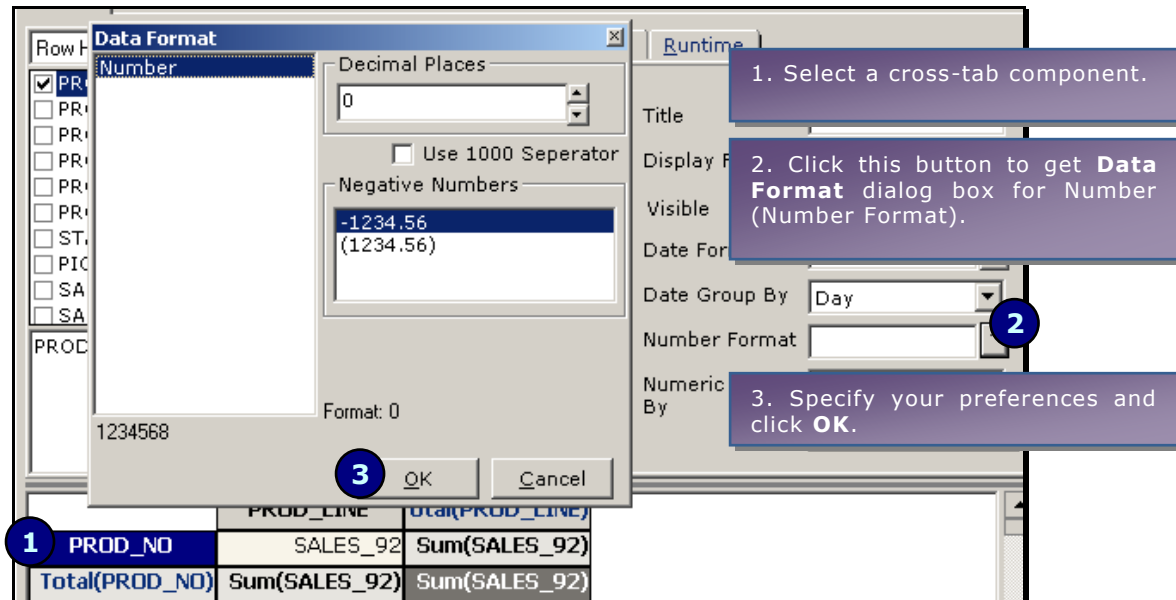


Figure 17: Setting number format

Options on Data Format dialog box (for Number type fields) are:

Decimal Places

Using the spin buttons set the number of digits you want on the right side of decimal places.

Use 1000 Separator

Check (select) this check box to have 1000 separator comma in the number.

Negative Numbers

Select the right option to show negative numbers.

For fields of date type

Date Format

When a date type field is used as column header or row header you may like to see the field in the right manner.

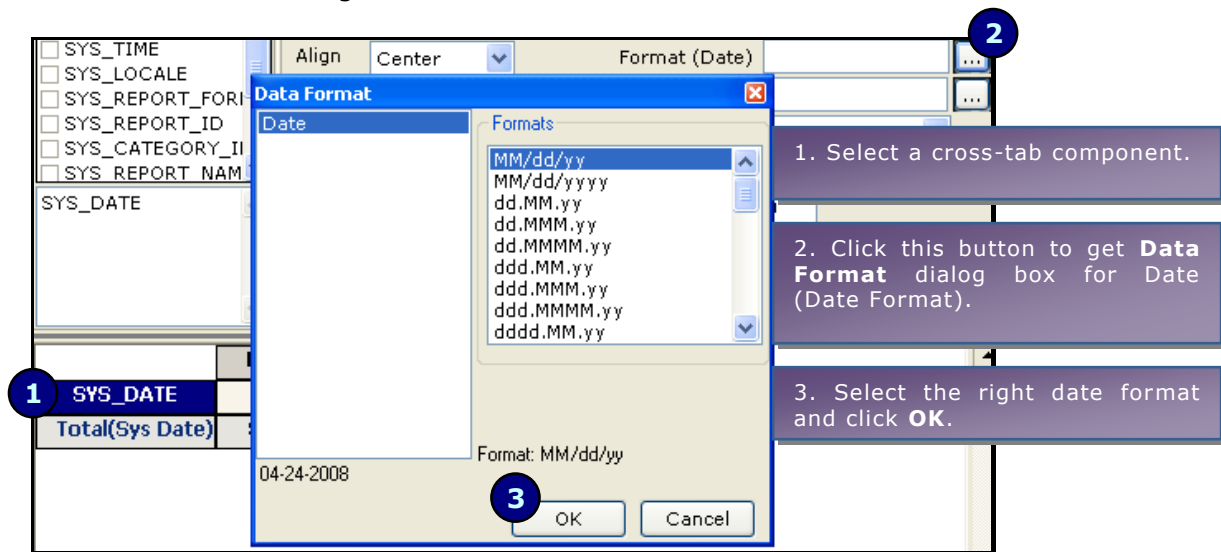


Figure 18: Setting date format

A number of date formats are available on **Data Format** dialog box, including formats that will display only month, day, year or their combination.

Title for cross-tab

You can place title in the top left cell of the cross-tab. Titles can be setup for row header, column header and cross-tab itself.

Formatting of background and cell Borders

Formatting of cross-tab background and borders is setup from **Settings** tab of Cross-tab properties dialog box.

Making use of ready-to-use schemes

Intellicus Studio has a number of pre designed ready-to-use schemes. To apply a scheme, select it from **Scheme** dropdown box. Scheme includes cell background and fore colors also.

Background color

When a cross-tab control is placed on a report, its height and width is set. Background color will appear when there is no enough data to cover entire space (on the right side or lower side) reserved for cross-tab.

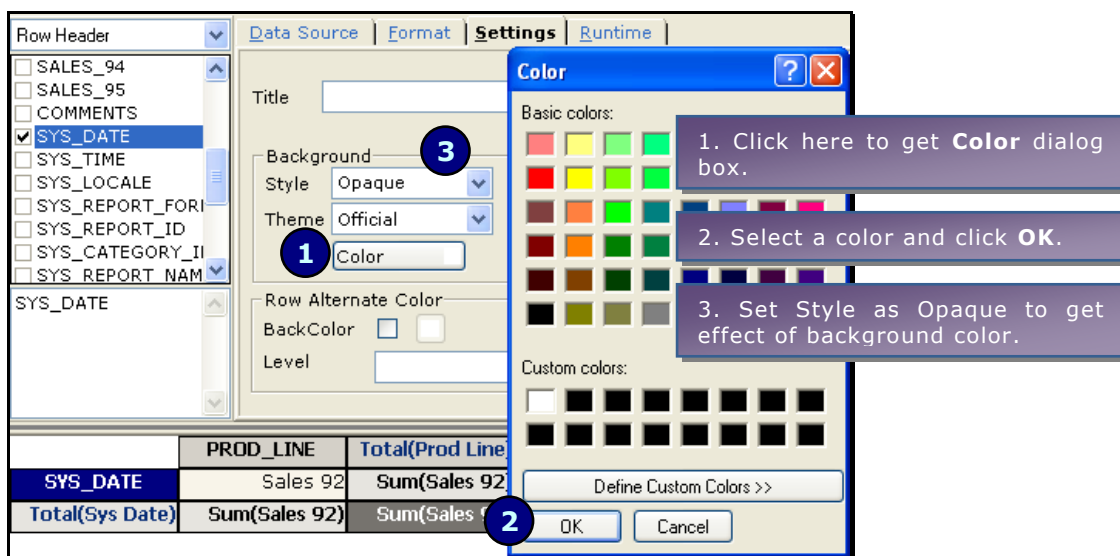


Figure 19: Cross-tab background color

Border

Border is line that appears between cells. You can set following attributes for border.

Border check box

Check (select) this check box to make the borders visible.

Color

This is to set color of the border. The method to set color is same as that for background color.

Style

This defines appearance of the border.

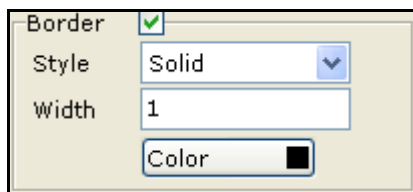


Figure 20: Border and style for cross-tab

Select the option that you want from **Style** dropdown box.

Width

This defines width of the border. Specify a number that is more than zero.

Examples

Use of light formatting

Following is the example from previous chapter having simple formatting effects:

Expenditure on Lighting and Heating

	Br1	Br2	Br3	Total
Jan	2000	1800	1890	5690
Feb	1900	1900	1900	5700
Mar	2000	1900	1850	11390
Total	5900	5600	5640	

The effects given are:

- Row and column headers are set as Bold.
- Back colors applied to all the cells in logical manner. Similar color for row and column of totals, one color for all the summary cells and similar color for row and column headers.
- Alignment of BranchCode to center.

Conditional Formatting of cells

What is it

Conditional formatting refers to feature of Intellicus wherein formatting of a cross-tab cell will be applied based on certain values when report actually runs. For example,

- Background of the cell turns red when a *sales* figure is less than targeted sales.
- Value is presented in Bold when it is 20% higher than that in the same period last year.

When to use

This is a handy tool when you want to pass some more information to the user without actually placing that information on report. For example:

- If expenditure is above limit, print that figure in bold.
- If actual sale is less than target, print that in cell background red.
- If flight occupancy is below certain limit, make it print in Red color.
- If staff presence is 100%, print it Blue, if it is 80% print it Red and if it is less than 60% print it in cell background red and text color Yellow.

Preparation

You need to make some preparation before it can actually be used in cross-tab:

1. Setup one or more conditions.
2. Setup formats to be applied on text.
3. Join conditions and formats.

For details on above points 1, 2 and 3, please refer online help of Intellicus Desktop Studio or IntellicusStudioUserManual.pdf.

Applying conditional formatting on cross-tab

Once conditions and styles (formats) are setup, it is easy to apply conditional formatting to a cell.

Conditional Formatting can be applied to row headers, column headers and summary fields. Steps for setting up conditional formatting on row headers, column headers and summary fields are the same.

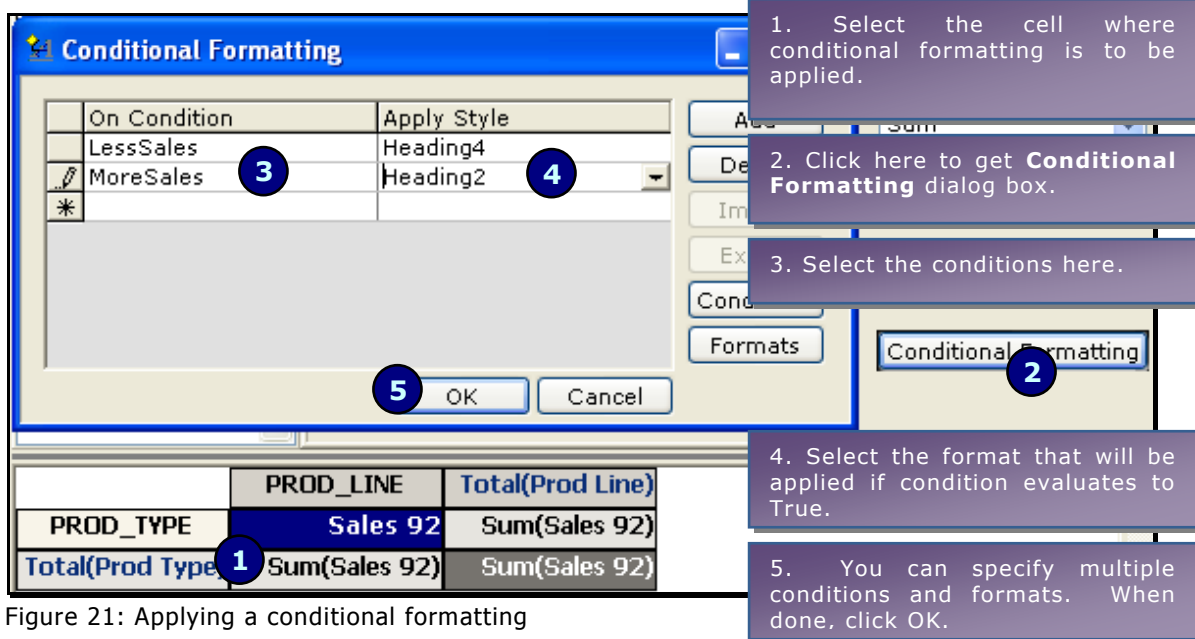


Figure 21: Applying a conditional formatting

Multiple conditions and formats (styles) can be applied to a cell.

title row header	Audio Systems	
2.5 mm Flashing	0.00	
AC/DC Car	0.00	
Audiovox	0.00	
Body Glove	0.00	
Cellboost	0.00	
DG YX6100	0.00	
Dual Car	0.00	
Enviro-Kit	0.00	
Enviro-T	0.00	
EnviroSak	0.00	
Extra Large Case	0.00	
Gmini XS200	22720.00	2266
MP3 Photo	8120.00	1780
Microwave	0.00	
Mini Case	0.00	
Nextel i325	0.00	

Figure 22: Cross-tab having condition formatting applied

The above image shows the effect of conditional formatting applied in summary fields cells.

Data grouping on cross-tab

Larger the business, more complex becomes the analysis. You need to have multiple fields on column header and same on row header. Have a look at the example given below:

		East Zone		West Zone	
		East1	East2	West1	West2
Salary	Mkt	1298	1220	1440	1609
	Engg	3090	2800	4600	4700
	Admin	2040	2000	3090	4000
Services	Lighting	550	550	690	720
	Water	580	600	300	220
	Security	200	229	200	229

When to group

When summary field depends on two level of information, you may consider grouping. Some examples:

- Zone and area expenditure report showing monthly expenditure by expenditure-heads.
- Quarterly flight occupancy chart showing occupancy by sector and flight number.

However, there is a dependency. Data will appear correctly only if it is grouped logically. You may not like to group data first by cities and within cities, by states!!

How to group

To do this, select multiple fields for column header or row header in the right sequence. Selecting in right sequence will decide if the cross-tab will turn out to be logical or a meaningless matrix.

The screenshot shows the 'Crosstab Properties' dialog box with the 'Data Source' tab selected. The 'Summary Field' list on the left has 'ORDER_NO' checked. The 'SQL Query' field contains 'select orders.* from orders'. The 'Available Fields' list on the right has 'ORDER_DT', 'ORDER_NO', and 'PICTURE'. A preview table at the bottom shows a cross-tab structure with 'REP_NO' as the row header and 'ORDER_DT' as the column header. Three callout boxes point to the dialog: 'Sequence in selecting fields will decide how information will be grouped.' points to the 'Summary Field' list; 'This field was selected first.' points to 'ORDER_NO' in the 'Summary Field' list; 'This field was selected later.' points to 'ORDER_DT' in the 'Available Fields' list.

REP_NO	ORDER_DT	Total(Order Dt)
	Order No	Sum(Order No)
	Total(Order No)	Order No
	Sum(Order No)	Sum(Order No)

Figure 23: Grouping data on cross-tab

The field that is selected earlier will appear outside (major group). The field that is selected later will appear inside (minor group).

Other steps in creating a cross-tab remain the same. You can also create groups based on column headers. The steps are logically the same as that of creating group by row headers.

Example

To get the cross-tab like the example given above,

		East Zone		West Zone	
		East1	East2	West1	West2
Salary	Mkt	1298	1220	1440	1609
	Engg	3090	2800	4600	4700
	Admin	2040	2000	3090	4000
Services	Lighting	550	550	690	720
	Water	580	600	300	220
	Security	200	229	200	229

We need record-set having the following fields:

- ExpenditureType
- DeptCode
- ZoneCode
- BranchCode
- ExpAmt

General steps to get this cross-tab in Intellicus Studio are:

1. Set the appropriate connection, create an SQL and refresh fields.
2. Place Cross-tab component preferably on Report Header.
3. Select ExpenditureType as first row header.
4. Select DeptCode as second row header.
5. Select ZoneCode as first column header.
6. Select BranchCode as second column header.
7. Select ExpAmt as summary field.
8. Apply formatting to row headers, column headers and summary field.

Cross-tab and drill-down

Cross-tabs are typically used to have summary on single sheet of paper / screen-view. However, when a report will be viewed by a decision maker, it is quite possible that he / she wants to have a look at details almost at that time.

Using drill-down feature, decision maker will be able to get to the detail of a summary at a single mouse-click.

What is a drill-down

This is a feature using which from within a report designed in Intellicus user can open any other Intellicus report or a document.

For example:

- Opening and viewing *Department-wise patient list* from a cross-tab having *department-wise patient count*.
- Opening and viewing expenditure-information of a branch from a cross-tab having expenditure-summary of all the branches.

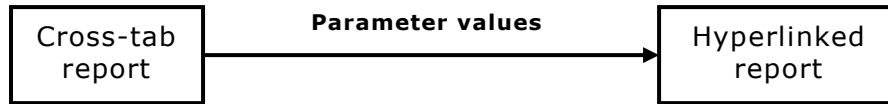
How does it work

While setting up summary field, we need to make it hyperlink and associate a report with it. So that, while viewing the report on-screen, when user clicks the hyperlink the report associated with the hyperlink is opened.

If the hyperlink is associated with a web site, it will open up. If it is associated with an online document, respective document will open, provided you have the associated program (such as MS Word for a .doc file) installed on the workstation.

Prerequisites

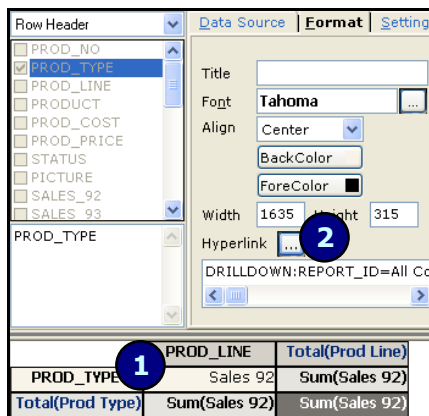
While working on the cross-tab having a hyperlink for drill-down effect, make sure that the report being opened on clicking the hyperlink is already exists and it is uploaded in the right folder.



To open the report with relevant data such as, showing detailed expenditure about the right branch, the report being associated will need parameters that will be sent from the cross-tab report itself.

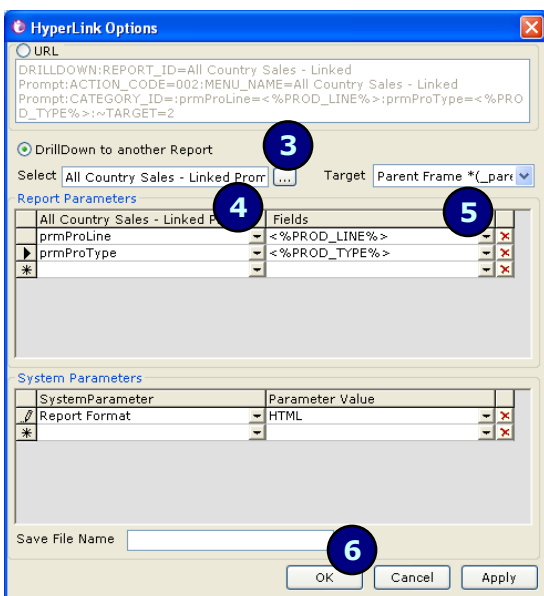
Setting up hyperlink

Before setting up the hyperlink in cross-tab, make sure you have created the "hyperlinked report" and uploaded on the server.



1. Click the cell where hyperlink is to be applied.

2. And click this button to get Hyperlink dialog box.



3. Click this button to get categories and select the report to be opened.

4. Select parameter in hyperlinked report that will receive parameter from this report.

5. Select the field whose value will be passed to the hyperlinked report.

6. A URL will be formed which will appear in the box below URL option button. When done, click OK.

Figure 24: Hyperlinking a cross-tab cell

Example

Here is an example where a cross-tab has hyperlink setup that will open up a detail report. The example of cross-tab report depicted here is a sales summary report. When the user clicks one of the summary fields, report with sales details opens up.

Here is the cross-tab:

Product Sales during January 2006

	ProdA	ProdB	ProdC
East Coast	1800	2000	4000
Central	3000	5000	2300
West Coast	2500	3000	1500

A click on any of the sales figures should open a report:

Product Sales for ProdA in East Coast

CityCode	Reatiler Code	Sales
NY	893806	350
NY	893809	700
NZ	840033	245
DK	840102	400
SO	822034	105

To get such an arrangement, you need to have two reports designed:

- A detail report. This report will open when any of the cells in the cross-tab report is clicked.
- The cross-tab report.

Reports will need following as part of record set:

- ProductCode
- RegionCode
- SalesAmt
- CityCode
- RetailerCode

After designing the detailed report with ProductCode and RegionCode set as parameters (the report that will be called from cross-tab) and uploading it to the server, general steps to design the cross-tab report are:

Cross-tab and drill down

1. Set the appropriate connection, create an SQL and refresh fields.
2. Place Cross-tab component preferably on Report Header.
3. Select RegionCode as row header.
4. Select ProductCode as column header.
5. Select SalesAmt as summary field.
6. Go to Format tab, select the cell of summary field and click Hyperlink button.
7. On Hyperlink dialog box, set the report, specify ProductCode and RegionCode as parameters.
8. Set formatting details.

Advanced cross-tabs

Here we will discuss some more imaginary examples where cross-tab of Intellicus can be stretched to its limits. This chapter lists examples where summary fields are actually having character fields and even having multiple fields, use of conditional formatting as well as display field, etc.

Use of character field as summary field

This example represents availability of employees in shift schedule in a hospital:

On-Duty Team-leads on June 14 2006

	A	B	C	G
FacMgmt	John	Kelly	Sara	Donald
ICU	Dr Johnson	Dr Pearson	Dr Patel	Dr Smith
Rec	Pinto	Jenette	Peter	Sanya
Ortho	Dr Windsor	Dr Swamy	Dr Dennis	Dr Babbage

The names in bold letters are all over in-charge of the department.

All you need to have to get this report, is a record-set having fields:

- Department
- Shift
- EmployeeName
- InCharge (a field indicating whether the employee is an in-charge or not)

The record-set should be ordered by Facility.

General steps in studio would be:

1. Set the appropriate connection, create an SQL and refresh fields.
2. Create condition and format to be applied for department In-charge.
3. Place Cross-tab component preferably on Report Header.
4. Place Department on row header. Set its alignment as Center.
5. Place Shift on column header.
6. Place EmployeeName in "summary field".
7. Apply conditional formatting on summary field (Conditions, formats and conditional formats needs to be set in advance).
8. Set background color for row header, column header and summary field.

Use of multiple summary fields

You may need to give multiple pieces of information within one column. For example, this cross-tab shows planned expenditure versus actual expenditure made on Services.

Planned v/s Actual expenditure on Services

	US		NZ		AU	
Technology	12800	14000	9000	9000	3900	3800
Security	3000	3600	2200	2200	800	900
Training	7000	7000	5000	5000	2000	2000
Housekeeping	1500	1600	800	800	300	350

To get this cross-tab, you need to get following fields in the record-set:

- ExpenditureCode
- ExpType
- PlannedExp
- ActualExp
- Branches (US, NZ, AU)

The SQL query should get Services related records only.

General steps to create this cross-tab in Studio would be:

1. Set the appropriate connection, create an SQL and refresh fields.
2. Place Cross-tab component preferably on Report Header.
3. Place Branches on row header. Set its alignment as Center.
4. Place ExpType on column header.
5. Place PlannedExp in "summary field".
6. Also place ActualExp in "summary field".
7. Apply conditional formatting on summary field.
8. Set background color for row header, column header and summary field.
9. Hide column summary field and row summary field.

Different summary functions on summary field and row summary

Here is an example of cross-tab showing number of staff in different departments and their role. The row total and column total fields have total expenditure on salary.

Human Resources count and monthly cost by department

	Dev.	QA	Doc.	Sales	
Managers	3	1	0	1	450000
Supervisors	10	3	1	0	560000
Entry-level	27	10	3	2	420000
	940000	310000	70000	110000	1430000

This is what we have done here:

- Placed two fields as summary fields: EmployeeCode (Count) and Salary (sum).
- Hide summary field Salary and hide row summary field EmployeeCode and column summary field EmployeeCode.

Record-set for this cross-tab should have following fields:

- DeptCd
- RoleCd
- EmployeeNo
- Salary

General and essential steps to create this cross-tab would be:

1. Set the appropriate connection, create an sql and refresh fields.
2. Place Cross-tab component preferably on Report Header.
3. Place DeptCD as column header.
4. Place RoleCd as row header.
5. Place EmployeeNo as summary field. Set its summary function as Count.
6. Place Salary as summary field. Set its summary function as Salary. Set its **Visible** as clear (unchecked).
7. Select row summary field EmployeeNo and set its **Visible** as clear (unchecked).
8. Select column summary field EmployeeNo and set its **Visible** as clear (unchecked).

Multiple values in Summary field

The following example is a cross-tab report showing product sales summary by region.

This report has two fields in summary field: Name of sales executive, sales figure and a sign indicating the figure is below target (a negative sign) or above target (positive sign).

Product sales summary by Sales exe

	ProdA	ProdB
East Zone	Mick, 35, +	Peter, 45, -
Central Zone	Ralf, 33, -	Huan, 55, +
Western Zone	Austin, 40, +	Deron, 44, -

To get this report the record-set needs to have fields:

- ProductCode
- ZoneCode
- SalesRepName
- TargetedSales
- ActualSales

Here are the general steps to get this report:

1. Set the appropriate connection, create an SQL and refresh fields.
2. Create a character type formula (for example 'M_Sign' that gets value '-' if TargetedSales is more than ActualSales and gets the value '+' if TargetedSales is less than ActualSales. This will be a logical formula written using java script syntax.
3. Create a character type formula field (calculated field) that should concatenate SalesRepName, ActualSales (you need to convert it in character), M_Sign.
4. Place Cross-tab component on Page Header.
5. On cross-tab, place ZoneCode on row header, ProductCode on column header and M_Sign on summary field.

