



TRAINING GUIDE

Beginning Crystal 1



Using Crystal Reports with Lucy

Beginner Examples - 1

The first of a seven-part series, this workbook is designed for new Crystal Reports® users. You'll learn how to make small modifications to an existing report under a new report name, and link your customized report into Lucy.

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Getting Started

The Crystal Report software is what is currently used to create the standard reports provided with the Lucy software.

To create or revise reports the **user must own the Crystal Reports software**. The user also needs to have permission to make changes to the reports and add them to the system.

The desktop version of Lucy can only support the functions provided in Crystal XI. The Lucy software can run reports created in later versions of Crystal, however; it cannot use any new functionality. The Web version of Lucy was developed using a newer version of Crystal, Crystal 2008. There is at least one added bit of functionality in this version that is very helpful to have. If you are purchasing the Crystal Report software you should buy at least 2008.

Crystal Versions ...9, 10, XI, 2008, 2011, 2013.

Crystal Reference

The tool bar icons sometimes change with the version of Crystal. Screen shots throughout the help guides are capturing what was provided with Crystal XI.

Standard Toolbar



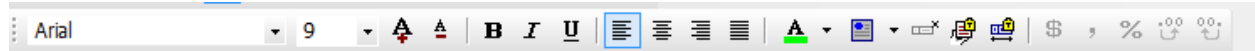
New Report, Open, Save, Print, Print Preview, HTML Preview, Cut, Copy, Paste, Format Painter, Undo, Redo, Toggle Group Tree, Field Explorer, Report Explorer, Repository Explorer, Dependency Checker, Workbench, Find, Zoom Control, Help

Insert Tools Toolbar



Insert Text Object, Insert Group, Insert Summary, Insert Cross-Tab, Insert OLAP grid, Insert Subreport, Insert Line, Insert Box, Insert Picture, Insert Chart, Insert Map

Formatting Toolbar



Font Face, Font Size, Increase Font Size, Decrease font Size, Bold, Italics, Underline, Align Left, Align Center, Align Right, Justify, Font Color, Outside Borders, Suppress, Lock Format, Lock Size/Position, Currency, Thousands, Percent, Increase Decimals, Decrease Decimals.

Expert Tools Toolbar



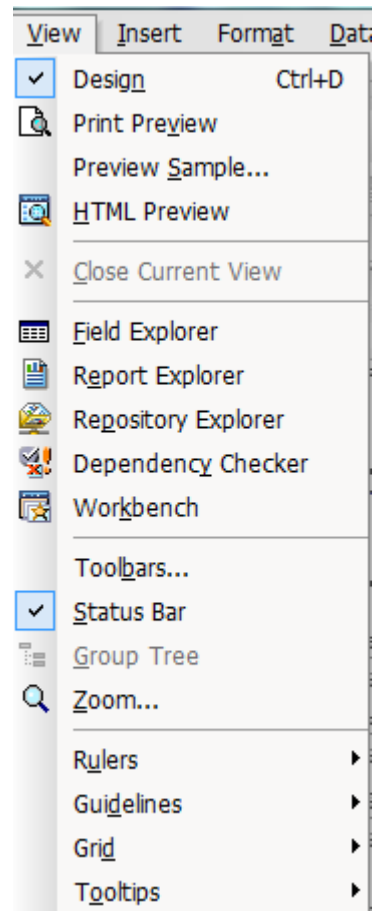
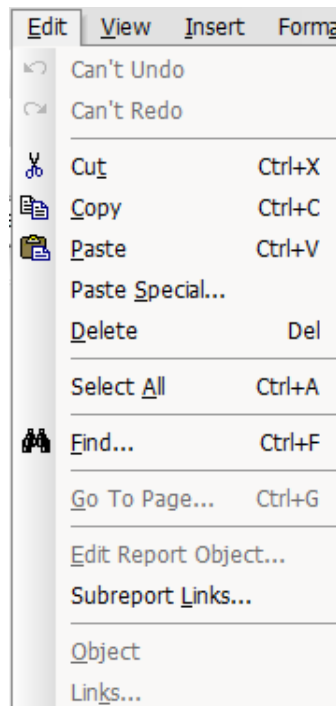
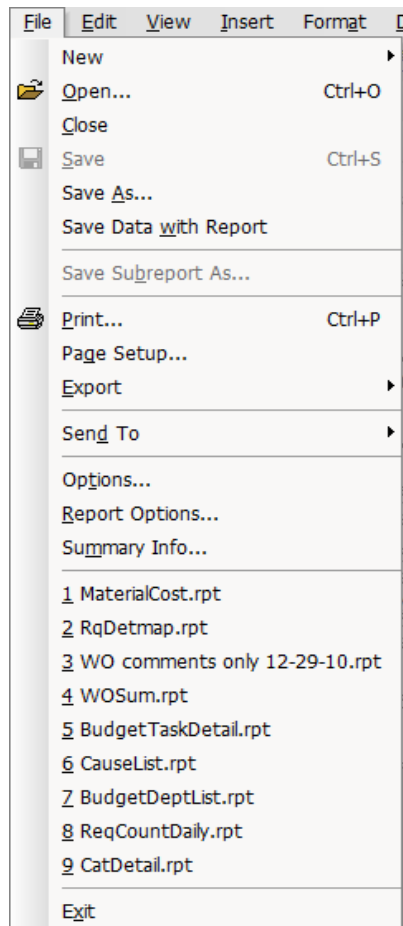
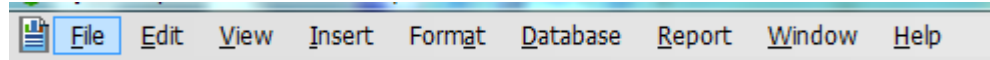
Database Expert, Group Expert, Group Sort Expert, Record Sort Expert, Select Expert, Section Expert, Formula Workshop, OLAP Design Wizard, Template Expert, Format, Insert Hyperlink, Highlighting

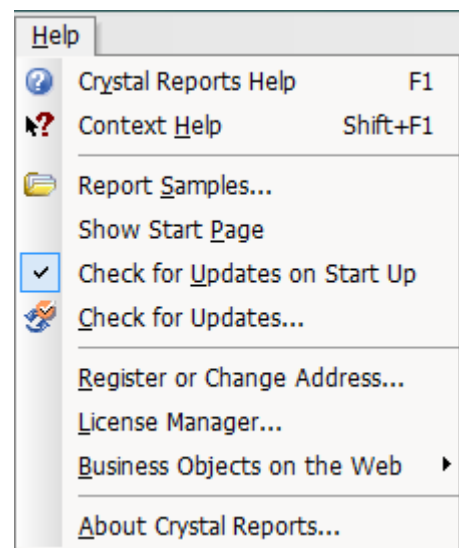
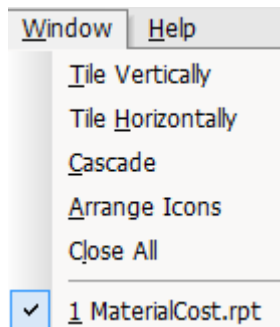
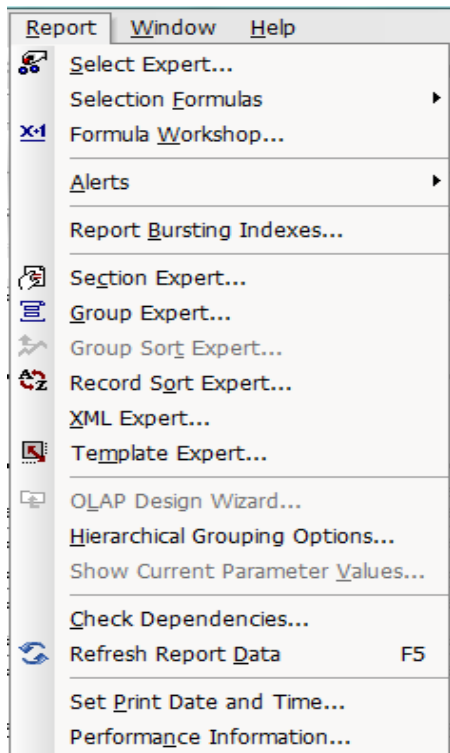
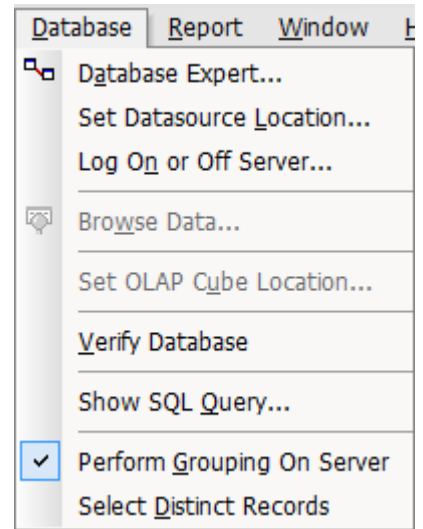
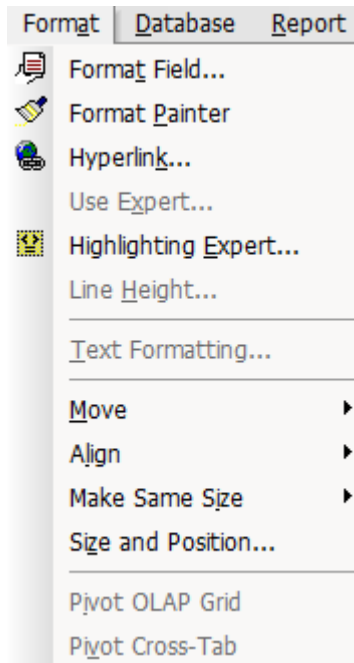
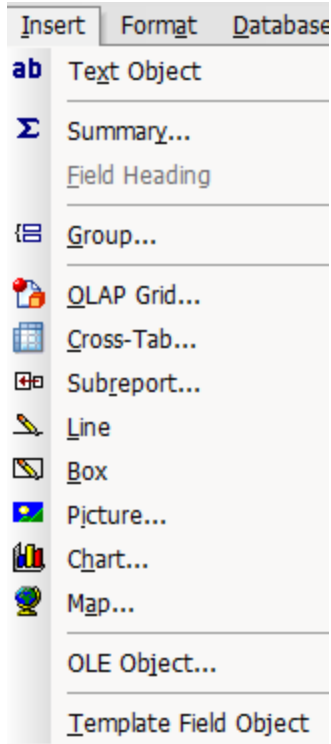
Navigation Tools Toolbar



Refresh, Stop, Show First Page, Show Previous Page, Show Next Page, Show Last Page, Back, Forward

The functions of the toolbar icons are also available in the drop down **Menu Bar** at the top.





Lucity provides a Request Summary Report (ReqSum.rpt) that looks like this:

Summary of Requests							Print Date
Report Subtitle							Print Time
Request #	Record Date	Status	Status Date	Priority	Problem	Address	
RQ_NUMBER	@ReqDate	RQ_STAT_TY	@StatDate	RQ_PRTY_TY	RQ_PROB_TY	@Location	
Total Requests: #TotReq							

Preview

Summary of Requests							8/17/2015
							3:09 PM
Request #	Record Date	Status	Status Date	Priority	Problem	Address	
2006-00013	4/5/2006	Completed	6/12/2006		INFO REQUEST - COMMERCIAL		
2006-00022	4/5/2006	Completed	4/7/2006		COM - 40 YD ROLLOFF SERVICE / RETURN	625 W GUADALUPE RD	
Total Requests: 2							

We would like to change the report to look like this:




Summary of Requests								Print Date
Report Subtitle								Print Time
Request Number	Record Date	Status	Status Date	Follow-Up	Category	Problem	X Coord	Y Coord
RQ_NUMBER	@ReqDate	RQ_STAT_TY	@StatDate	@FollowUp	RQ_CAT_TY	RQ_PROB_TY	RQ_X_COORD	RQ_Y_COORD
Total Requests: #TotReq								@comment
File Author								@ Page
								File Path and Name

Preview



Summary of Requests									8/17/2015
									3:20 PM
Request Number	Record Date	Status	Status Date	Follow-Up	Category	Problem	X Coord	Y Coord	
2006-00013	4/5/2006	Completed	6/12/2006		Commercial Collection	INFO REQUEST - COMMERCIAL	11.23568990	12.58963200	
2006-00022	4/5/2006	Completed	4/7/2006		Commercial Collection	COM - 40 YD ROLLOFF SERVICE / RETURN	10.12345670	12.45678900	
Total Requests: 2									

Finding the Report Location and Name

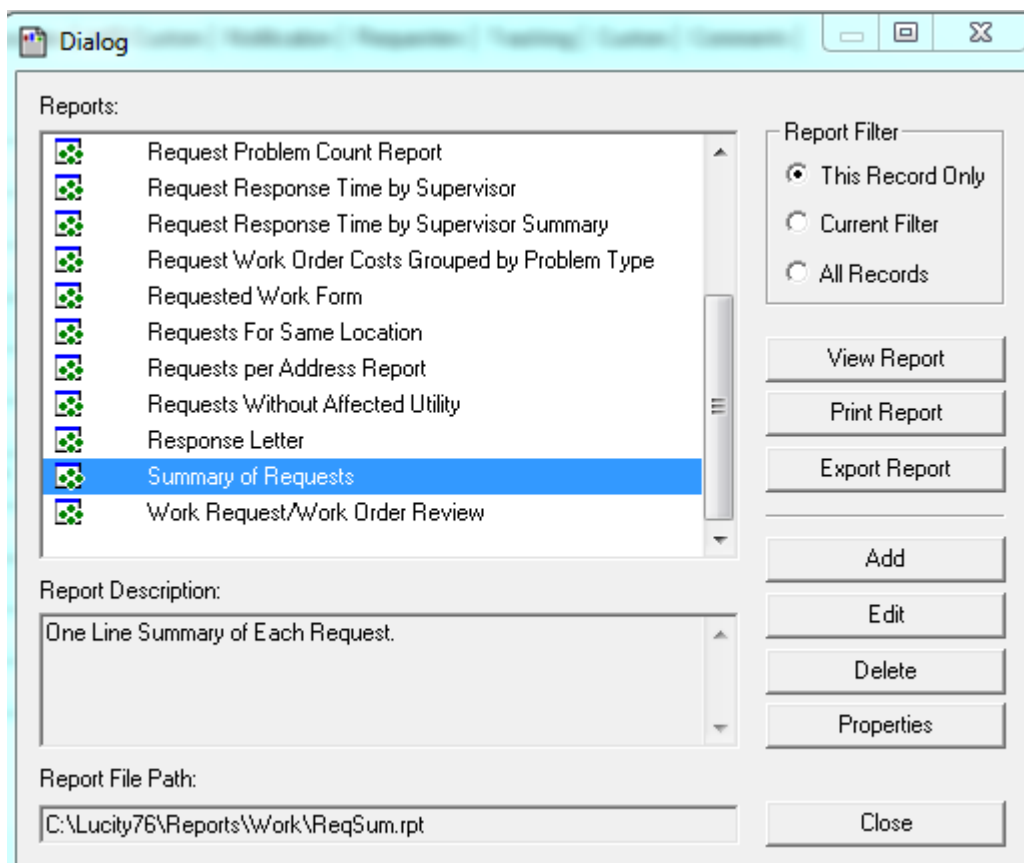
1. Open the Lucy module where the Request Summary Report is located.
 - o Select **Work>>Request** from the Lucy main menu.
2. Open the *Reports* dialog. Click the report icon  on the module toolbar.
3. Locate the report to be modified and highlight it.

Summary of Requests

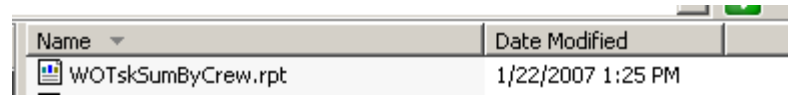
4. You'll see the *Report File Path* at the bottom of the dialog box. This path tells you important information about the report.
 - o The first part of the path tells you where the report file is located. In our example below, the report is located at **C:\Lucity76\Reports\Work**.

Note: Lucy report files are stored in the shared files location designated during your initial installation. This is typically on a file server, but could be on your local machine. In the path shown below, C is a mapped drive. This could also be a UNC path using the full server name.

- o The report name appears after the last backslash. As you can see below, this report is named **ReqSum.rpt**.



In the report location, the Reports Directory can be sorted by **Name** or **Date Modified** by clicking on the title in the upper bar.



Name	Date Modified
WOTskSumByCrew.rpt	1/22/2007 1:25 PM

Renaming Reports

If you modify a report and save it under the original name, the changes you made will be overridden the next time Lucy is upgraded. Thus, reports that are modified need to be saved under a new name in order to be used.

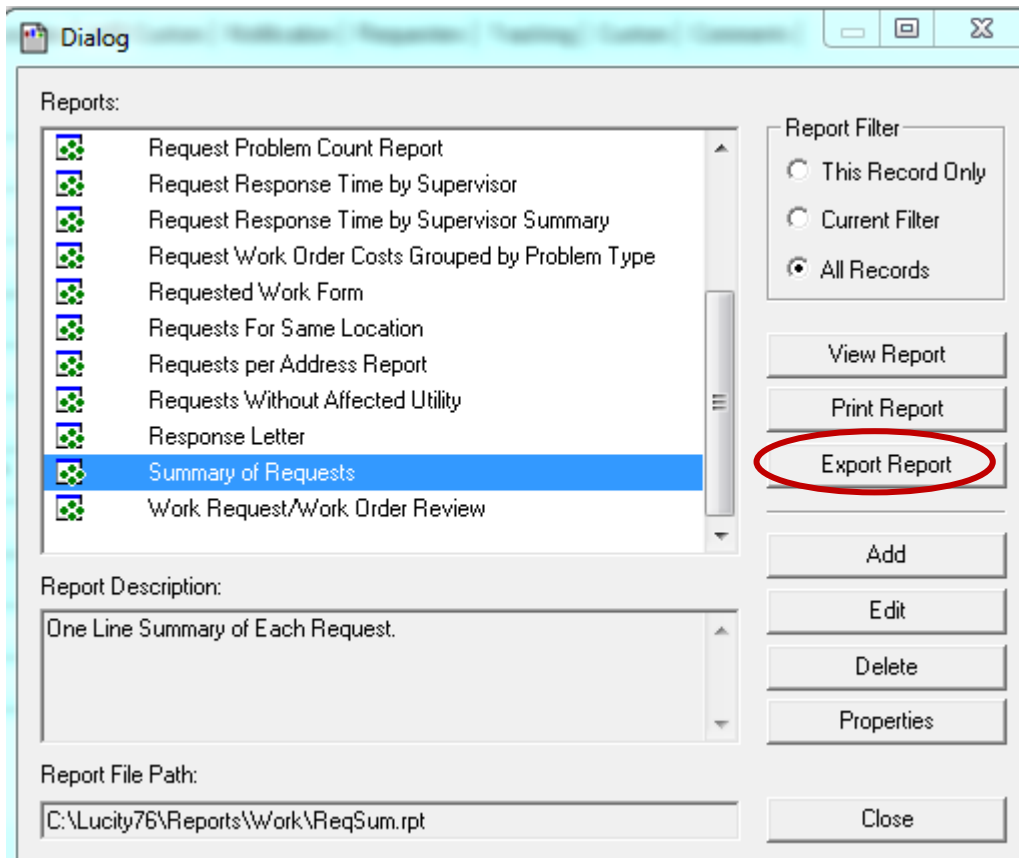
Note: You must have adequate permissions to save the modified reports. If you are not sure whether you have these permissions, check with your system administrator.

1. You'll want to make a copy of the report before you begin working on it. You can do this by simply exporting the report from the Lucy module's Report List to the Report Directory under a different name.
2. It's a good practice to establish a naming convention for your custom reports that makes them easy to distinguish from the Lucy standard report names. For example, you might want to add a two or three letter abbreviation for your company or organization or perhaps your initials to the original report name as a prefix or suffix.
 - Some sample custom report names are **LC_ReqSum.rpt** or **ReqSum_LC.rpt**.
 - Adding the abbreviation to the end of the report name (before the .rpt extension) will allow the custom report to be sorted with the original.
 - Adding the abbreviation as a prefix will sort all of your custom reports together.
3. Lucy reports store database connection information. When the report is run in Lucy, the program replaces this connection information with connection strings specific to the customer's database configuration during run-time. When you export a report, the database connection information used at run-time is saved. This is the preferred method for handling Lucy reports and will ensure that the report stays pointed to the correct data set so that the report can be run out in Crystal.

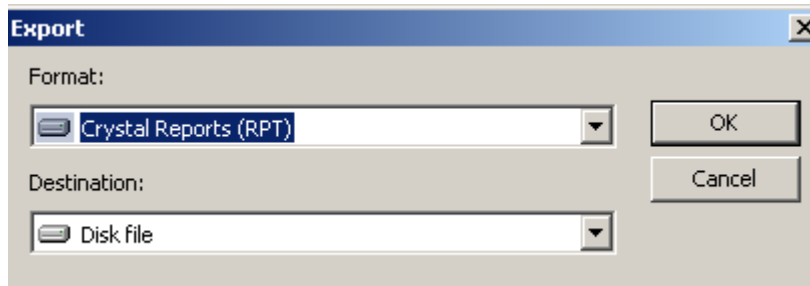
Exporting a Report

As we mentioned above, the preferred way of handling Lucity reports is to export them. This allows you to rename the report and make modifications as well as maintain your database connection information. Follow the steps below to export a report:

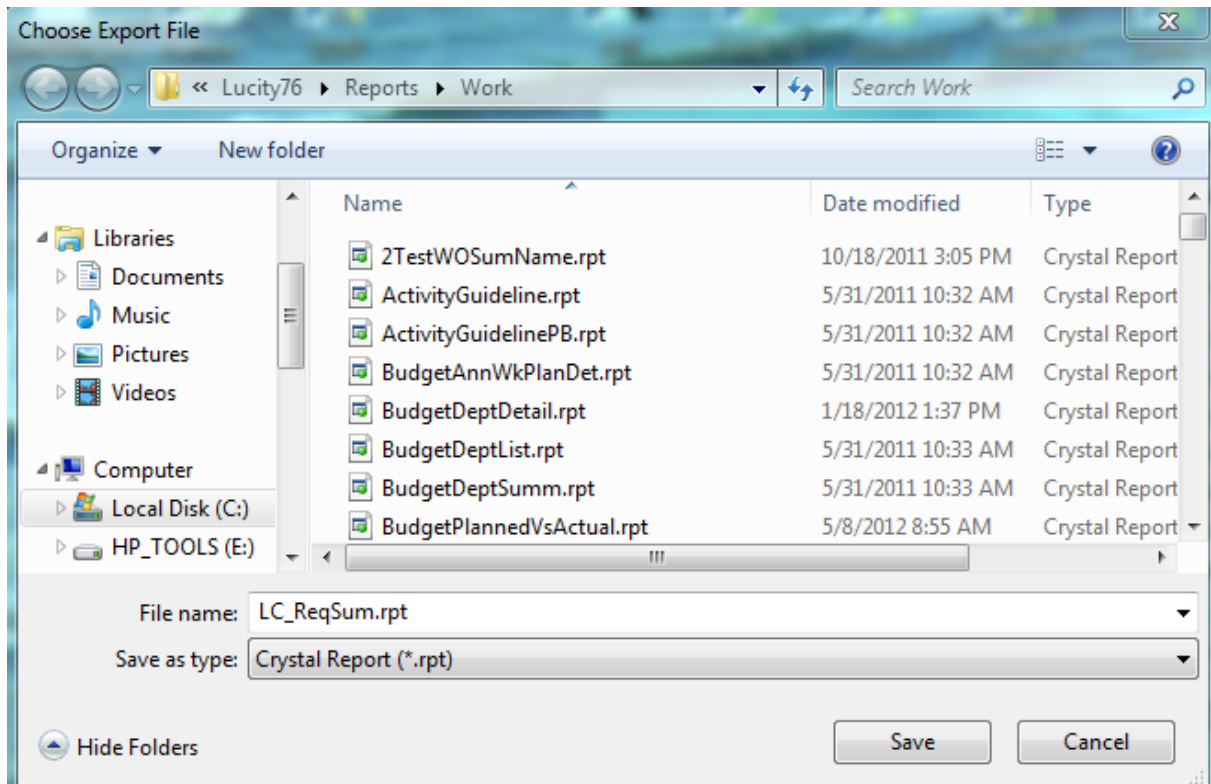
1. Within the Reports dialog click *All Records*.
2. Highlight the report you'd like to copy and select *Export Report*. (Wait)



3. An Export dialog will appear.
 - a. Select "Crystal Reports" from the Format drop down box.
 - b. Then, select "Disk file" in the Destination drop down box.
 - c. Click *OK*.

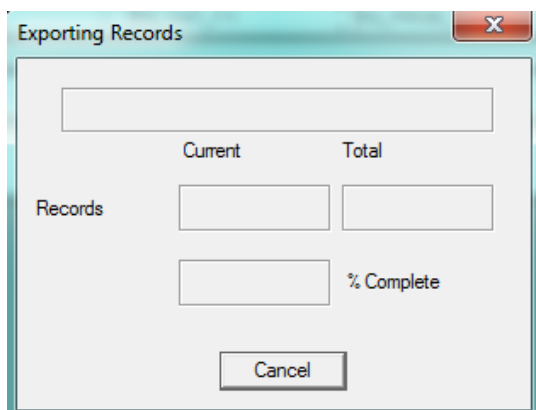



- The following dialog will appear:

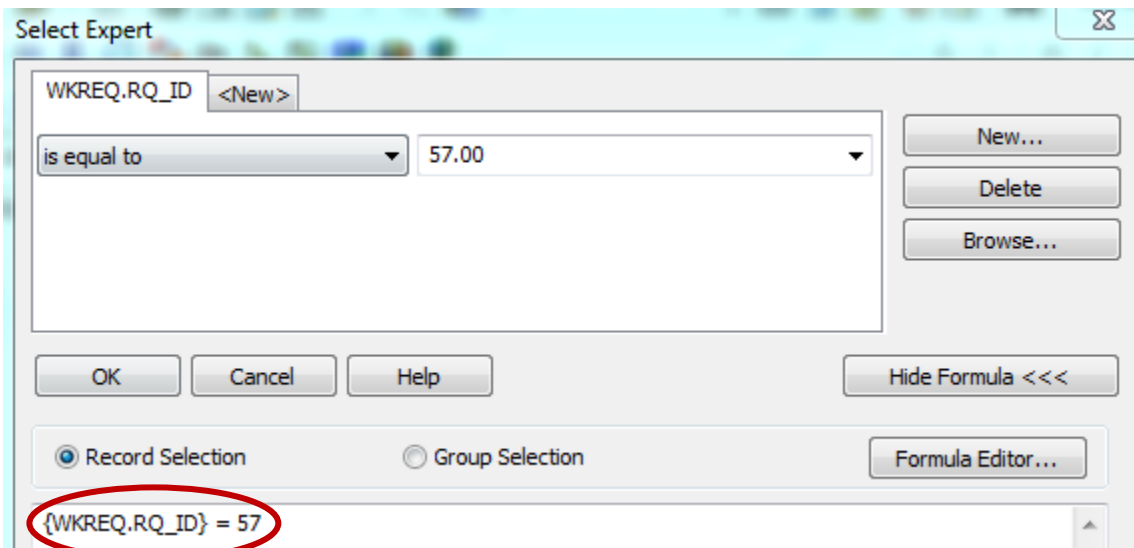
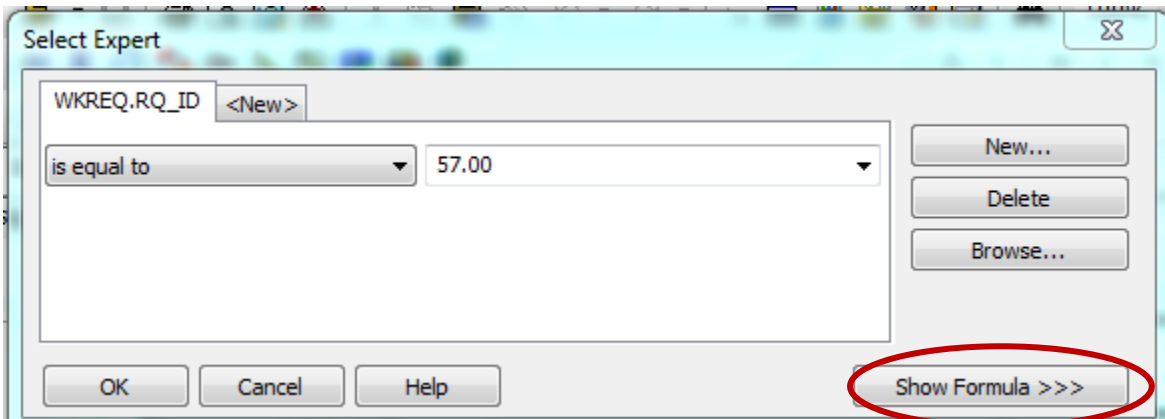


- Find the location where the report is to be stored. It is recommended that you use the default report location discussed in the previous pages.
- Type in a new File Name (LC_ReqSum.rpt).
- Click Save.
- At this point the report needs to run, so if the subtitle query shows up, just click OK.

Note: If the Export takes more than a few seconds then cancel and change the Report filter to "This Record Only". This may be necessary for complex reports, especially ones with subreports. Then Export (follow above steps 2 - 8).



9. Close the Report dialog.
10. Minimize the Lucity module.
11. In the Reports Directory, open the new report that was just exported.
 - On the report title either Right click and select *Open* or double click.
12. From the menu bar at the top of the screen, select *File*.
13. **Uncheck** the *Save Data with Report* option.
14. Click *Save*.
15. If the report is Exported with *This Record Only* then the Select Expert needs to be opened and the ID selection formula deleted.
 - a. Click *Select Expert* .
 - b. Click *Show Formula>>>*.



- c. Click and drag over the formula.
- d. Press Delete key to remove.

- e. Click *OK*.
- f. Click *Save*.

You are now ready to begin making modifications to the report.

Note: Reports with “secure” fields may show as “Hidden” but this is temporary and can be changed when refreshing the report and choosing the “Prompt for new parameter values”. If date fields were required to run the report these too would be temporarily placed in the report until the report is refreshed and new parameters are given.

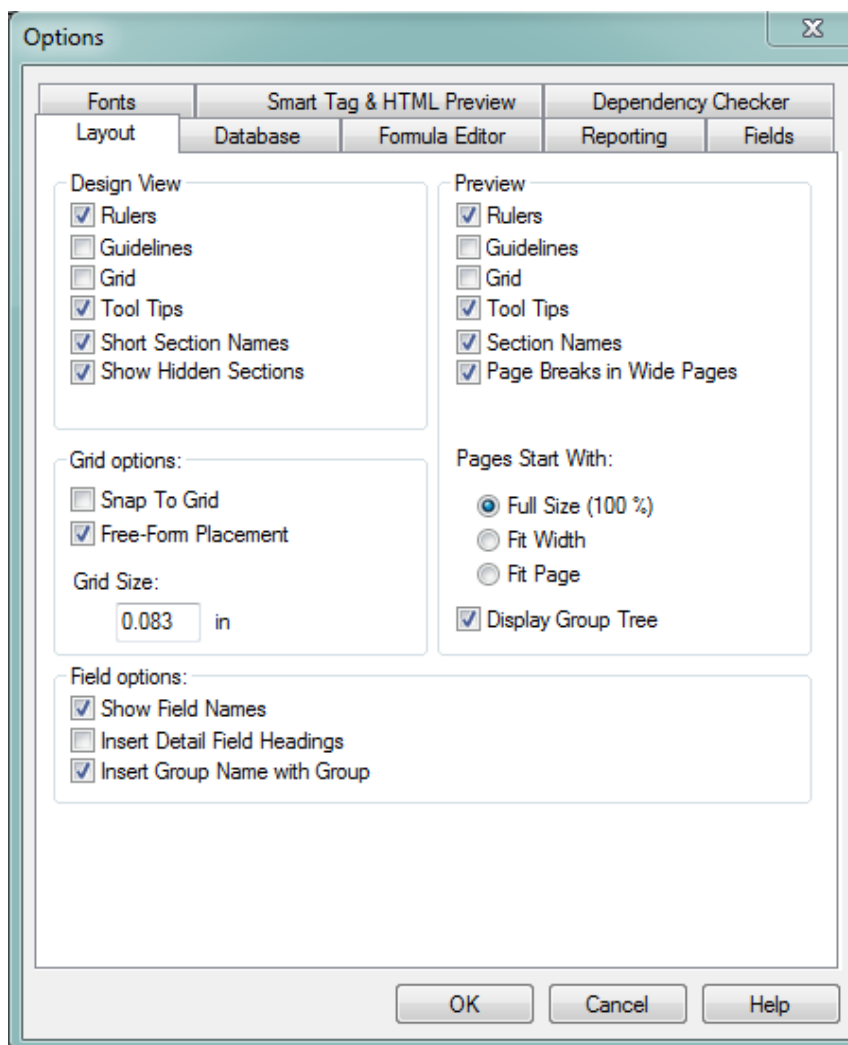
Options

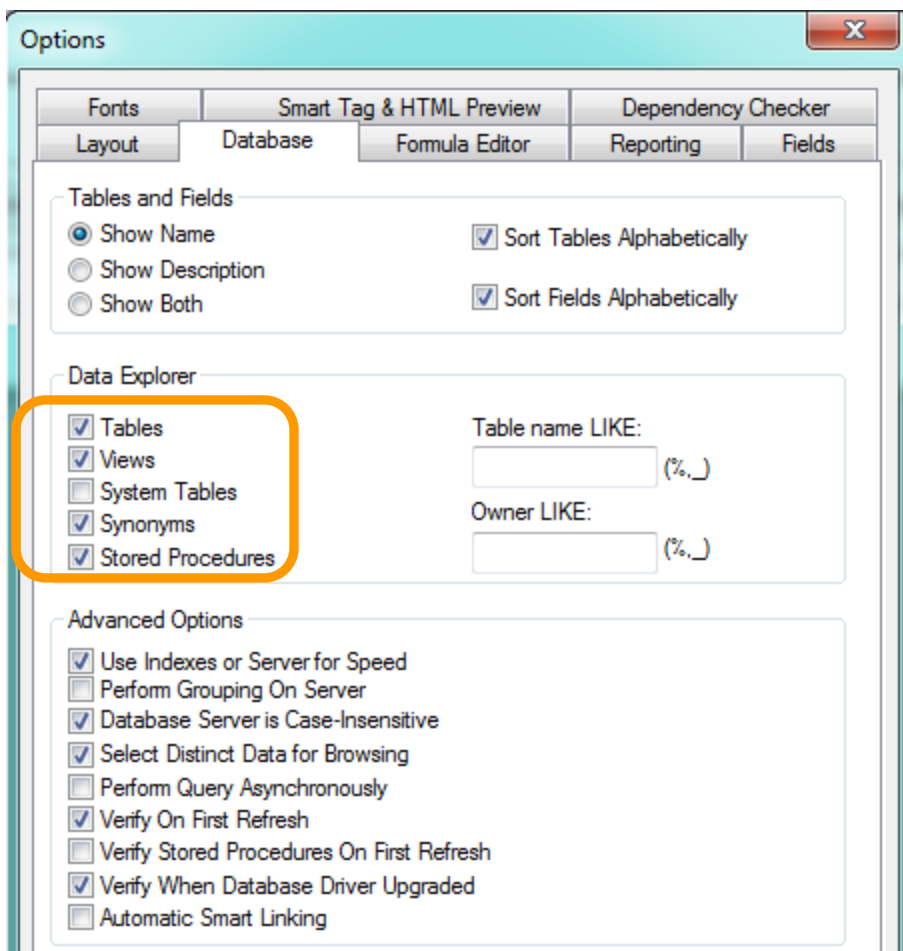
Whether a report is modified or created new, it is helpful for certain report options to be set before working on the report. Within the Crystal Reports *Options* and *Report Options* there are a number of settings that can be preset for generalizations. These can be changed for individual reports or individual fields within a report.

To view the “Options” section, we will look at the previously exported report, *LC_ReqSum.rpt*.

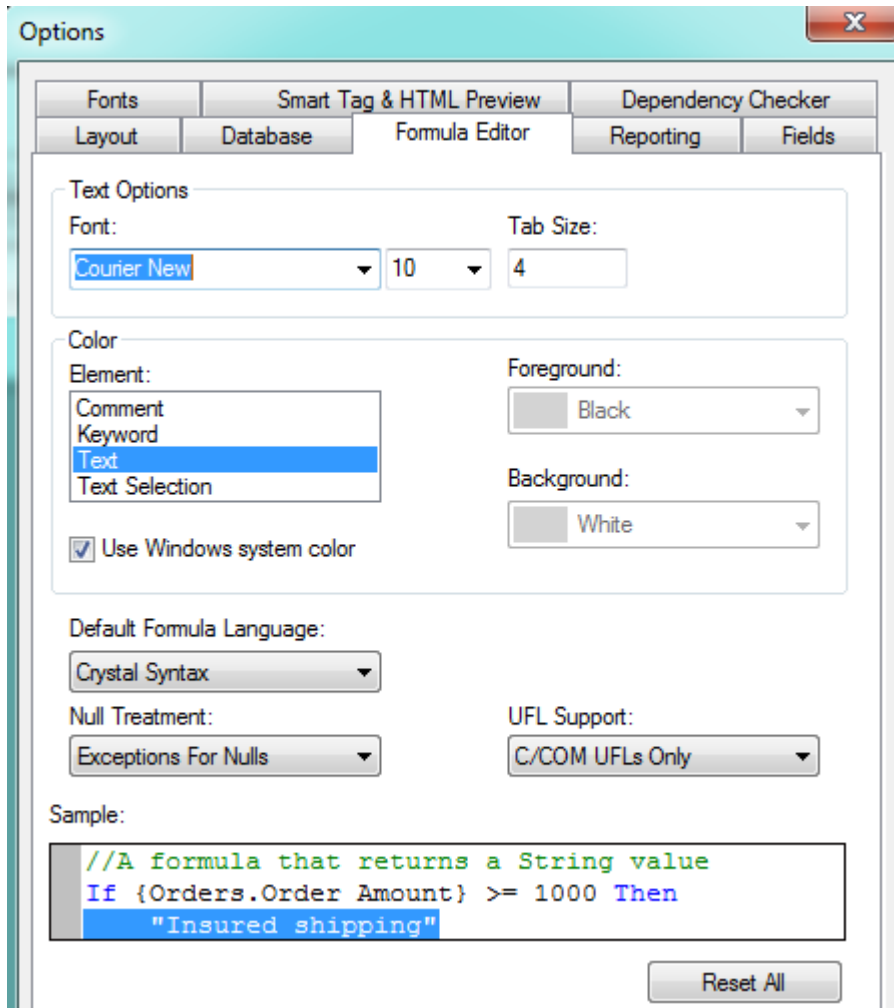
- o In the Menu Bar click **File >> Options**

The following screen captures show what options can be changed behind the scenes. These options will be reflected in all of the reports created.

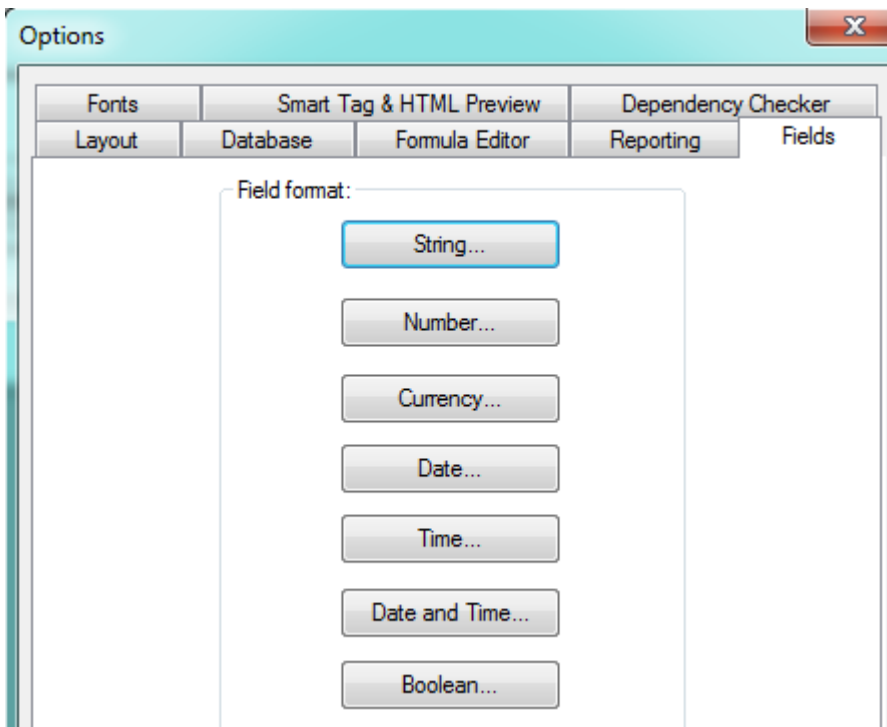
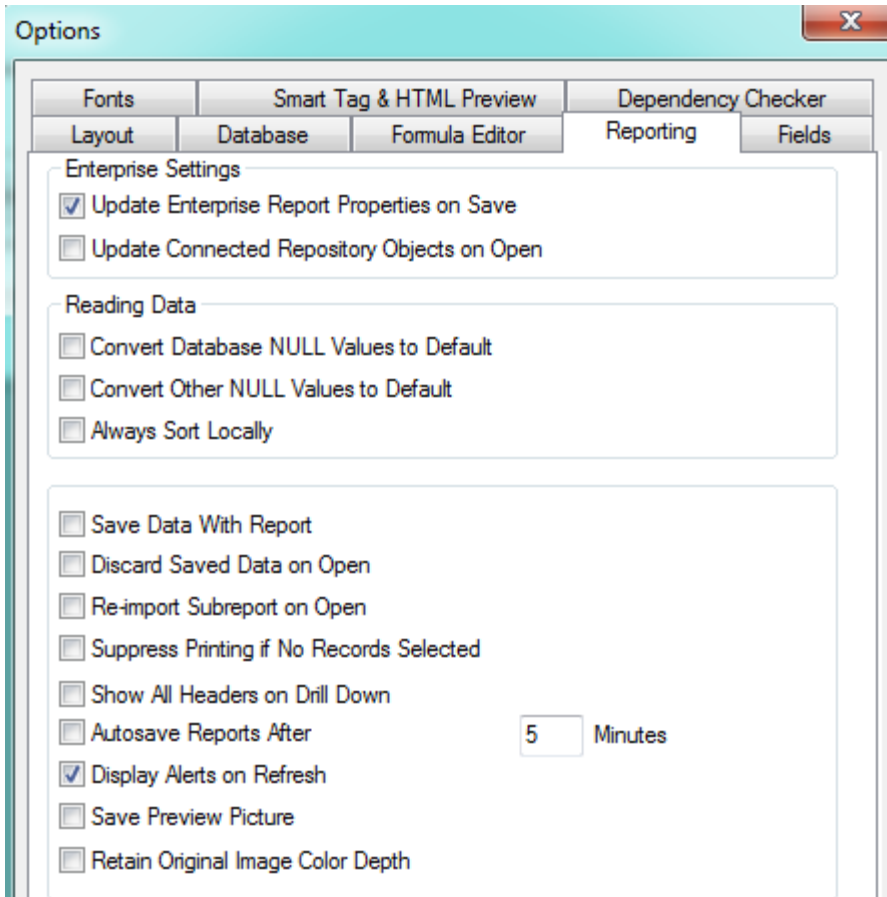




Notes: _____



Notes:



For each field type there are format options specific to that type. There is a sample box at the bottom of the Format Editor for each field type that shows the current field formatting.

String

The screenshot shows the 'Format Editor' dialog box with the 'Common' tab selected. The 'Object Name' field is empty. There are four unchecked checkboxes: 'Read-only', 'Lock Position and Size', 'Suppress', and 'Suppress If Duplicated'. Below these, there is a 'Can Grow' checkbox and a 'Maximum number of lines' field set to '0'. The 'Text Rotation' is set to '0 degrees' and 'Horizontal Alignment' is set to 'Default'. The 'CSS Class Name' field is empty, with a 'Repeat on Horizontal Pages' checkbox (unchecked), a 'Keep Object Together' checkbox (checked), and a 'Close Border on Page Break' checkbox (checked). At the bottom, a 'Sample' box contains the text 'XXXX'.

Number

The screenshot shows the 'Format Editor' dialog box with the 'Number' tab selected. The 'Style' list contains various number formats, with 'Custom Style' selected and highlighted in blue. The 'Currency symbol (system default)' section has a 'Display Currency Symbol' checkbox (unchecked) and two radio buttons: 'Fixed' (selected) and 'Floating' (unselected). A 'Customize...' button is located at the bottom of the dialog.

Currency

Common Number Border Hyperlink

Style

System Default Currency Format
\$-1123
\$-1,123
\$-1123.00
\$-1,123.00
\$-1123.0000
\$-1,123.0000
\$(1123)
\$(1,123)
\$(1123.00)
\$(1,123.00)
\$(1123.0000)
\$(1,123.0000)

Currency symbol (system default):

Display Currency Symbol

Fixed

Floating

Customize...

Date

Common Date Border Hyperlink

Style

System Default Long Format
System Default Short Format
3/1
3/01
3/1/99
03/01/1999
1 - Mar
1-Mar-99
1-Mar-1999
01-Mar-1999
01-March-1999
Mar-99
March 1999
March 01, 1999
Monday, March 1, 1999
Monday, 1 March, 1999
3
3-99

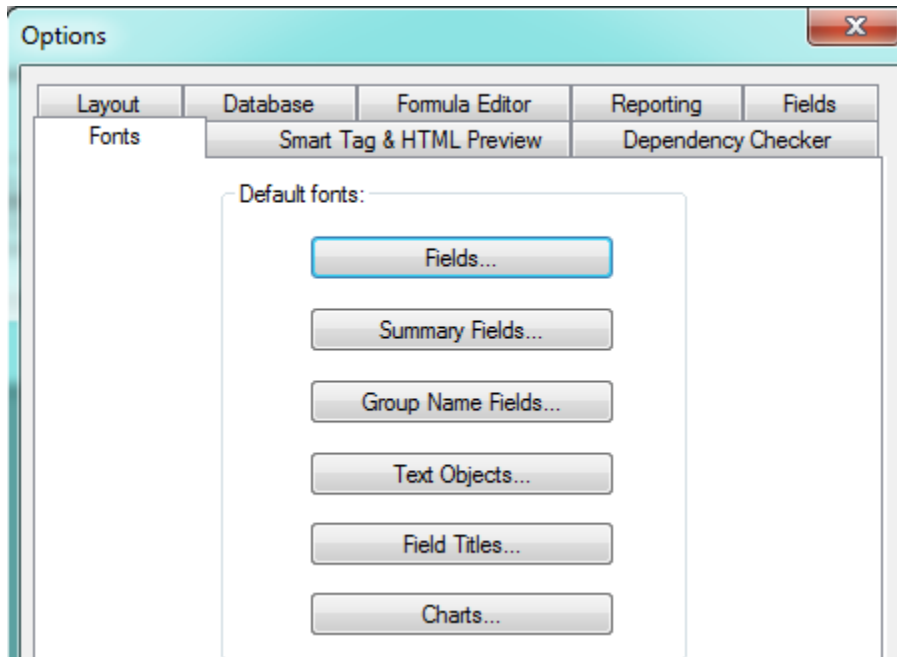
Customize...

Time

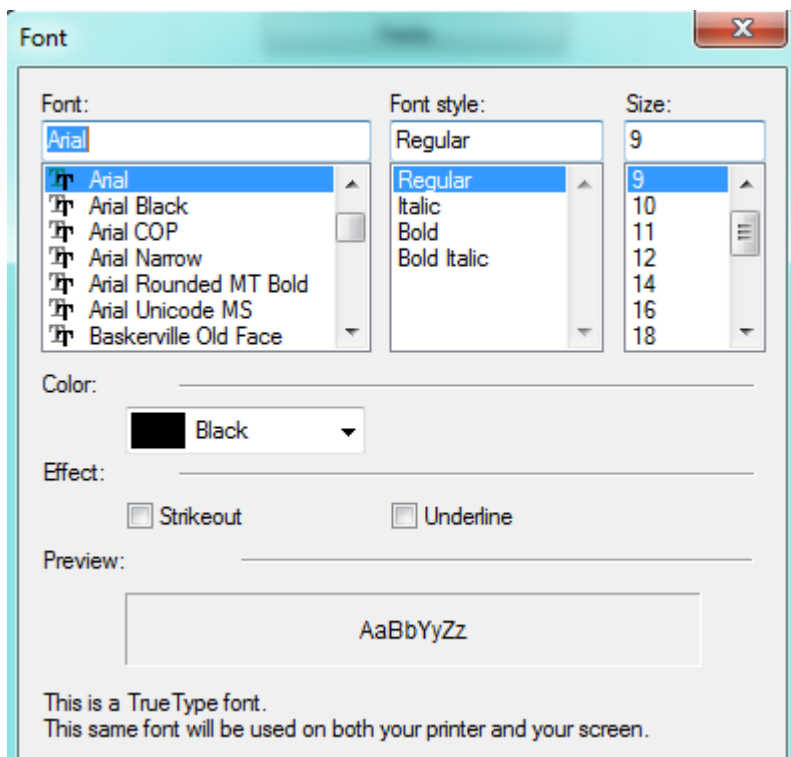
The screenshot shows a dialog box with four tabs: 'Common', 'Time', 'Border', and 'Hyperlink'. The 'Time' tab is selected. Inside the dialog, there is a section titled 'Style' containing a list of time format options: 'System Default Time', '13:23', '1:23 pm', '13:23:45', '1:23:45 pm', and '13:23.45'. Below this list is a 'Customize...' button.

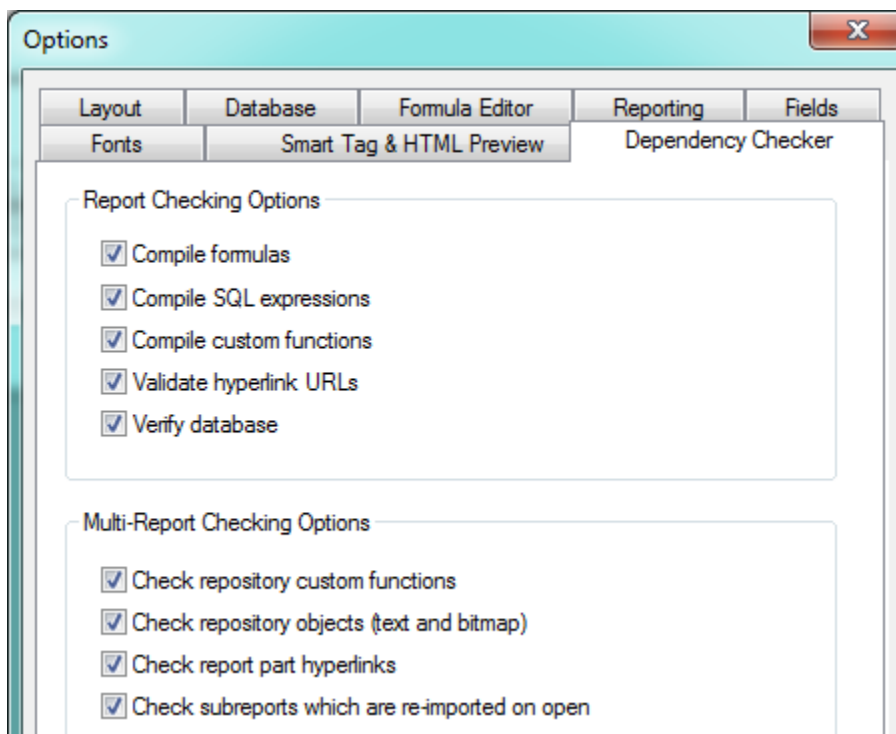
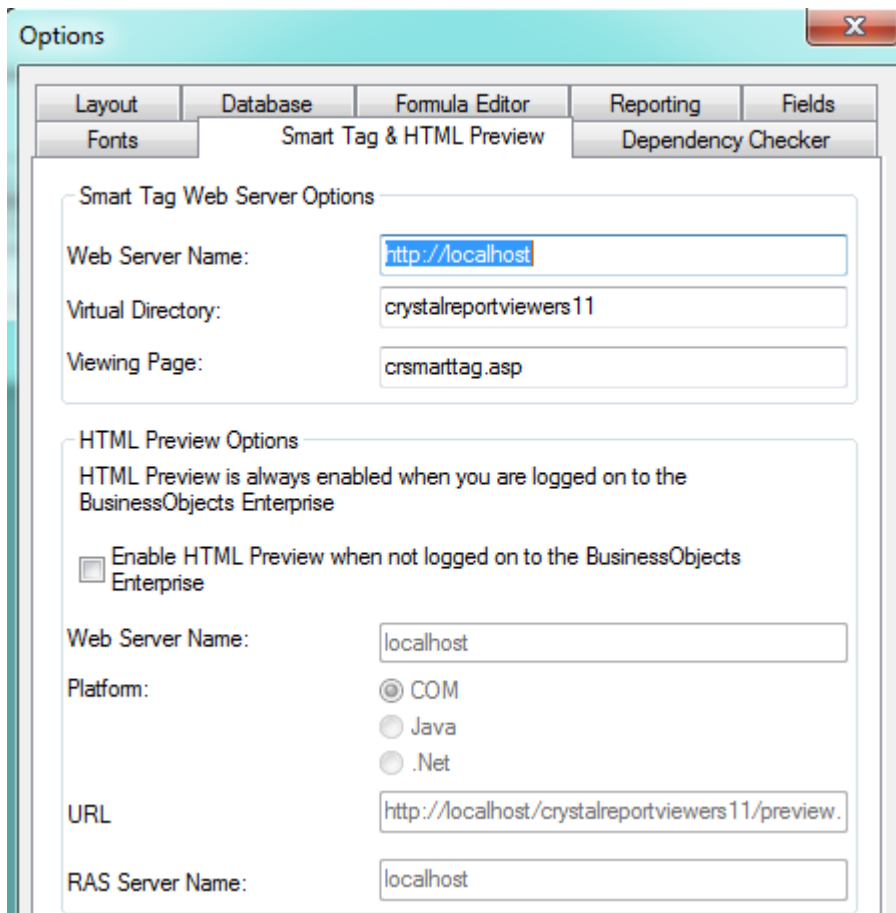
Boolean

The screenshot shows a dialog box with four tabs: 'Common', 'Boolean', 'Border', and 'Hyperlink'. The 'Boolean' tab is selected. Inside the dialog, there is a 'Boolean Text:' label followed by a dropdown menu currently displaying 'True or False'.



Each Field or Object type opens the Font options.



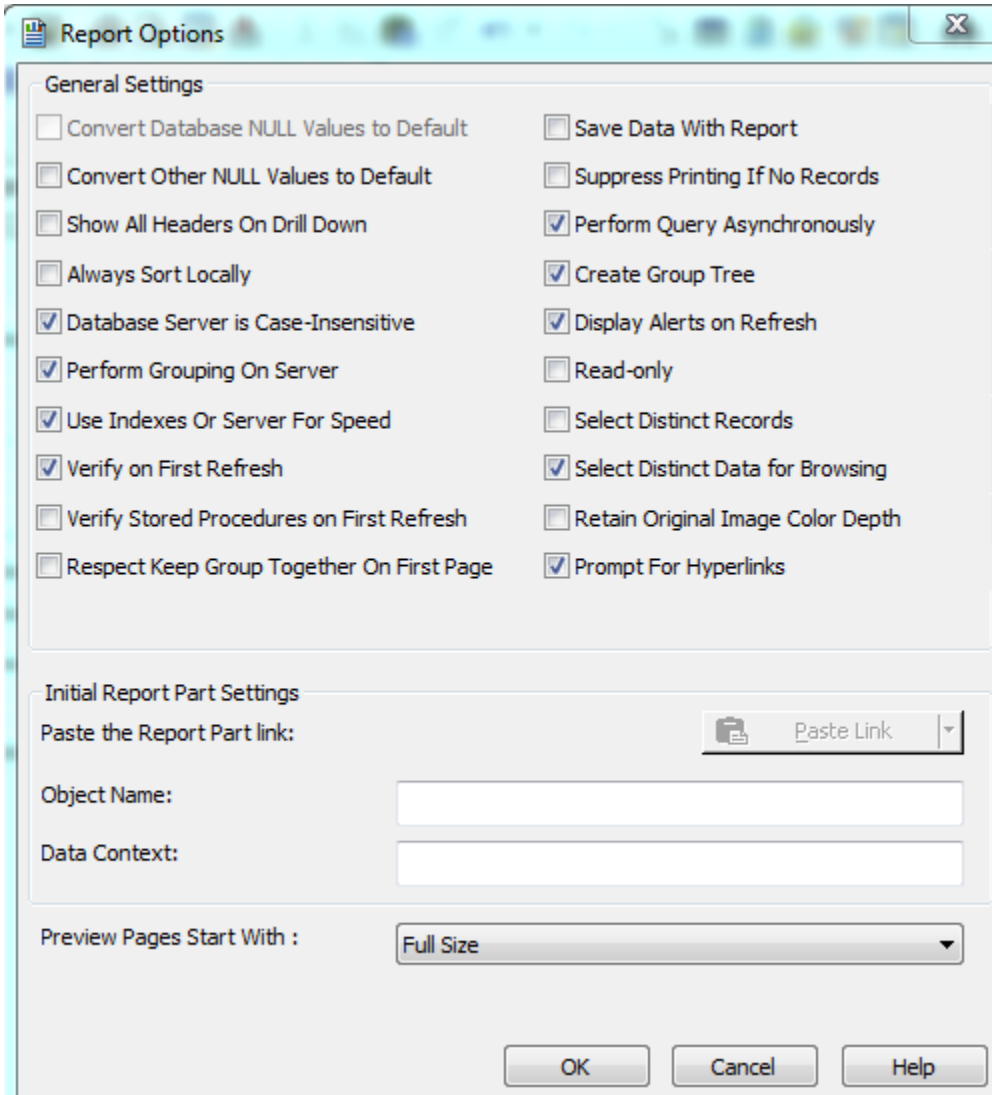


Report Options

Report Options are specific to an individual report.

- o In the Menu Bar click **File >> Report Options**.

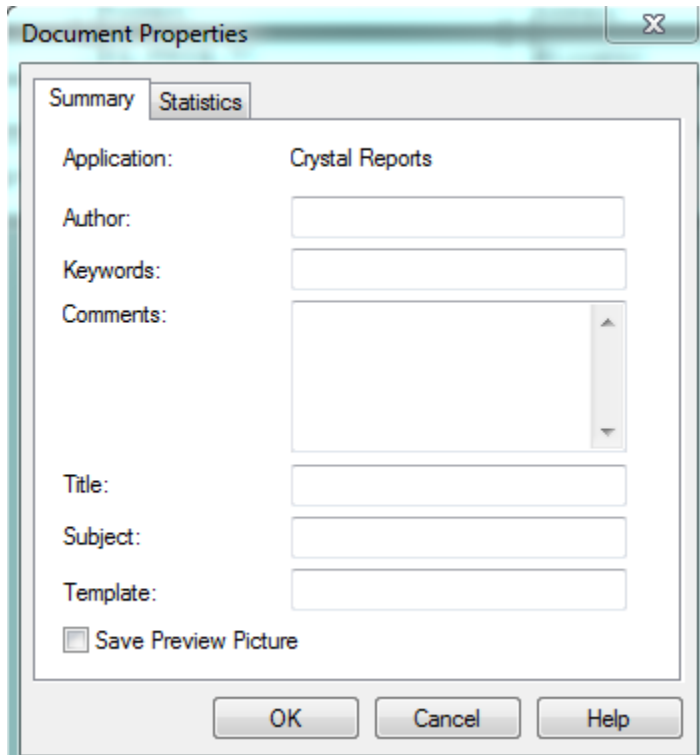
These Report Options are also available within Subreports (discussed later).



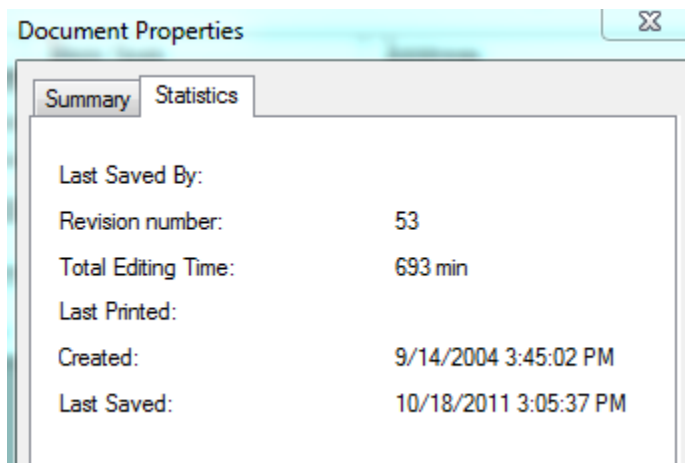
Document Properties

Another useful Crystal option is Document Properties. This information could help in report documentation. Some of the fields are available to be used in the report. They are found in the Special Fields section listed in Field Explorer (Discussed later).

- In the Menu Bar click **File >> Summary Info...**



The screenshot shows the 'Document Properties' dialog box with the 'Summary' tab selected. The 'Application' field is set to 'Crystal Reports'. The 'Author', 'Keywords', 'Title', 'Subject', and 'Template' fields are empty text boxes. The 'Comments' field is a multi-line text area. There is a checkbox for 'Save Preview Picture' which is currently unchecked. At the bottom are 'OK', 'Cancel', and 'Help' buttons.

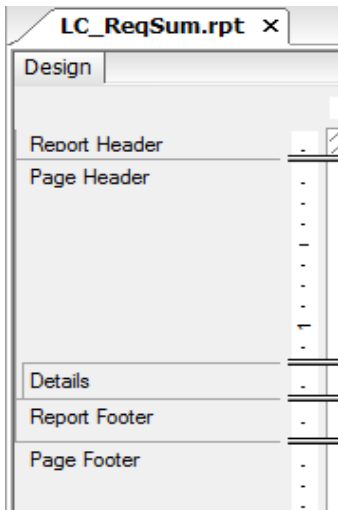


The screenshot shows the 'Document Properties' dialog box with the 'Statistics' tab selected. The fields display the following information:

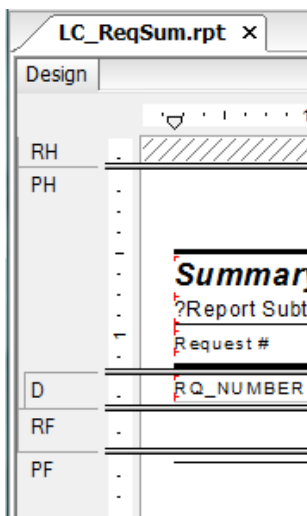
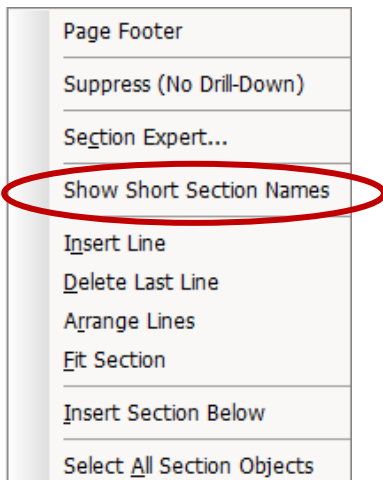
Last Saved By:	
Revision number:	53
Total Editing Time:	693 min
Last Printed:	
Created:	9/14/2004 3:45:02 PM
Last Saved:	10/18/2011 3:05:37 PM

Report Sections

Every report has a minimum of five sections. These sections show on the left side of the report.

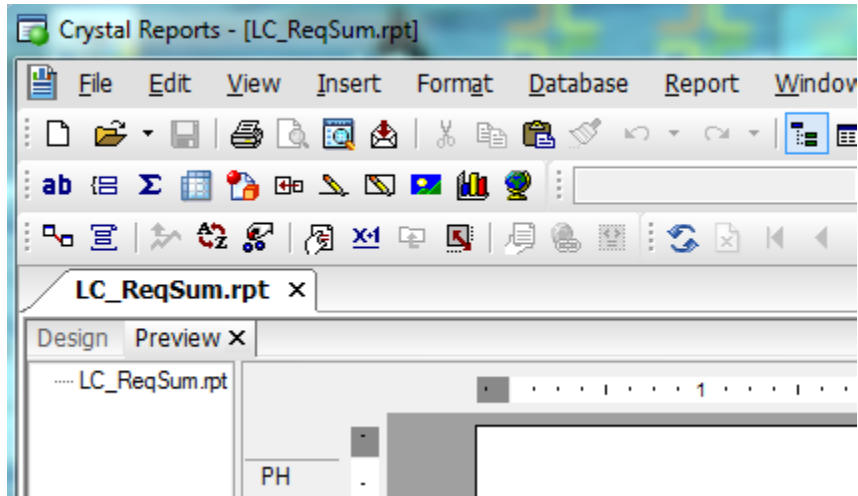


To conserve space this section can be reduced in size by right clicking in the section and selecting *Show Short Section Names*



Modifying a Report

Beneath the toolbars the open report will have a tab with the report name. Beneath this, the exported report already has two tabs available, Design and Preview. If the report is opened from the report folder then the Design tab will be present but the Preview will only show after the report is run.






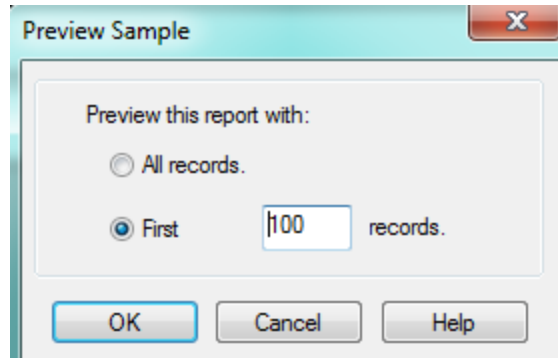
The Design page is where most of the report modifications will take place but can be done in Preview.


Note: The undo and redo buttons are very helpful when revising reports.



Saving and Viewing your Report

- Save any changes by clicking on Save . It is a good idea to Save while you are working and not just when you are finished with the report. (You never know when you will encounter one of those mysterious error statements that shuts down your system, losing all of your work).
- To preview the report, click *Print Preview* .
- To refresh the report, click Refresh .
- To limit the number of records previewed:
 - In the Menu Bar click *View*.
 - Select *Preview Sample...*
 - Select *First* and type in the number of records you would like the report to run with. This is particularly helpful when you have large numbers of records to deal with.



Note: If you are looking for a specific record in Preview mode, you can use the Find Tool button  and enter the data you wish to find.

Field Types

Field types include Text Objects, Database Fields, Formula Fields, Field Titles, Parameter Fields, Running Total Fields, Group Name Fields and Special Fields.

When the cursor is placed over the field boxes, field type information appears if *Tooltips* is turned on.

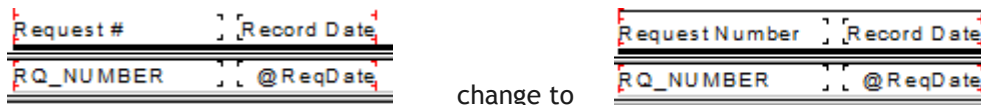
- If you place the cursor over the **Request #** box, *Text Object* appears. This means that **Request #** is a group of characters that can be modified. This is a column header that was manually typed in.
- If the cursor is placed over **RQ_Number**, it shows the table (WKREQ), field name (RQ_NUMBER) and data type (string). Depending on the age of the report the default field caption may also show. This Database Field is bringing in data from a table. In Field Explorer (discussed later) the previous tooltip information may show as well as the size of the string mask for the field.

Changing Text in Text Objects

In the example report, LC_ReqSum.rpt, we will change the text object field “Request #” to “Request Number”.

To change the text within a *Text Object*:

1. Double click on the box with **Request #**.
2. Click and drag over the portion you want to change (#).
3. Type the new text (**Number**) and click out of the box.



Field Sizing

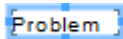
Sometimes it is necessary to resize or delete existing fields to accommodate additional text or make room for a new field.

Resize a Text Box:

1. Click on the text object (**Problem**) which will highlight the borders of the box.
 - This will activate the sizing handles, the small dark dots on each side of the box.



2. Place the cursor over the right border's mark which will turn the cursor into a two sided arrow. Click and drag the box to the left to reduce the empty space.



Resize a Field:

1. Click on the field (**RQ_PROB_TY**).
2. Click on the right sizing handle and drag to the left (to about 7.5" in the top ruler).

Deleting a Field

Delete a Field:

1. Click on the field (**RQ_PRTY_TY**) to highlight it.
2. Press the Delete key

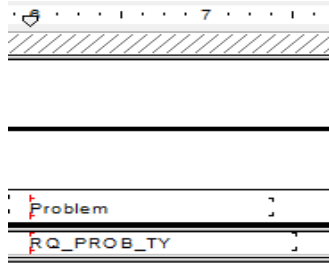
OR

Right click in the field and select *Delete*

Field Movement

1. The simplest form of moving fields is by clicking on the field and dragging it to the new location.
 - a. Click on the **Priority** text object (resize to reduce the empty space).
 - b. Drag to the right until the left edge is aligned with the 5" mark.
2. Multiple fields can be moved by holding the shift key down while clicking on the fields. This will highlight the fields which can then be moved or sized or formatted all at the same time. The click and drag feature, as well as the adjustment of the box size, are done to the highlighted box with the four dark marks on the edges (anchor box). Multiple fields may be copied or cut as a unit as well.
3. Multiple aligned fields can be moved as a unit by "attaching" Guidelines to the fields. This can be done both horizontally and vertically using the rulers at the top and left side of the report (if this option is turned on).
 - a. In the top ruler, click near the 6" mark and hold, moving slightly if necessary, until the dotted line meets the left side of the **Problem** text box. Release
 - The left side of the text box will appear red and there is a pointed box in the ruler section.

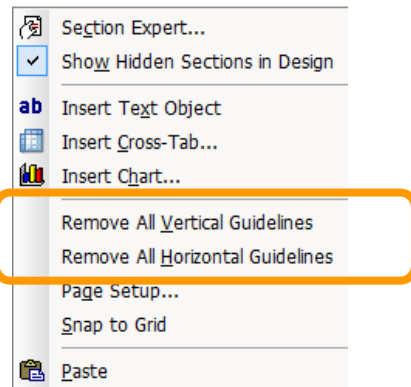
- b. The left edge of the **RQ_PROB_TY** field will likely be red as well but if not, click on the field and drag to attach the left side to the guideline.



- c. To move the fields attached to the guideline, click on the ruler marker and drag it to the new location. (about 6 5/8") This will move any fields attached to the guideline.

Note: Caution should be used with guidelines if there are a number of fields in the report. You may attach fields you had no intention of moving. This is a problem that can affect Lucy Detail reports.

- d. To remove a marker, click on it and drag it up and away from the ruler. Then, release your mouse.
- e. All markers can be removed with a right click in the ruler or body of the report and then selecting either *Remove All Vertical Guidelines* and/or *Remove All Horizontal Guidelines*.



Add a Text Object

Make sure there is room to add the text object.

In the example we will create space between the **Status Date** and **Priority**:

1. Reduce the size of the **Status** text object to close up the empty space.
2. Reduce the **RQ_STAT_TY** field (right edge to 3 1/4").
3. Move the **Status Date** text object and **@StatDate** field to the left (right edge 4 1/8").

This has opened up space to add a new text object.

4. Click (release - don't drag) on *Insert Text Object* **ab**. The cursor turns into a plus sign.
5. Click on the location where the box is to be inserted. Just to the right of the **Status Date** text object.
6. Type in the desired text (**Follow-Up**).
7. Click out of the box when you are finished.

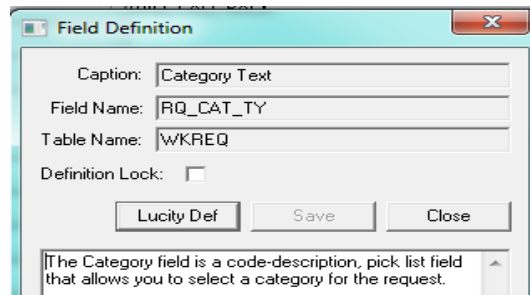
8. Resize to close up the empty space. In the example it is overlapping the **Priority** text object. It doesn't hurt anything but may hinder your design efforts later.



Adding Fields


To add a field, you may need to make room by moving or removing existing fields.

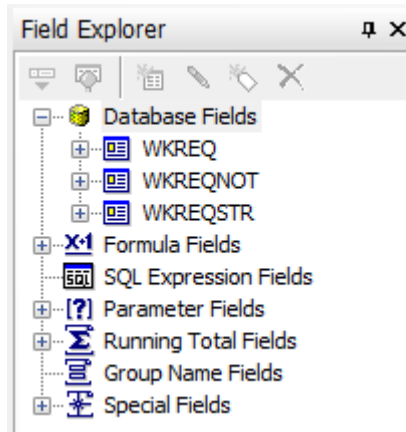
1. In our example, we'll change the "Priority" column to "Category".
 - o First, you'll edit the **Priority** column header to read **Category**.
 - The **RQ_PRTY_TY** field has already been deleted.
2. Now, you'll add the new "Category" field.
3. You'll need to find out the name of the "Category" text field.
 - a. Go back to the *Requests* module and locate the field that is to be shown in the report.
 - b. With your cursor in the field, press **Ctrl** and then right click.
 - c. Select *Field Definition*.
 - Some fields, including the Code field, have an additional option, *Field Properties*. This option offers additional information such as the field Mask and Editing options.
 - In the example, you can see that the table name is **WKREQ** and the "Category" field name is **RQ_CAT_TY**.



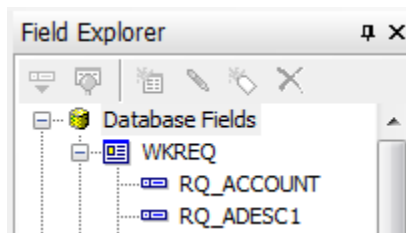
*Note: Sometimes fields that have a code box and a text box will only show the field definition of the code portion. The only difference with the text portion is that the field name would end in **TY** rather than **CD**.*

Sometimes if the box is pulling information from a different module, the field definition will not show up or the given field name may not be accurate. It may be a connecting field to pull the correct data from another table.

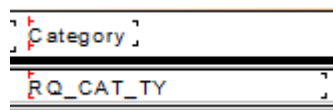
4. Return to the report. Then, complete the following steps to add the new field.
 - a. Open *Field Explorer*.  (Also under "View" in the top menu bar.) This may already be open on the right of the report.
 - b. Open *Database Fields* (click on the + sign).



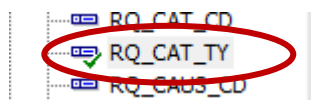
- c. Open the **WKREQ** table (click on the + sign).



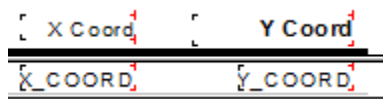
- d. Click and drag the **RQ_CAT_TY** field and place it in the *Detail* section under the **Category** column heading.



When a field is used in the report, a check shows up next to it in the *Field Explorer*.

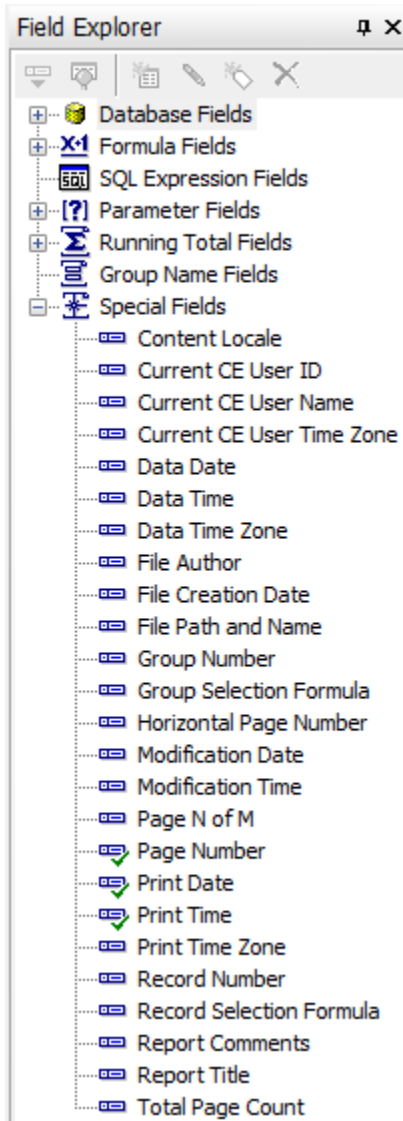


- 5. We will now add the X and Y Coordinate fields:
 - a. Change the **Address** text object to **X Coord**.
 - b. Reduce the box width to close up the space.
 - c. Add another text object called **Y Coord** to the right of the **X Coord**.
 - d. Right align both the **X** and **Y Coord** text objects.
 - e. Delete the **@Location** field.
 - f. Add the appropriate fields below the **X** and **Y** column headers.



Special Fields

There are a number of “Special Fields” that Crystal Reports provides. In Field Explorer expand *Special Fields*.



The report is currently using **Page Number**, **Print Date** and **Print Time**. If the *Summary Info...* (from File in the toolbar) had been filled out for the report then several of these fields would have been available to bring into the report (**File Author**, **Report Comments** and **Report Title**).

The **File Path and Name** could be a helpful field to place in the Report Footer. This would tell you exactly where the report is located and the exact report name (**LC_ReqSum.rpt**).

Copying Fields

A field that is used in a report can be copied and used elsewhere in the report. There are various methods for doing this.

- Click on the field(s) and:
 - Right click *Copy* and then right click *Paste* to the new location.
 - Or - Ctrl C to copy then Ctrl V to paste in the new location.
 - Or - for a single field - hold Ctrl, click and drag to new location and release.

Formatting Fields

General Formatting

If you want a field to stand out, there are various tools you can use. You can change the lettering size, font, or color of the text as well as change it to **boldface**, *italics*, or underline. The options are located in the Formatting Toolbar (pictured below).



Formatting can also be accessed by right clicking on the box and selecting *Format Text...* (For a text object) or *Format Field...* (For a field with data).

- Click on the box containing the text you wish to change. Then, select the options to be used.
- If partial text is to be changed, double click on the box and then click and drag over the part that is to be changed.

Note: For Web reports avoid the use of the Calibri font. There are issues with viewing the report as PDF.

In the example report change the column header text objects to be **Bold**.

1. Hold the shift key down and click on all boxes that need changing.
2. Click on the **B** (for bold) in the toolbar.
3. Resize any boxes to accommodate the bold text.

Preview the report.

Request #	Record Date	Status	Status Date	Follow-Up	Category	Problem	X Coord	Y Coord
2006-00013	4/5/2006	Completed	6/12/2006		Commercial Collection	INFO REQUEST - COMMERCIAL	43.64	-116.24

The X and Y coordinates are showing with two digits to the right of the decimal and the actual values in the record require 8 digits.

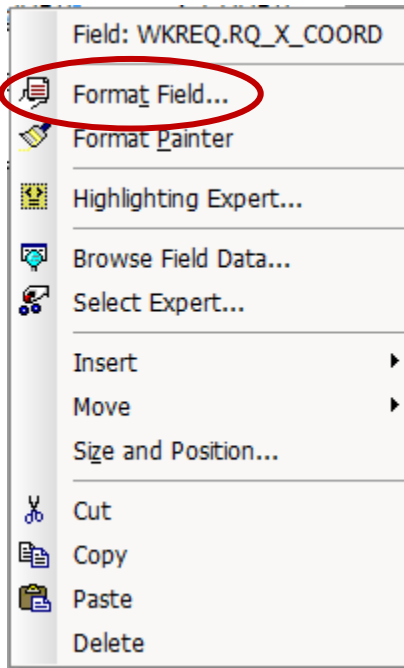
Loc X Coord.	43.63871944
Loc Y Coord.	-116.24135134

Number Formatting

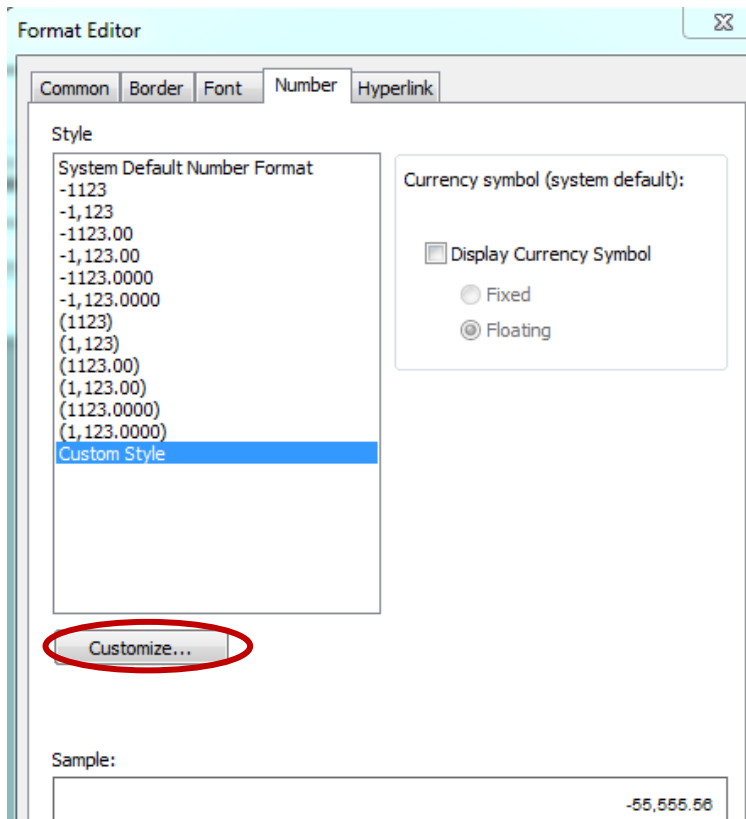
Number fields may require formatting for many reasons such as decimals, rounding, negatives, field size where the value is showing ##### or the numbers are cut off. The field size can either be increased, or the field can be reformatted to remove the decimals.

To change the format of the **RQ_X_COORD** field:

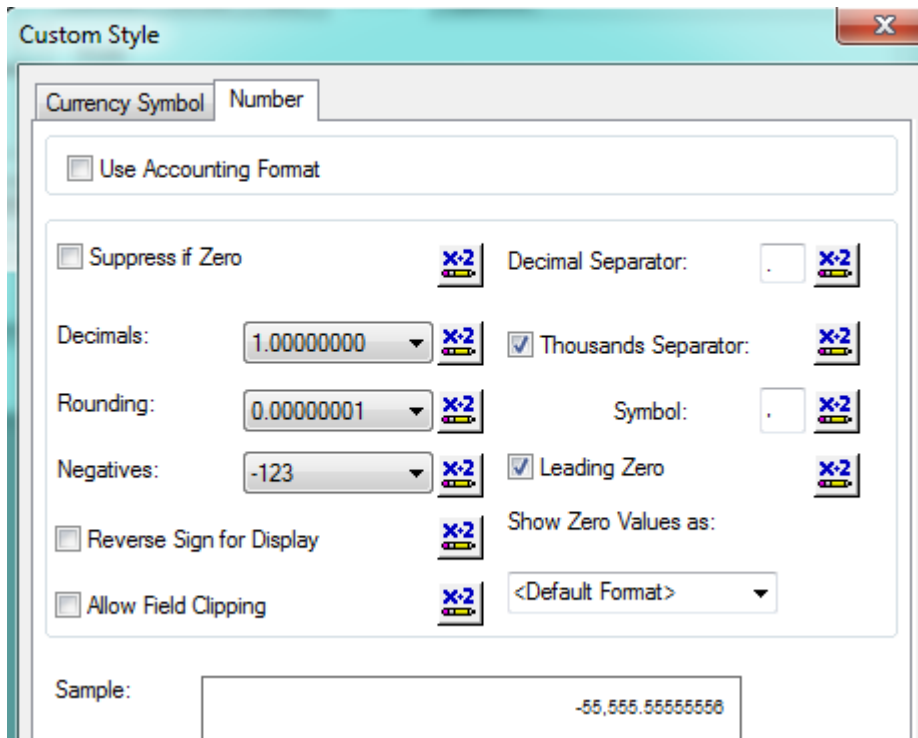
1. Right click on the field and select *Format Field...*



2. Click on *Customize...*

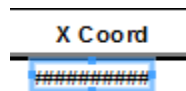


- Click on the down arrow next to “Decimals:” and select the correct option for the number of digits.
- Repeat for “Rounding”.



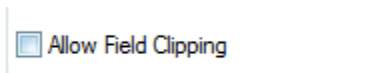
- Select *OK* to close the *Custom Style* dialog.
- Select *OK* to close the *Format Editor* dialog.

In the preview tab the X Coordinate value is now showing:



- Increase the field size with the sizing handles on the field.


Another issue that sometimes occurs is the clipping of numbers. This is where you see incomplete numbers instead of the ###.##. This is not recommended. This option is located in the Custom Style dialog box.



Make sure the “Allow Field Clipping” box is **NOT** checked.

Copying Formatting

The Y Coordinate will need similar formatting. The *Format Painter* can be used to copy the X Coordinate formatting onto the Y Coordinate field as follows:

1. Click on the **RQ_X_COORD** field.
2. Select the *Format Painter* in the *Standard Toolbar*  .
3. Click on the **RQ_Y_COORD** field.
4. Increase the field size to accommodate the additional digits.

X Coord	Y Coord
43.64000000	-116.24000000

Note: Many cost fields within Work reports are fields that will be “Hidden” if the person running the report does not have the proper security. The way this is achieved turns the number field into a “Text” type field thus normal “number” formatting does not work on these fields.

Alignment of Fields

1. Shift click on all fields to be aligned.
2. Right click on the field you want to size and align with, the darker markers will show up on the field you select.
3. To size, click **Size > Same Height**.
4. To align, repeat steps 2 and 3, clicking **Align > Tops** (or Bottoms, see what looks better).
5. Do this for both the Column Headers and fields in the Detail section.

Note: If a section has only a single line of fields, then all fields can be selected by right clicking in the left margin of the section and selecting “Select All Section Objects”. This option wasn’t available in our example due to the line in the Detail section.

Using Formulas

Crystal provides a way to create formulas that can be used in record selection, conditional formatting, conditional suppression and calculations to name a few.

Date and Time Fields

In Lucity the date and time fields are a *DateTime* type field. If the Date field is brought in directly with the Options (File > Options > Fields > Date and Time... > Date and Time) set as *System Default Short Format*, the date field when brought directly into the report will look like this:

2/20/2014 12:00:00AM

The time portion is not a good value.

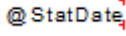
In the same way the Time field will look like this:

1/1/1900 12:01:00PM

The date portion is not a good value.

In File > Options > Fields > Field format the **Date and Time** type field could be set up to always show a date (without time) but then the time field would also show as a date.

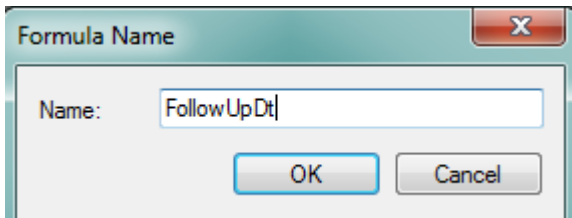
Each field's format can be set case by case to either show the date or time portion but the best practice is to handle the *DateTime* fields with a formula. The formula will take out the required portion of the field.

Note: Formula fields begin with the @ symbol like the Status Date .

Date Fields

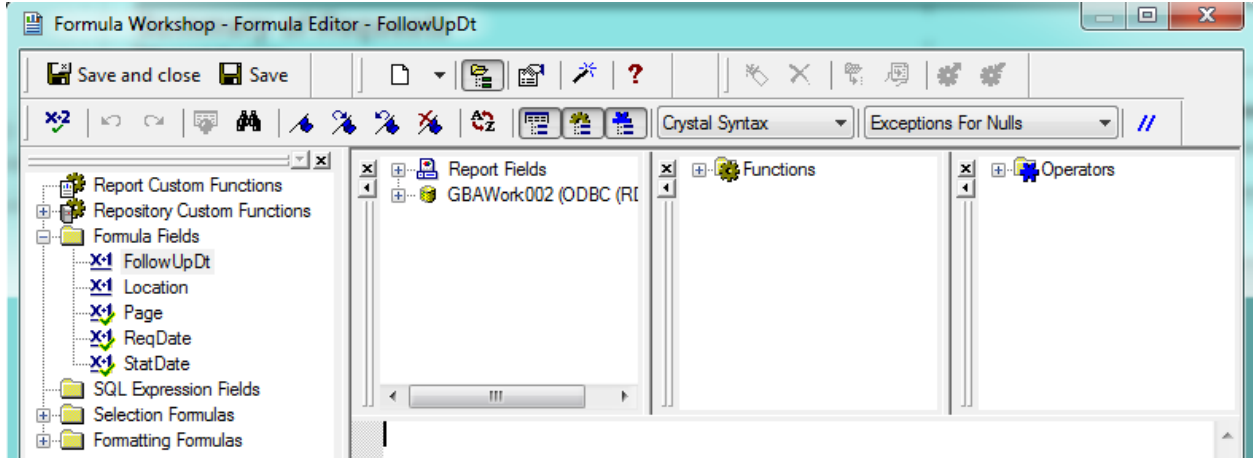
In our example, we will add the **Follow-Up Date**.

1. Within *Field Explorer*, right click on *Formula Fields*.
2. Select *New*.
3. Type in the name. For our example, we've entered "FollowUpDt".



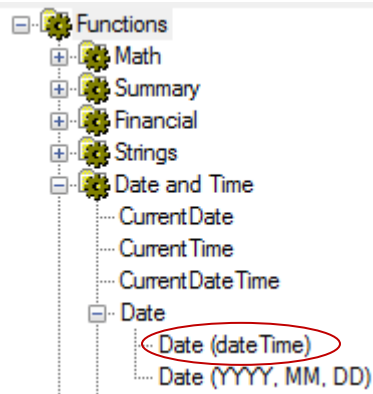
4. *OK*

This will open the Formula Workshop.



It would be helpful to have the *Hide/Show workshop tree* highlighted  as well as the *Field Tree, Function Tree and Operator Tree*   .

5. Expand the *Function Tree*, Click the plus sign (+) in front of *Functions*.
6. Expand *Date and Time*.
7. Expand *Date*.
8. Double click the *Date(dateTime)* option.



9. The following formula will show up in the lower box:

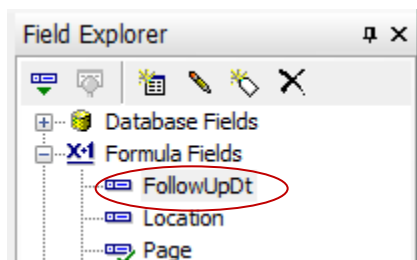
Date()

10. In the *Field Tree* expand the ODBC database. In this case it is **Work**.
11. Expand the **WKREQ** table.
12. Make sure the cursor is flashing between the Date parentheses in the formula box, then in the *Field Tree* double click **RQ_FLLW_DT**.
13. The final formula will look like this:

Date ({WKREQ.RQ_FLLW_DT})

14. Click *Save and close*.

The new formula will now show under the *Formula Fields* in *Field Explorer*.

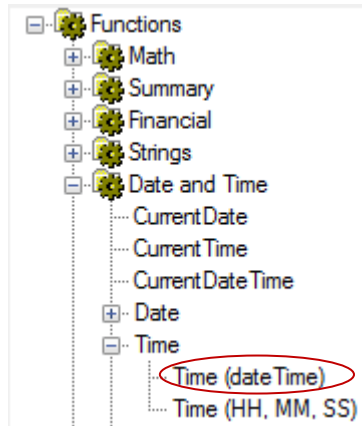


15. Drag the new formula field into the *Detail* section, under the **Follow-Up** column header.



Time Fields

A Time field which is also a DateTime type of field should also be set up in a formula. It would be created like the date formula except in the *Formula Workshop* in the *Functions Tree* the Time option would be used to create the formula.



Note: Once the date has been pulled from the DateTime field in the Date formula it will follow the formatting in Options for Date. In a like way the Time formula will now format as a Time field. This can be changed in a general way out in Options or specifically with the right click Format Field... option.

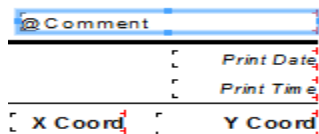
Note: Formulas created in the Formula Workshop can be typed in without using any of the "Tools". The Tool Fields, Functions and Operators may also be dragged in as opposed to double clicking.

Documentation Comments

Comments can be made within the Formula Workshop to help with documentation. The comments can be in a separate formula documenting all of the changes for the report or they can be specific comments to a formula. Each line of a comment must be preceded by two forward slashes //. This will change the font color (default green can be changed in *File > Options > Formula Editor*).

A general comment will be added to the example.


1. Right click on *Formula Fields* and select *New*.
2. Type in "**Comment**".
3. In the lower section, type //.
4. Next, type whatever clues you need to remember what was done. We'll type:
"Removed Priority and Address. Added Follow-Up date, Category, and X & Y coordinates."
5. Select *Save and Close*.
6. Drag the **Comment** formula to whichever section you will see it, like the *Page Header*. This will not show up in the Preview mode of the report but it is there for you to reference in the future.

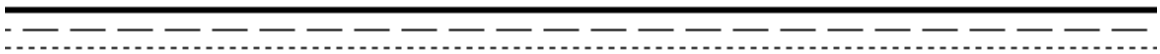


Inserting Lines and Boxes

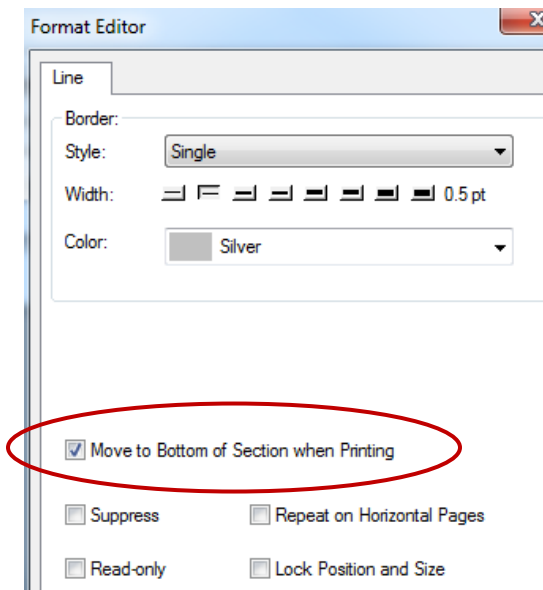
Lines

When reports have a great deal of information, it is often helpful to use lines to break up the data. This makes it easier to read.

1. Click on *Insert Line* . This turns the cursor into a pencil.
2. Place the pencil point wherever you would like to insert the line in the report. Then, drag the line across the screen until you have reached the desired length.
3. The line characteristics can be modified by right clicking on the line and selecting *Format Line*.
 - Several line samples appear below



4. If any of the fields above the line are able to grow then in the *Format Line* dialog (right click on the line) select “Move to Bottom of Section when Printing”.



This usually solves any growing issues, but sometimes the line should be given its own section instead.

- A new section can be added by right clicking in the left margin next to the section and selecting *Insert Section Below*. These options can also be selected by typing the underlined letter.

Insert Section Below


The “I” is underlined.

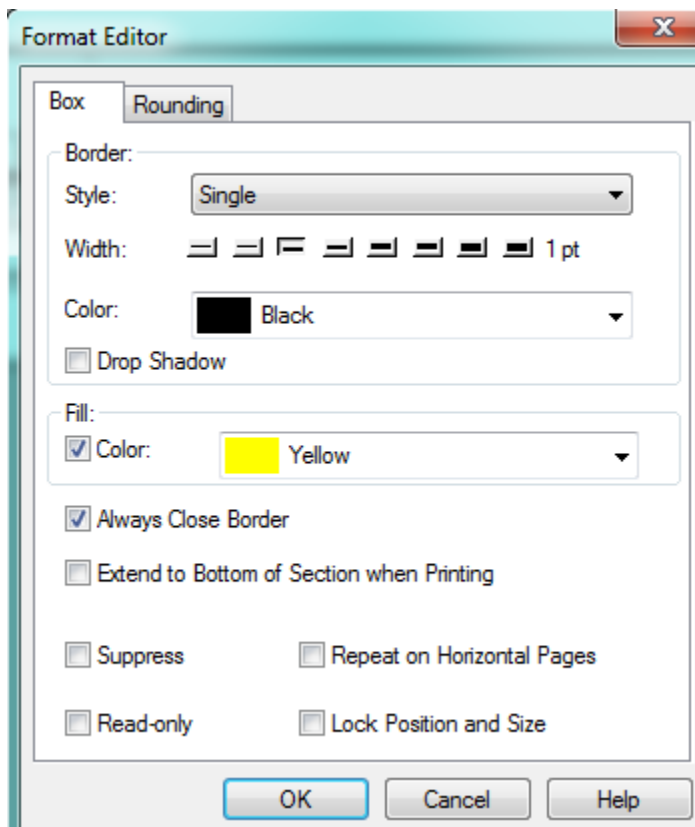
All Crystal sections allow multiples. They will show with a letter behind the section designation.

Example: Details a, Details b, Report Footer a, Report Footer b...

Boxes

Another option is enclosing data in a box. In the example we will place a box around the **Total Requests** text object and field (**#TotReq**) .

1. Click on Insert Box  . This turns the cursor into a pencil.
2. Place the pencil point wherever one corner of the box should be (top left of **Total Requests** box) and then drag diagonally to the other corner (bottom right of **#TotReq** box) and click.
3. Right click on the box line and select *Format Box...*
4. Select *Fill:>>Color:*
5. Use the drop down arrow to select Yellow.
6. Click *OK*



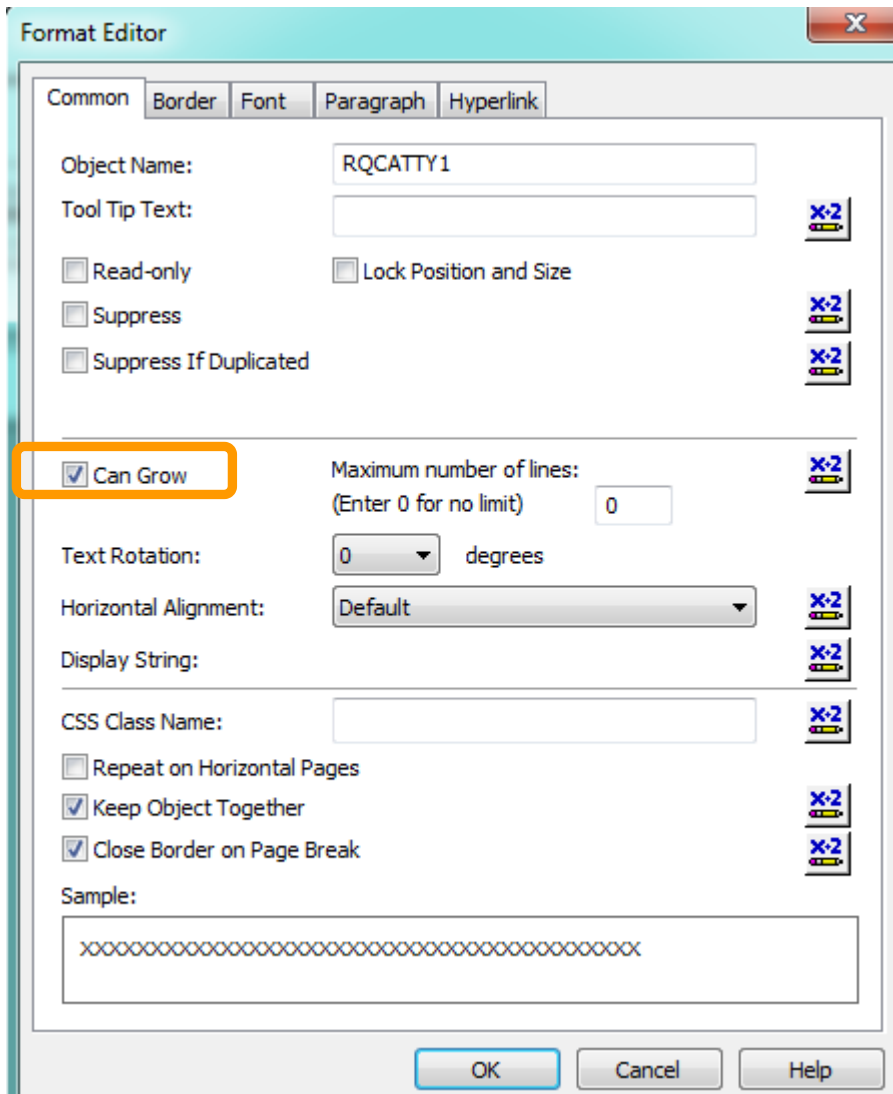
Total Requests #TotReq

“Growing” Fields

Sometimes the data in a field is cut off and there is no more horizontal room to increase the field size. In this case, it is helpful to allow the information to be shown in multiple lines. This can be done with the “Can Grow” option.

To add or delete the “Can Grow” option, complete the following:

1. In the example, right click on the field (RQ_CAT_TY).
2. Select *Format Field*.
3. On the *Common* tab, check the *Can Grow* box.



Report Manipulation

Lucity typically provides a Summary report and a Detail report for each module. The Summary report is great for a quick overview of many records. The Detail report usually shows all of the fields within a module. It is much easier to delete fields and sections and move things around than it is to add information. We'll go over the steps to manipulate a report below:

1. Copy the **ReqDetail.rpt** report. This copy is just to “play” with so does not need to be exported or saved. (Copy and Paste)
2. Open **ReqDetail - Copy.rpt**.
3. Removing Sections:
 - If a section type has multiples (a, b, c...) then all but one may be removed by right clicking to the left of the report section and selecting *Delete Section*
 - Right click on the left margin of the **Detail g** section and select *Delete Section*. The **g** section is removed and the **Details** sections will now rearrange their lettering. The old **h** section is now **g**.
 - Some Sections cannot be removed but the information within them can be deleted.
 - Right click in the left margin of the **Page Header** section and choose *Select All Section Objects*.
 - Then press delete.
 - Another option is to suppress a section.
 - Right click in the left margin of the **Detail c** section and choose *Suppress (No Drill-Down)*.
4. Moving fields around within a report can be challenging. In this example, **Detail a** section, we will move **Home Phone** and **Work Phone** up to just below **Phone Number**.
 - a. To make room for these fields, place the cursor to the left of the report on the right edge of the ruler strip where the field is to be inserted. You'll see a single line with double arrows.
 - b. Click, hold, and slightly wiggle, pulling to the right as you release to create a section break.
 - c. Click and drag the section break line to make room for the new fields.
 - d. Hold the Shift key and click **Home Phone**, **RQ_HM_PHN**, **Work Phone** and **RQ_WK_PHN** to highlight the fields to be moved.
 - e. Click and drag the fields beneath **Phone Number**.
 - f. Right click in the **Details** section next to **Phone Number** and select *Merge Section Below*.

Note: The Merge function may have caused the check next to Do Not Disclose to “disappear”. Right click on the check box and select Move >> To Back.

5. Report sections can be switched by clicking and dragging to the new location.
 - Click and drag section **Dk** to beneath **Da**. This is now the new **Db** section.
6. The report page orientation is another way to add room or shrink a report. Landscape mode is always helpful if you need to add a couple of fields or see all of the text on one line. This option is found in *File > Page Setup. . . > Orientation*.

Removing Parameters

Parameters are special fields that query the user for information to be used in the report before the report will run. Common parameters used in Lucity reports include *subtitles* and *date queries*.

- These can be removed by clicking on the Parameter field and selecting *Delete*.

The report no longer uses the parameter field, but the parameter exists in *Field Explorer*. Unused parameter fields have been an issue in some of the Web reports.

To permanently remove the parameter field in *Field Explorer*:

- Right click on the specific parameter field and select *Delete*
- OR
- Click the parameter field and press the delete key.
- Parameter fields are recognizable by the “?” at the beginning of the field:

?Report Subtitle

Inserting an Agency Logo




Summary of Requests

You may want to have your agency logo appear on your customized reports. This helps identify the report as one of your own.

The image to be added to the report should be a **Bitmap, TIFF, JPEG or PNG** type.



To insert an agency logo in our example report (**LC_ReqSum.rpt**), complete the following steps:

1. You may need to make space in the report for your logo.
 - a. Right click somewhere to the left of the report in the **Page Header** section and select *Insert Section Below*.
 - b. In the new **PHb** section left margin, click and hold, the cursor should turn into a hand.
 - c. Drag up into the **PHa** section and release. The two sections have switched places.
 - d. Place the cursor over the line between sections **PHa** and **PHb** (it should turn into double horizontal lines with an arrow pointing up and one pointing down).
 - e. Click and drag down to increase the **PHa** section size so that it can accommodate the logo.
2. To insert a logo into the **Page Header a** section, perform one of the following steps:
 - Click on *Insert* and select *picture*.
 - OR
 - Click on the *Insert Picture* icon .
3. Then browse out to the location of your logo file and double click to add it to the report.

4. You can resize the logo by clicking and dragging the corners and edges. You can change the placement of the logo by clicking and dragging the entire picture.
5. Resize sections as necessary.
6. Finally, right click in the **Page Header a** section and select *Merge Section Below*. You now have one **Page Header** section. *Save* and Close the Report.

Adding a Report to the Module

To use any new or revised reports within Lucity, you'll need to add them to the module where you wish to view them. The reports need to stay within the "family" for which they were created. For example, you may not run a Work report in Sewer modules.

1. Open the desired module. (ex. **Requests**)
2. Click on *Reports* .
3. Select *Add*.
4. Click on the box with three dots  next to *Report File Path*.
5. Find the report directory with the new report and double click on the report (LC_ReqSum.rpt).
6. Enter the report name and give it a description.

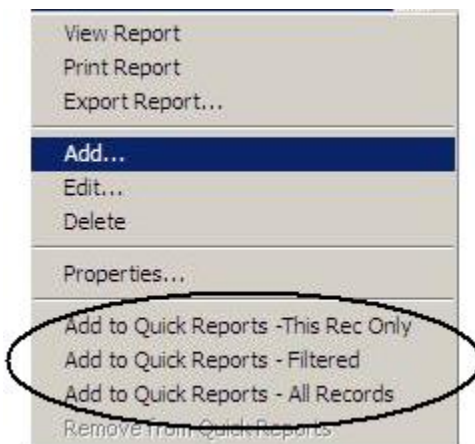
Report Name:	Request Summary Report
Description: [255 characters Max]	Request summary with Category, Follow-Up, and X & Y.


7. Select *Save*. This report is now available to be used within the module.

Accessing Reports in Lucity

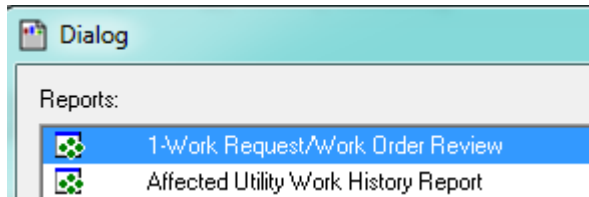
Within a module you may use any of the reports available in the reports dialog box. Frequently used reports can be added to the Quick Reports option (drop down arrow next to the Report icon). This can be set up in the Reports dialog.

Right click on the Report Title and select the type of Quick Report you would like saved. This setting is on a User Login basis. This allows various users to set up their own Quick Reports in whichever manner they'd like to see them.



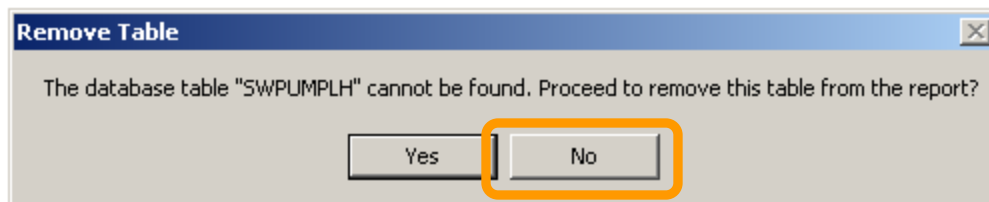
The report will be displayed with the hand  icon before the report name.

Another means to access a frequently used report is to simply add a number in front of the name to bump it to the top of the list.



Datasource

If standard reports are copied and pasted instead of exported and then run or verified in the Crystal software, the original Lucy connection information is maintained, but the connection information specific to the customer's database won't be available. Thus, the report will be unable to find the proper database tables. You should receive a warning message similar to the following - Select **No**:



If you receive the warning message displayed above, you have the following options:

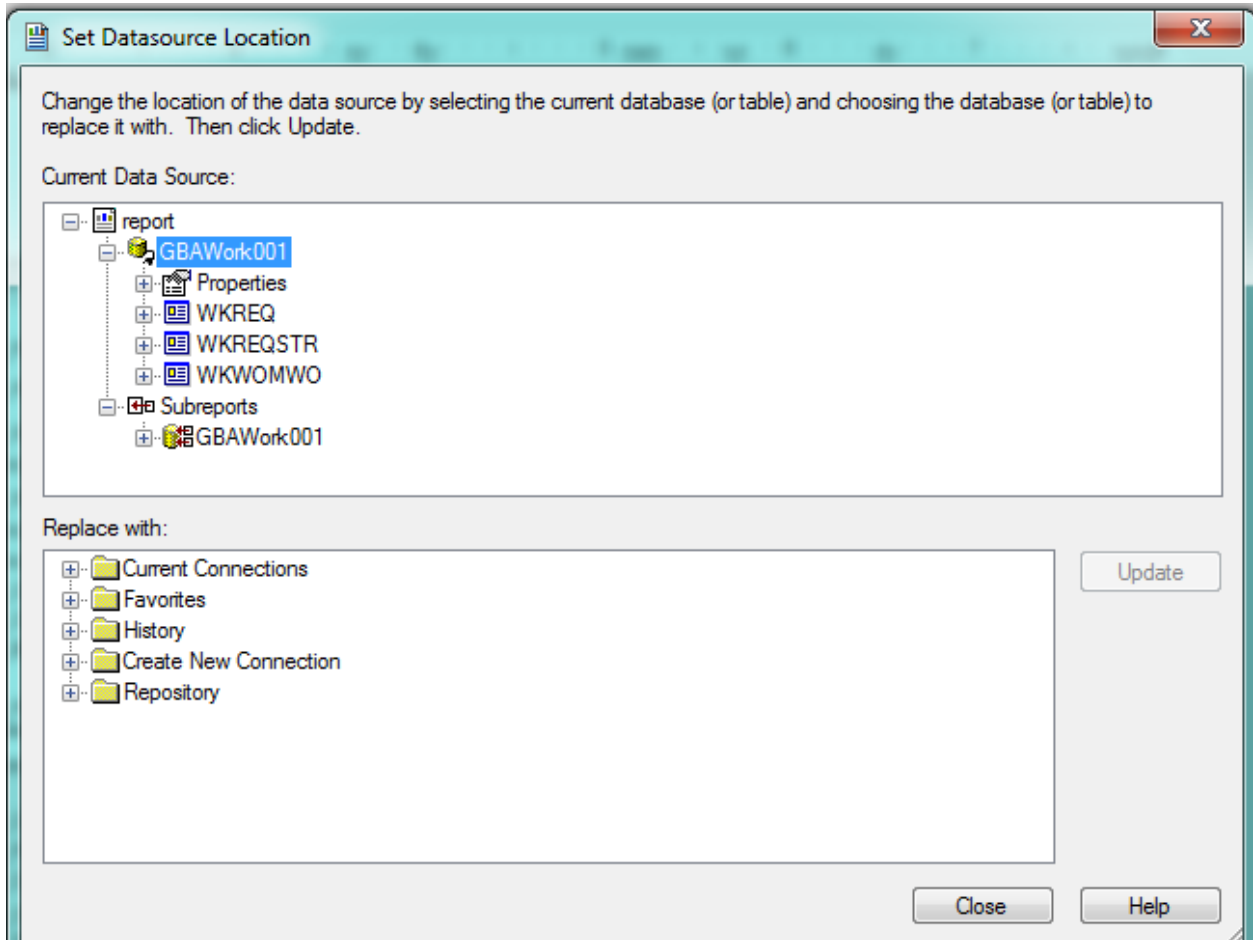
- Delete this copied report and export the report from the Lucy module. This process was explained previously.
- You can manually point each table in the report to the correct datasource.
- You can Batch Verify - only available with the Development version of Crystal XI. (Not discussed)

The above options will re-point the connection strings. This will allow you to run the report in Crystal Reports, which is the quickest way to test the report modifications.

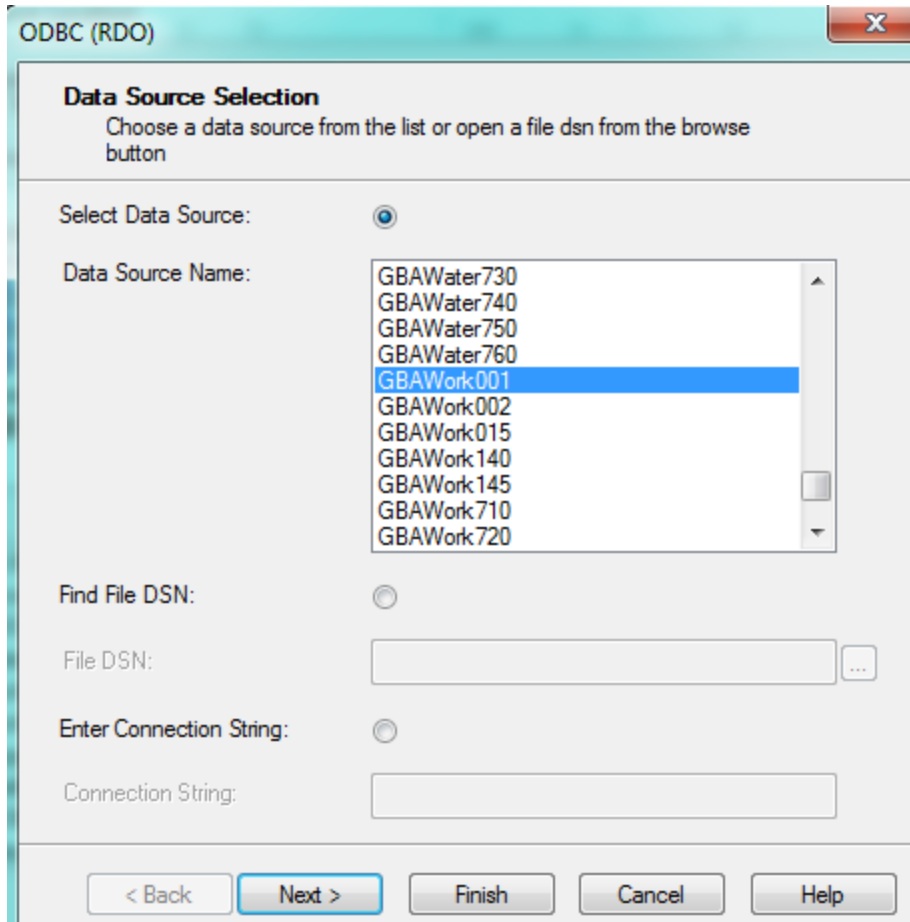
Set Datasource Location

Below, we've described the steps needed to set the Datasource Location for reports with database connectivity errors. Remember, you'll need to complete these steps if you've performed a "Save As" or copied and pasted a report and received a warning message informing you that certain database tables could not be found.

1. Within the open report, click on *Database* in the toolbar at the top of the screen.
2. Click on *Set Datasource Location*. The following dialog will appear:



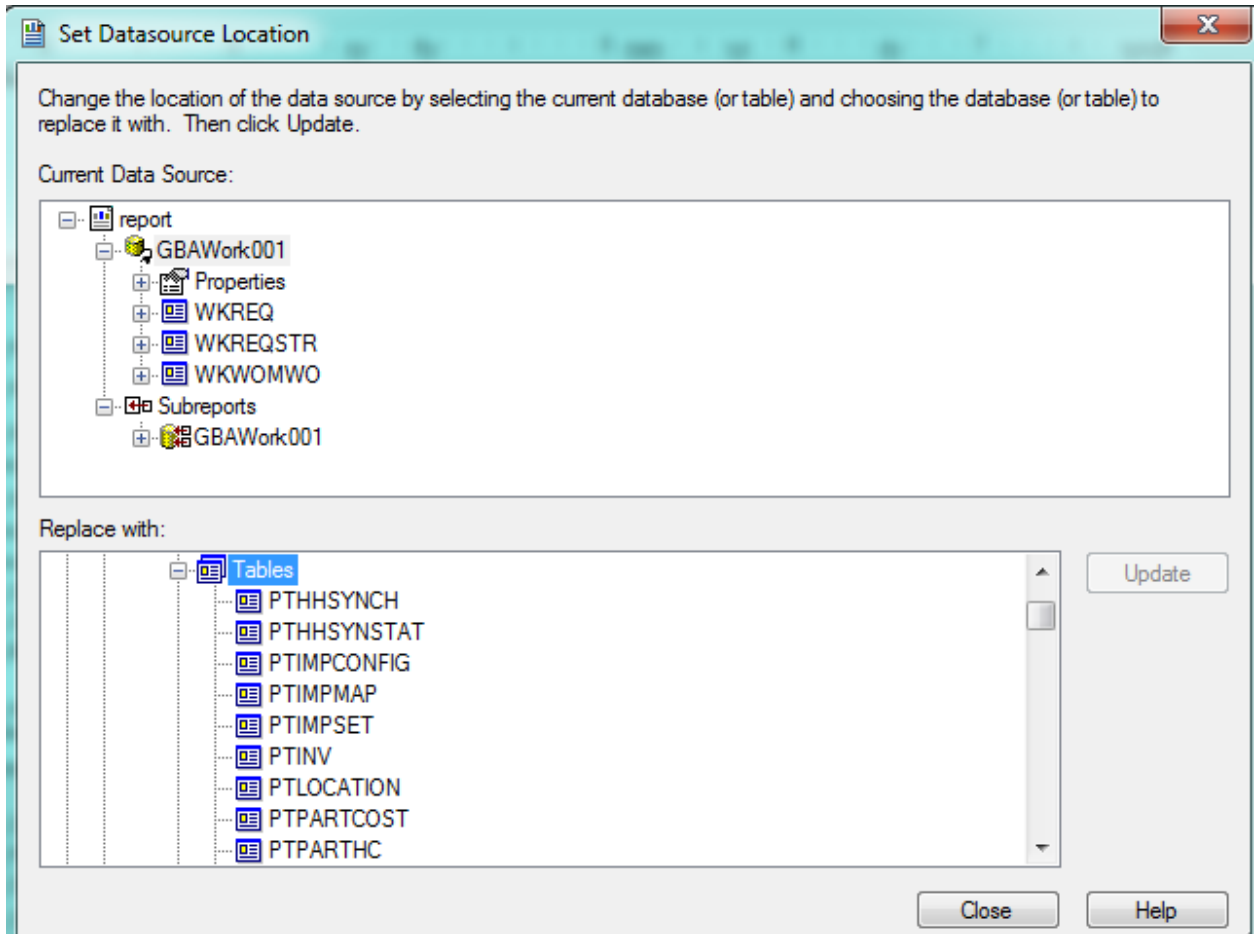
3. In the bottom window, open the *Create New Connection* folder
4. Open *ODBC*. You'll see the dialog displayed on the following page:



5. In the ODBC dialog, click on the correct Datasource name and then click *Finish*.
 - o For example, here we've selected GBAWork001.

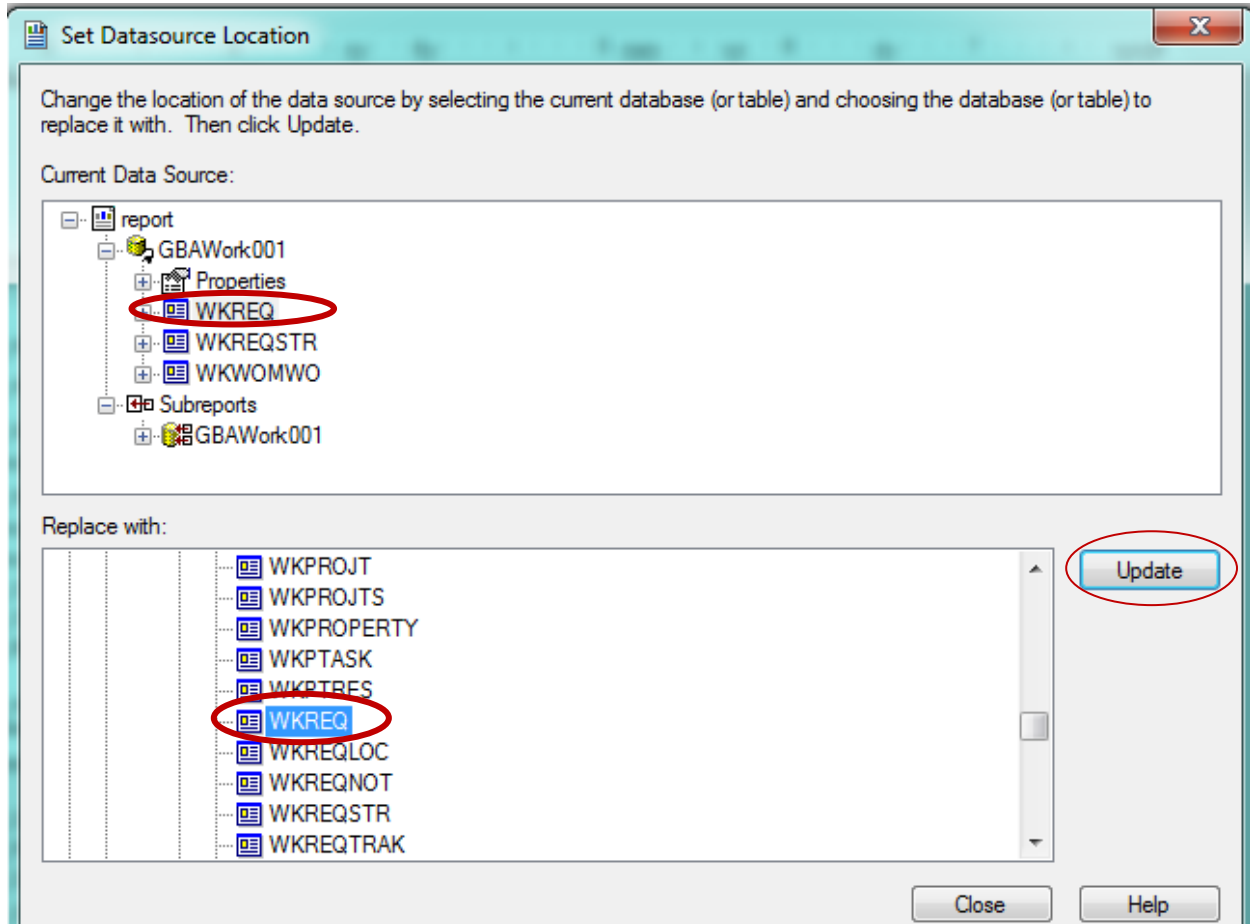
Notes: _____

6. You'll return to the Set Datasource Location dialog. Now, open **Tables** in the bottom window.



Notes: _____

7. Next you'll have to click on each table in the top window (*Current Data Source*) and find its match in the bottom window (*Replace With*). Click on the matching table name and then press **Update**.
 - o As you can see in the example below, we've selected the **WKREQ** table in both windows.

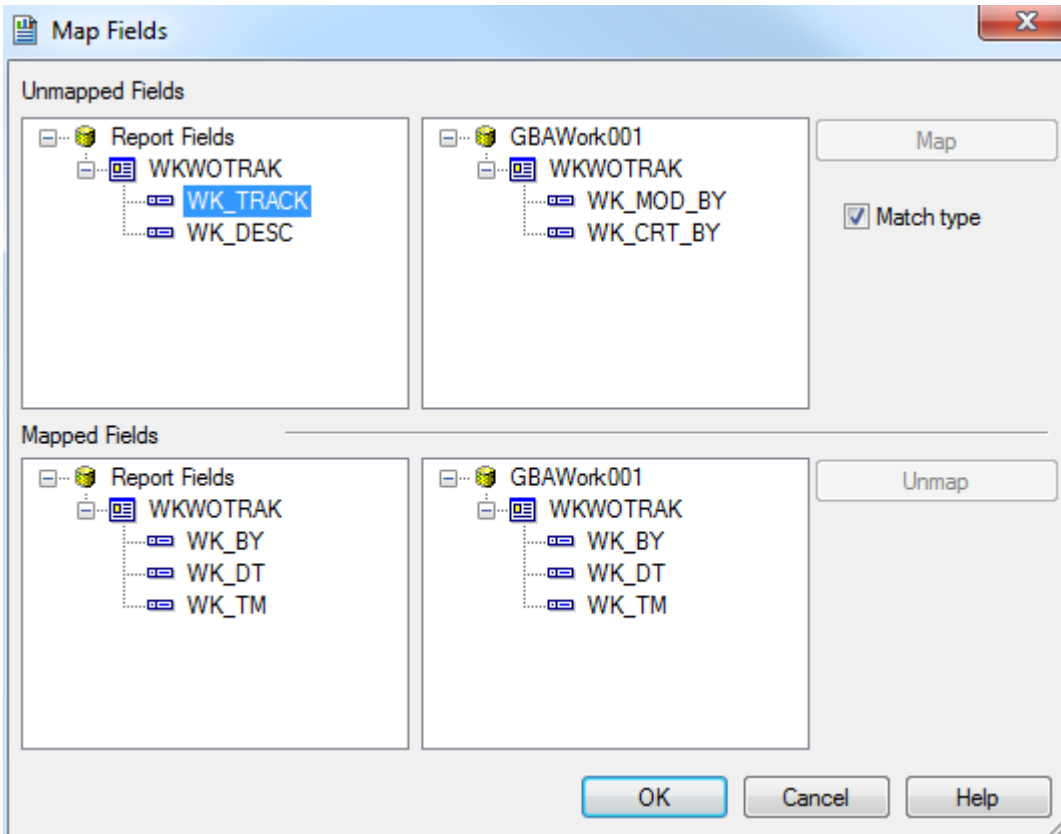


8. After updating each table listed in the top window, click *Close*.

Note: Make sure to perform these steps with the Subreport tables as well!!

*Note: If the matching table names don't appear in the bottom window, open the **Synonyms** or **Views** tables and look for them there.*

- If a field type has changed or been removed from the table since the report was last updated then there will be an issue with Field Mapping and you will see something similar to this:



- Sometimes unchecking the “Match type” checkbox will show the field to Map To but sometimes it doesn’t.
- In Lucity 7.5 **Work** module > **Tracking** grid, the Tracked *Item* and *Description* fields were changed from a *Text* type field to a *Memo* type field. There was no option to match the Unmapped Fields to so selecting *OK* allowed the rest of the mapping to complete. When going into the Tracking subreport, these fields had been removed.

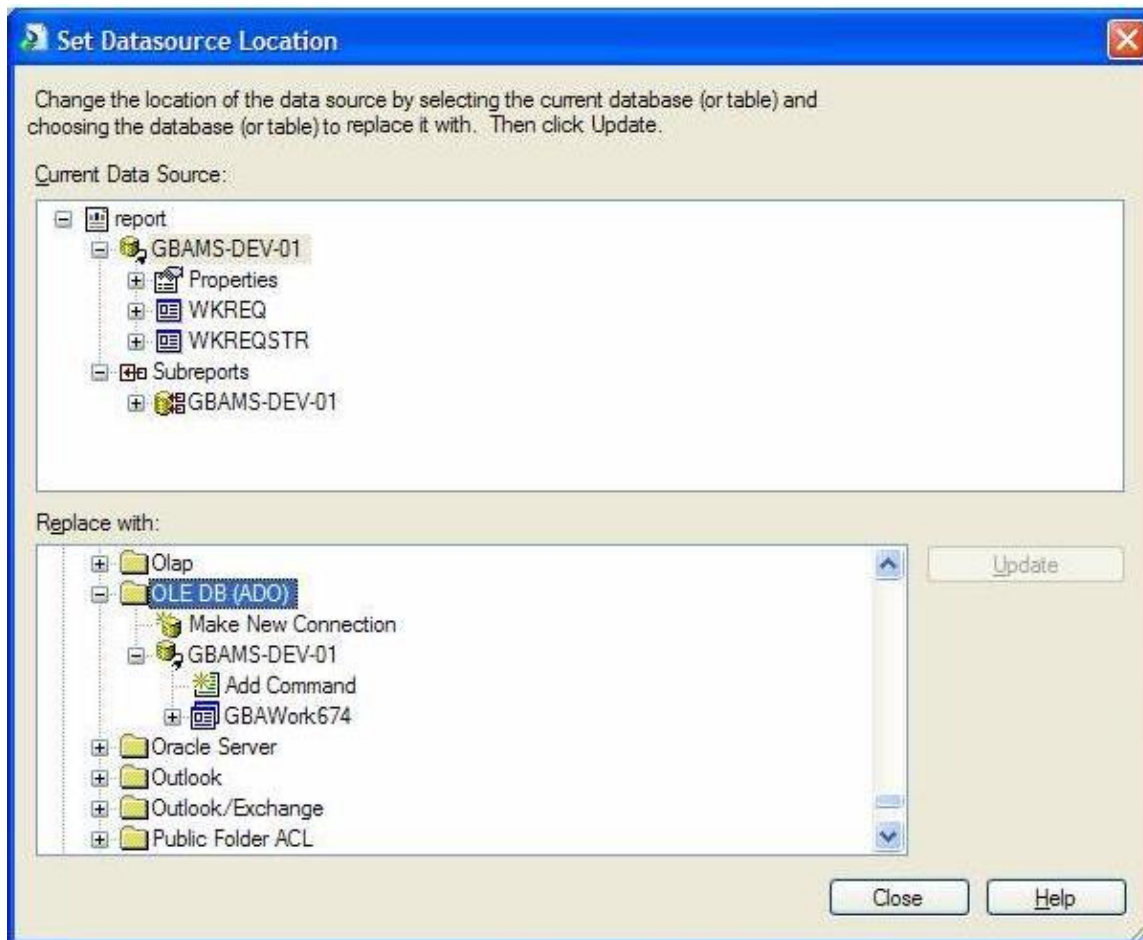
Item	Tracking	Description	By	Date	Time
			WK_BY	@ On	@ At

- These fields needed to be manually brought back into the report with the new field types. The fields have the same name; they are just a different type of field that allows more data.

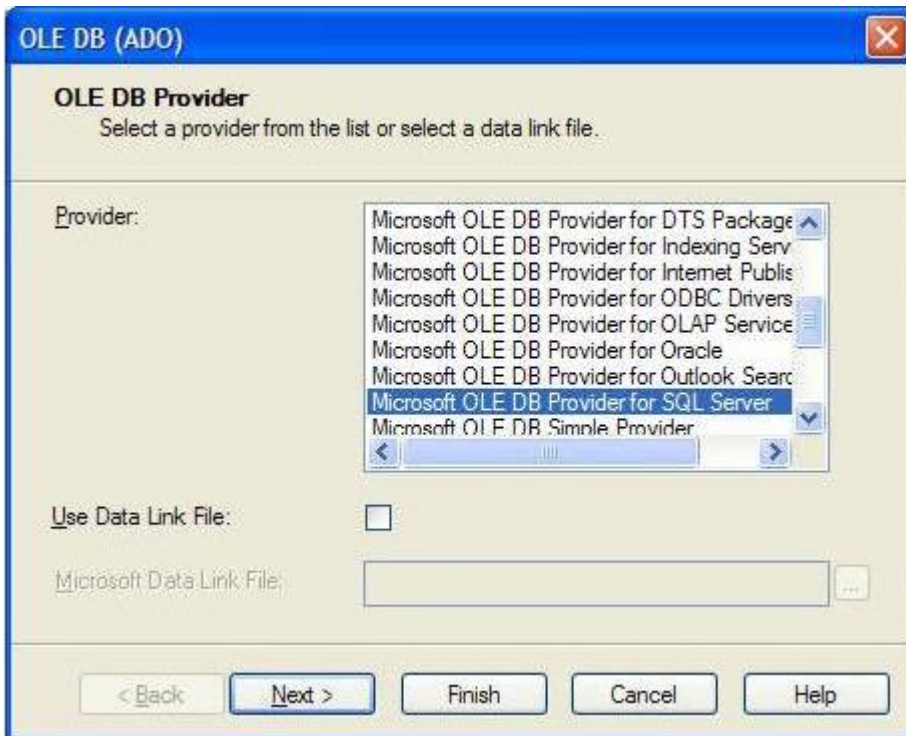
Converting Desktop Reports to use in the Web

Custom Reports that have been created for the desktop version of Lucity will NOT work in the Web application as is. To convert a report from a standard Lucity report to a Web report, complete the following steps:

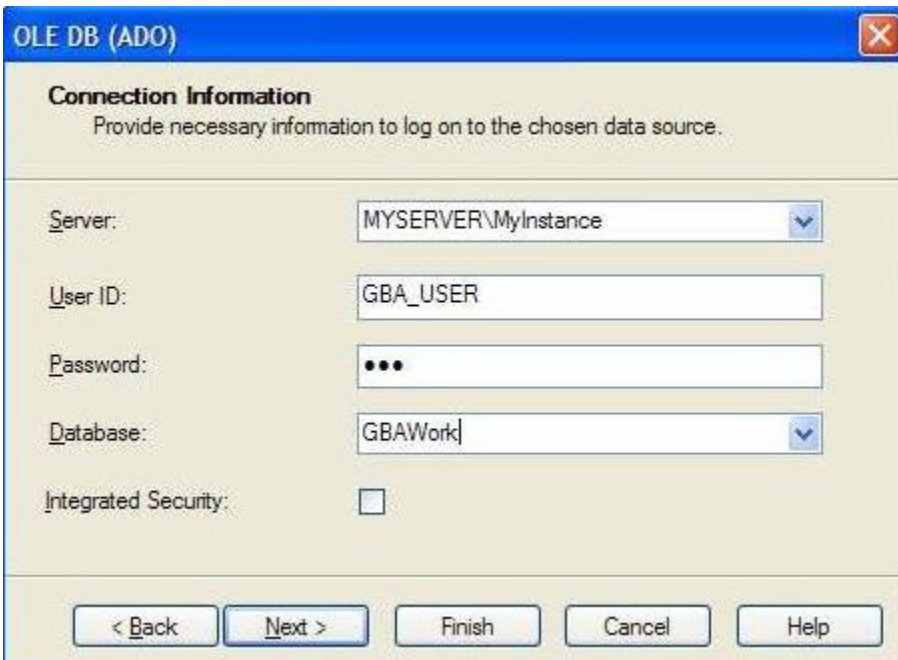
1. Open the report in Crystal Reports.
2. Go to Database>>Set Datasource Location.
 - o SQL Server Clients select OLE DB (ADO)>>Make New Connection.
 - o Oracle Clients select Oracle Server.



3. If you are using SQL Server you will then be prompted to select a provider. Use the Microsoft OLE DB Provider for SQL Server as shown below.



4. Next, enter the Connection information.
 - o For SQL Server, include the SQL Server Name, User ID, Password, and Database.



- For Oracle, include the Service, User ID, and Password.

5. Once you create a connection you will need to individually (manually) map every table from the report one at a time. Don't forget the tables in the Subreports!

Note: Reports must be posted to the web server in the \Reports directory in order to be available online. There you will see sub-directories such as \Equip\ or \Work\. Reports should be placed in the appropriate sub-directories.

Custom Web Reports Version 2015 (sp 1)

The Lucity software is moving the web design to be used as Software As A Service (SAAS). To accommodate this direction, the Custom Web reports will be handled differently than in the past.

There are two locations that Lucity will now use to manage custom reports.

- One is a new folder that can be seen in **inetpub > wwwroot > LucityWeb** that is called **ReportsCustom**. The client should never be in this folder.
- The other is a new location that the client sets up. Once this is set up and the existing reports moved into this new folder then this folder should not be directly used by the client unless copying a report to be modified. Indirectly, the new custom reports will be uploaded to this location.

The existing custom reports were supposed to be working with the upgrade but did not quite make this transition correctly. There have also been some issues relocating the established custom reports and updating the new path. Support has established the best method for handling custom web reports is to add them into the system as if they were new reports.

1. If the client doesn't currently have a location outside of Lucy to store and work on custom reports then this should be established first.

It might be a good idea to have one shared file for all custom reports for your company. This is separate from Lucy!

All existing custom reports currently in `wwwroot\LucyWeb\Reports` should be placed in this new folder or subfolders in this location.

Example folder name: **CompanyCustomWebReports**.

2. A second location needs to be established which Lucy will use. This needs to be a folder that the WebServer (IIS) can get to. Ideally, this would not be on the web server. That means it will be on a network share. Something like \\<Servername>\Shared\CustomWebReports or N:\Shared\CustomWebReports .

Example: N:\WaterGroup\CustomWebRpts15

Where "N" references the server, "WaterGroup" the Shared location and "CustomWebRpts15" the folder name for the custom web reports.

3. This path then needs to be entered in:

Lucy Administration Tools > System > Settings... > Documents tab > Path where Reports are stored. Enter the new path for the Custom Web reports.

(Example: N:\WaterGroup\CustomWebRpts15)

Save

4. Clear Caches

Lucy Administration Tools > System > Clear All Site Caches... > Clear All Caches button.

5. An agency may wish to create a directory structure in this location to separate reports by system; however, this is optional:

\\<Servername>\Shared\CustomWebReports\Work\<reports for the work program go here>



\\<Servername>\Shared\CustomWebReports\Sewer\<reports for the sewer program go here>

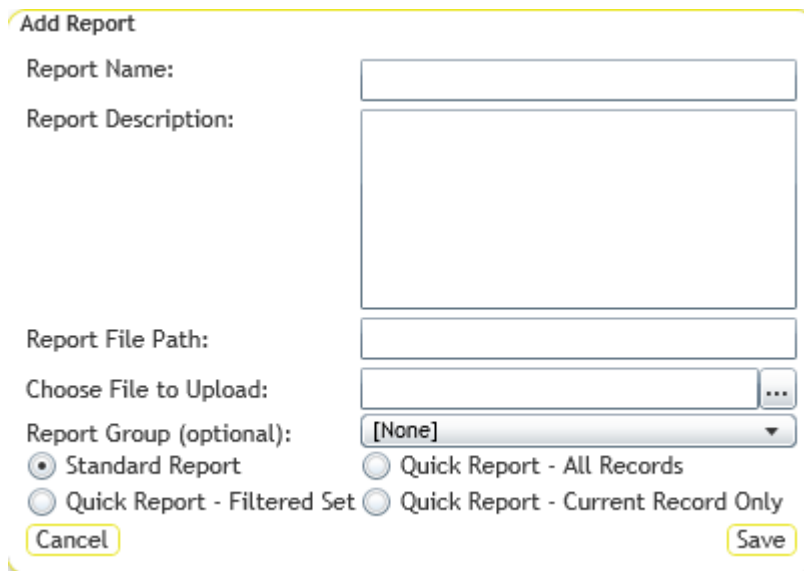
6. Once the custom report path has been established and the custom reports are in the new location outside of Lucy (example: **CompanyCustomWebReports**), then the reports should be added back into Lucy.

7. Within the module the custom web report originally ran from, delete the report and add as a new report.

How to Add New Custom Reports

Going forward, when adding new custom reports, upload the report using *Lucity Web*. The system will place the report in the report-share automatically.


1. In *Lucity Web*, open the module you would like to add the report to.
2. Click the Reports  button on the toolbar. The *Report* tool opens.
3. To add a new report, click the Add button . The following dialog appears:



4. Enter the *Report Name* and *Report Description*.
5. In the *Report File Path*, enter the name of the subfolder to which you want to upload the report file (ex. Work, Sewer) or leave blank.

Note: Reports are automatically uploaded to the location specified in the *Lucity Administration Tool's* "Path where Reports are stored" setting, which may be found in the System > Settings > Documents tab.

Note: If the folder name entered does not exist, the system will create a folder with that name within the folder to which the reports are uploaded.

6. Under *Choose File to Upload*, click the Browse button  and select the .rpt file you would like to upload to the web server. The report would ideally be located in the folder established in Step 1 at the top of this document (**CompanyCustomWebReports**) or a subfolder within, however, it can be brought in from any location. This will put the report into the location created for Custom Web reports that was designated in the System Settings Report File Path.

Note: The name of the .rpt file being uploaded cannot match any other .rpt files.

7. Assign the report to a *Group* (optional).

8. Choose or change the *Type* of report:
 - **Standard Report** - The report is generated when the user clicks the **Report** tool, selects the report and chooses how to run it.
 - **Quick Report - All Records** - Adds the report to the *Quick Report* drop-down list, located next to the **Report** tool. The report always runs against all records.
 - **Quick Report - Filtered Set** - Adds the report to the *Quick Report* drop-down list, located next to the **Report** tool. The report always runs against the current filter set.
 - **Quick Report - Current Record Only** - Adds the report to the *Quick Report* drop-down list, located next to the **Report** tool. The report always runs against the current record.

Add Report

Report Name:

Report Description:

Report File Path:

Choose File to Upload: ...

Report Group (optional): ▼

Standard Report
 Quick Report - All Records
 Quick Report - Filtered Set
 Quick Report - Current Record Only



9. Click **Save**.

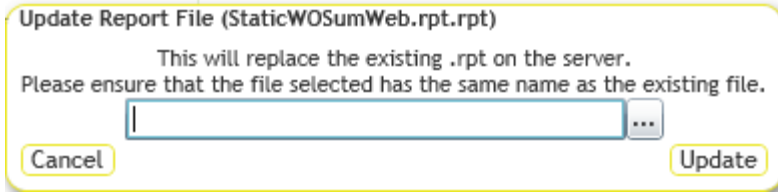
Editing Custom Reports


Editing allows changes in the Report Name, Description, Group or Standard/Quick Report options. Update is used to save the changes.

Updating Custom Reports

When existing Custom reports need to be revised, this should be done outside of the Lucity system. The revised reports could be worked on or loaded into the location established for your company, mentioned in step 1 (Example: **CompanyCustomWebReports**).

1. Open *Lucity Web* and go to the module associated with the report.
2. Click the Reports button  on the toolbar. The *Report* tool opens.
3. Select the report to update from the list and click the Update Report File button .




4. Click the Browse button  and select your updated .rpt file from the location of the revised report (Example: **CompanyCustomWebReports**).
5. Click **Update**.
6. The new copy of the report will be uploaded and will replace the existing report file in the Lucy system (the location established in the System Settings Report Path).

Note: The reports that Lucy provides with the software (standard reports) cannot be updated.

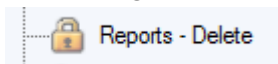
Report Security

For version 2015 sp0, if the User's Report Security isn't set up properly, a user can delete the entire report from the Custom report folder instead of just the link to the report. This was corrected in 2015 sp1. This would be done in the Report dialog if a report is highlighted and then the **RED** button is

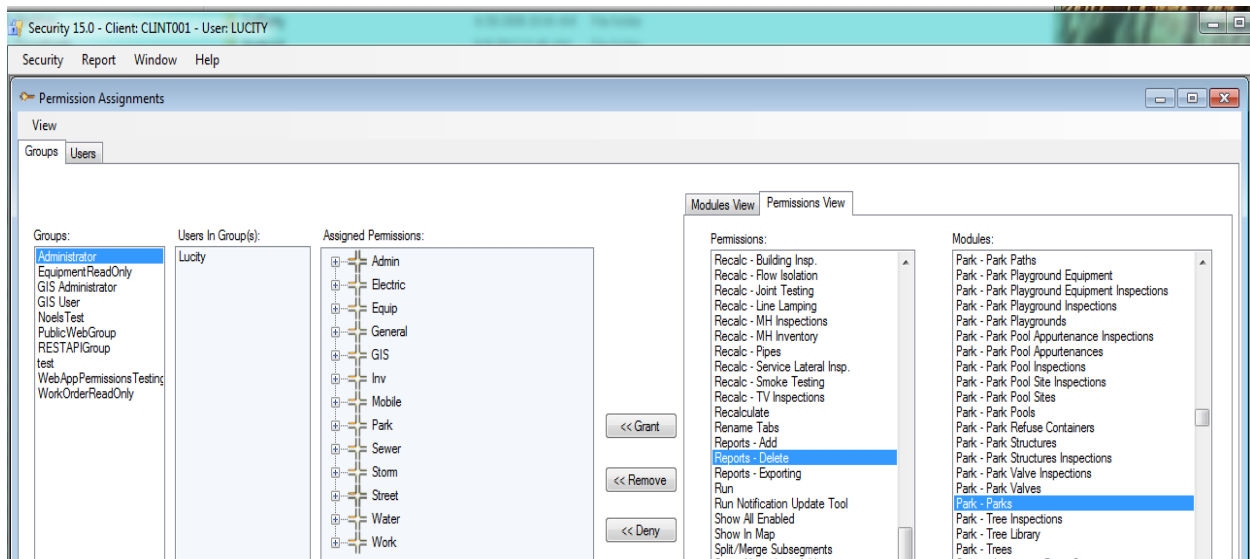
selected. 

To prevent this from occurring, the **Report Delete** permission can be denied.

1. In **Lucy Security > Permissions Setup**
2. In either the **Groups** and/or **Users** tab, Select the Group.
3. On the right side **Permissions View**, **Permissions** box, click on **Reports - Delete**.
4. In the **Modules** box select individual modules or multiples.
5. In the center select the **<<Deny** button.
6. In the **Assigned Permissions** box you can check the module's **Reports - Delete** permission.



Notes: _____



Larger view of right side with multiple modules selected.

