TRAINING GUIDE

Beginning Crystal 1

Using Crystal Reports with Lucity

Beginner - 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 Lucity.

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Getting Started

The Crystal Report software is what is currently used to create the standard reports provided with the Lucity 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 Lucity can only support the functions provided in Crystal XI. The Lucity software can run reports created in later versions of Crystal, however; it cannot use any new functionality. The Web version of Lucity 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 Crystal 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

Crystal XI

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

Crystal 2008

New Report, Open, Save, Print, Print Preview, HTML Preview, Export, Cut, Copy, Paste, Format Painter, Undo, Redo, Toggle Preview Panel, Field Explorer, Report Explorer, Repository Explorer, Dependency Checker, Workbench, Find

Insert Tools Toolbar

Crystal XI

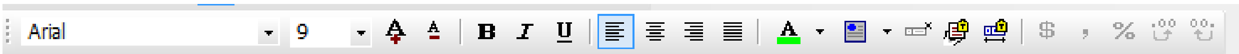
Insert Text Object, Insert Group, Insert Summary, Insert Cross-Tab, Insert OLAP grid, Insert Subreport, Insert Line, Insert Box, Insert Picture, Insert Chart, Insert Map

Crystal 2008

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, Insert Flash Object

Formatting Toolbar

Crystal XI



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.

Crystal 2008

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

Crystal XI

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

Crystal 2008

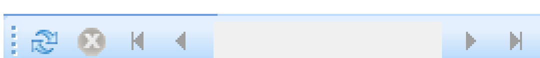
Database Expert, Group Expert, Group Sort Expert, Record Sort Expert, Select Expert, Section Expert, Formula Workshop, OLAP Design Wizard, Template Expert, Format, Insert Hyperlink, Highlighting

Navigation Tools Toolbar

Crystal XI

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

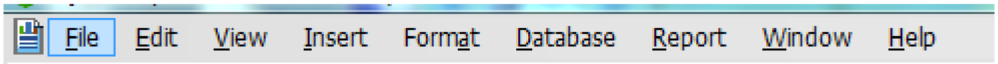
Crystal 2008

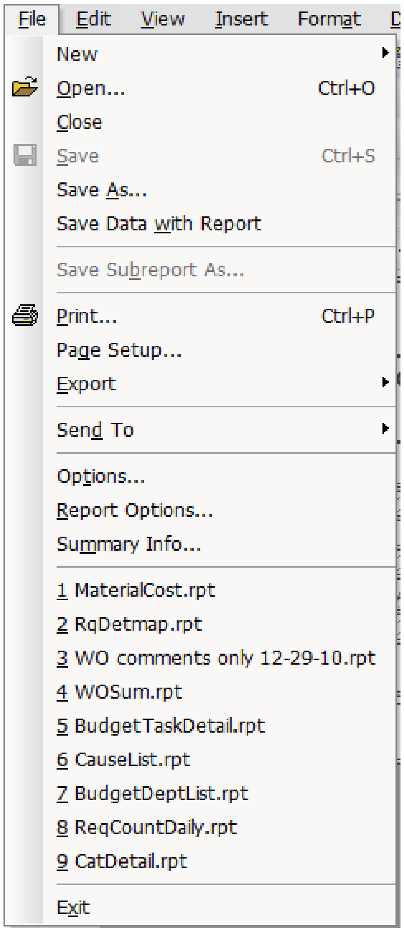


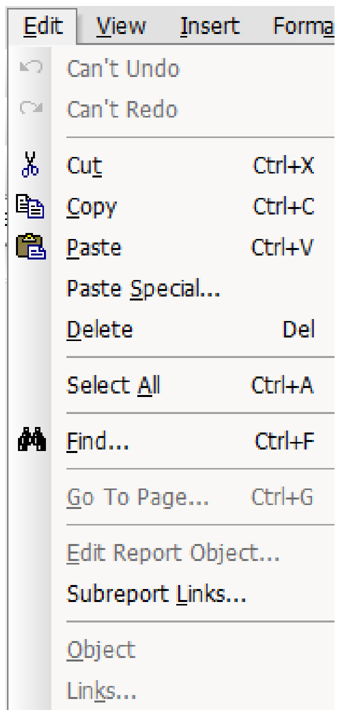
Refresh, Stop, Show First Page, Show Previous Page, Show Next Page, Show Last Page

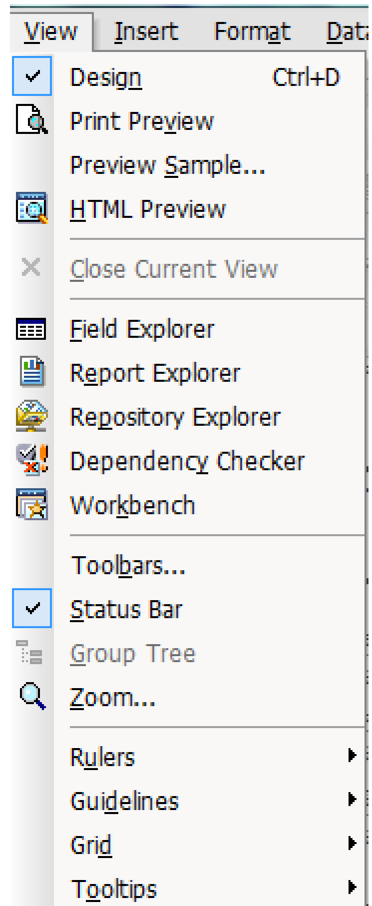
Menu Bar

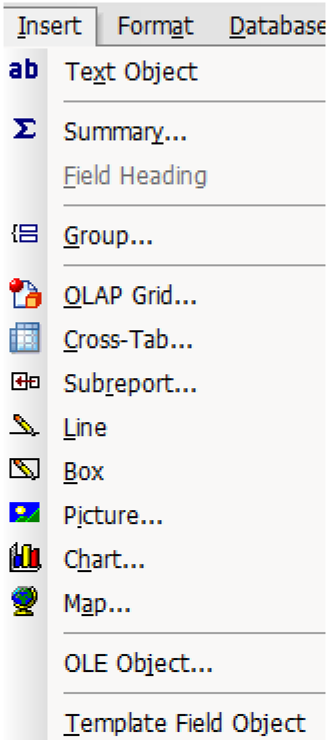
The functions of the toolbar icons are also available in the drop down **Menu Bar** at the top.

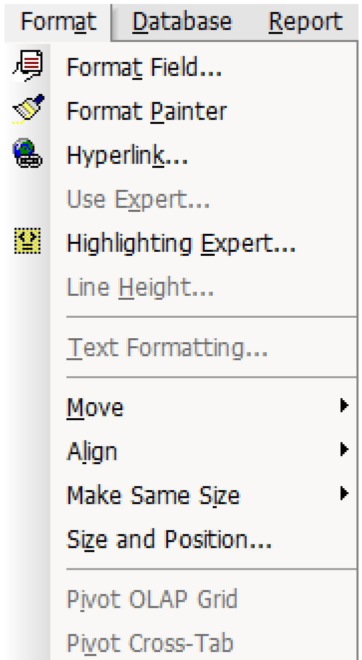


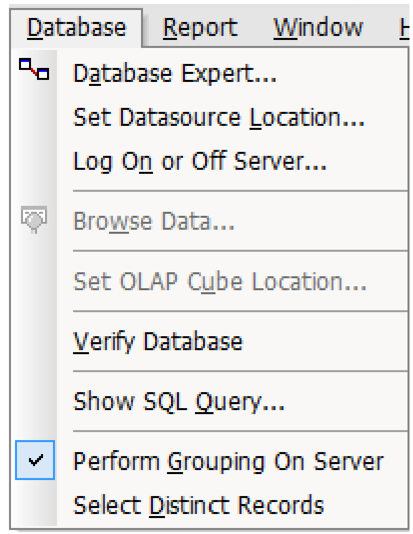


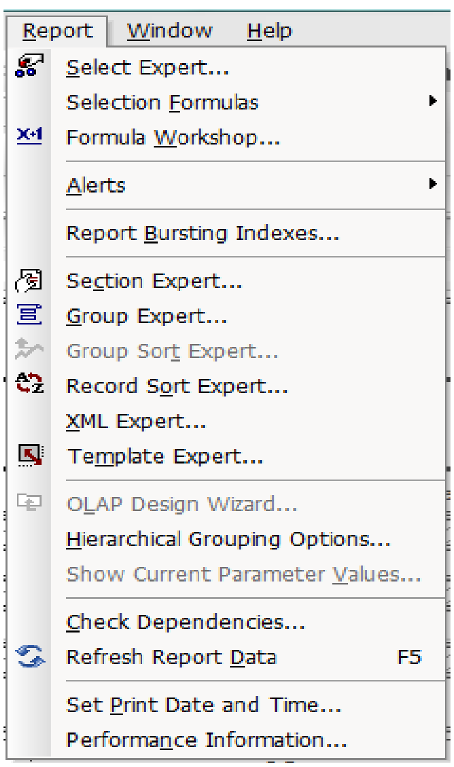


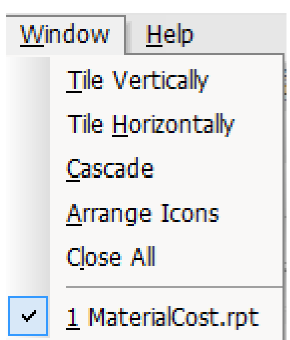


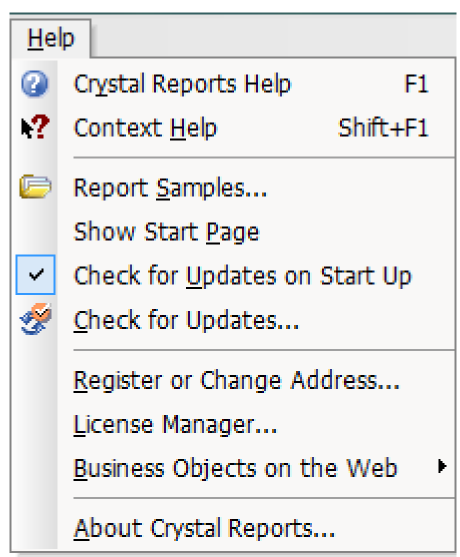

Insert
Format
Database
Text Object
Summary...
Field Heading
Group...
OLAP Grid...
Cross-Tab...
Subreport...
Line
Box
Picture...
Chart...
Map...
OLE Object...
Template Field Object


Format
Database
Report
Format Field...
Format Painter
Hyperlink...
Use Expert...
Highlighting Expert...
Line Height...
Text Formatting...
Move
Align
Make Same Size
Size and Position...
Pivot OLAP Grid
Pivot Cross-Tab

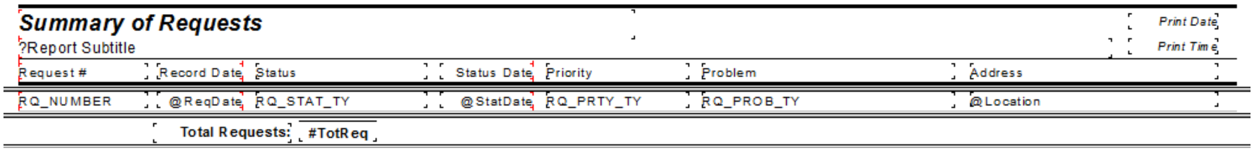

Database
Report
Window
Database Expert...
Set Datasource Location...
Log On or Off Server...
Browse Data...
Set OLAP Cube Location...
Verify Database
Show SQL Query...
Perform Grouping On Server
Select Distinct Records


Report
Window
Help
Select Expert...
Selection Formulas
Formula Workshop...
Alerts
Report Bursting Indexes...
Section Expert...
Group Expert...
Group Sort Expert...
Record Sort Expert...
XML Expert...
Template Expert...
OLAP Design Wizard...
Hierarchical Grouping Options...
Show Current Parameter Values...
Check Dependencies...
Refresh Report Data F5
Set Print Date and Time...
Performance Information...

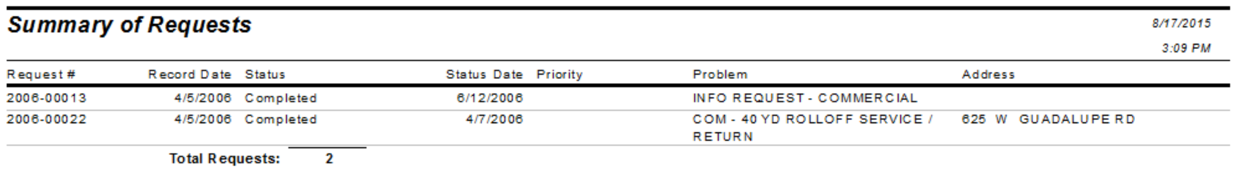

Window
Help
Tile Vertically
Tile Horizontally
Cascade
Arrange Icons
Close All
1 MaterialCost.rpt


Help
Crystal Reports Help F1
Context Help Shift+F1
Report Samples...
Show Start Page
Check for Updates on Start Up
Check for Updates...
Register or Change Address...
License Manager...
Business Objects on the Web
About Crystal Reports...

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



Preview

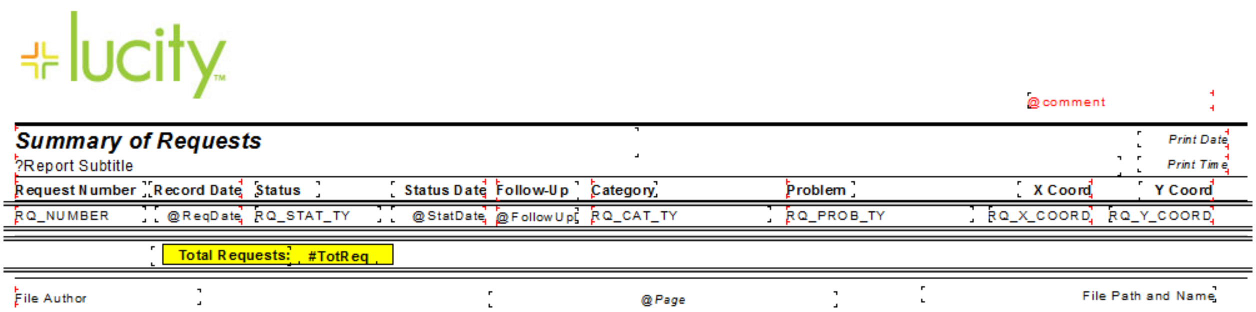


Summary of Requests — 8/17/2015, 3:09 PM

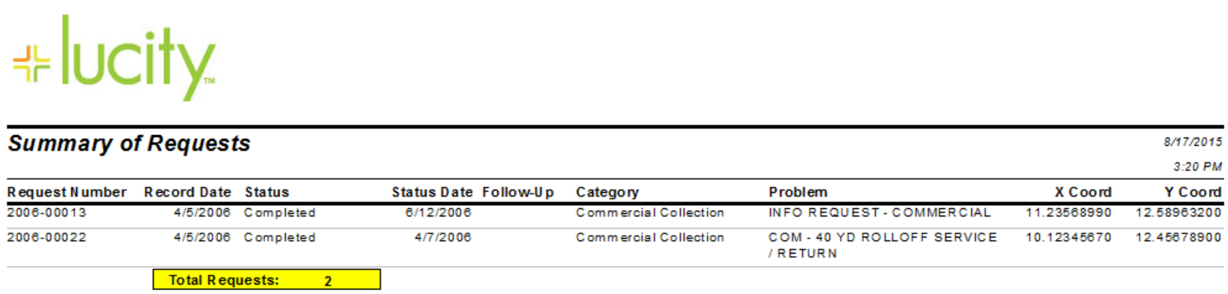
Request #	Record Date	Status	Status Date	Priority	Problem	Address
2006-00013	4/5/2006	Completed	6/12/2006		INFO REQUEST - COMMERCIAL	
2006-00022	4/5/2006	Completed	4/7/2006		COM - 40 YD ROLLOFF SERVICE / RETURN	625 W GUADALUPE RD

Total Requests: 2

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



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

Some of the changes include adding a company logo, changing column headers, adding text objects, adding data fields, creating formulas and formatting.

Custom Reports from a Standard Report

Finding the Report Location and Name - Desktop

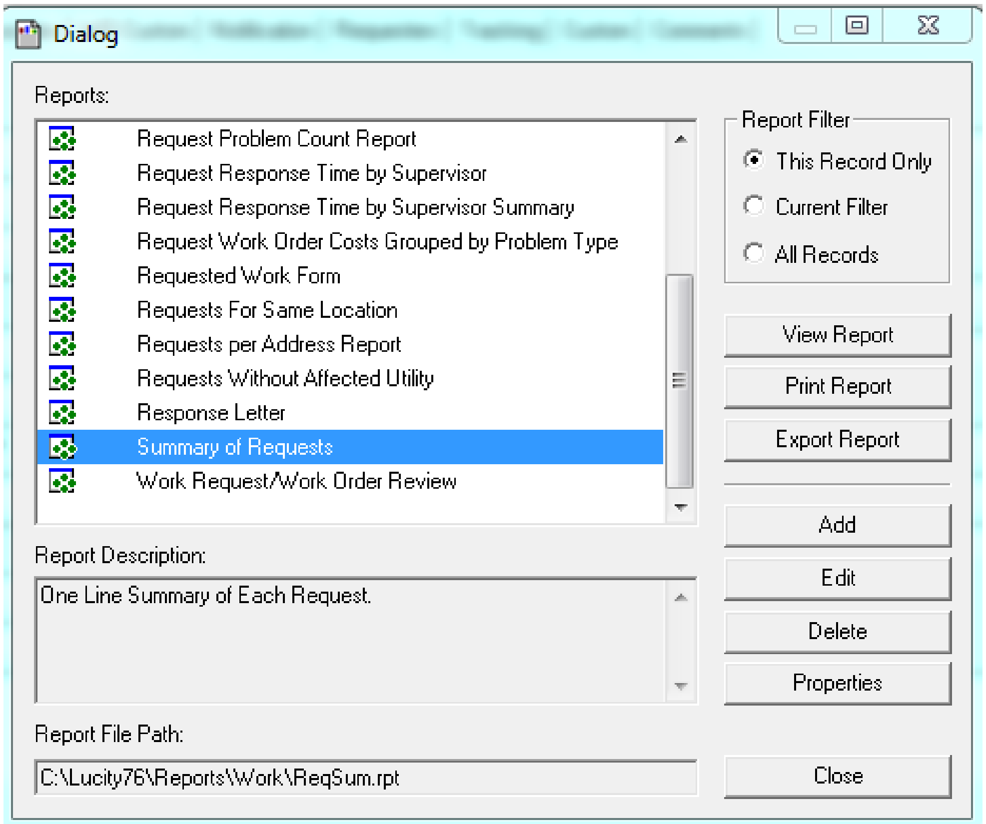
The first step in modifying a standard Lucity report is to identify the report name and location so a copy of the report can be created to modify as a new custom report.

1. Open the Lucity module where the Request Summary Report is located.
    - Select **Work**>>**Request** from the Lucity 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.
    - 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: Lucity 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.*

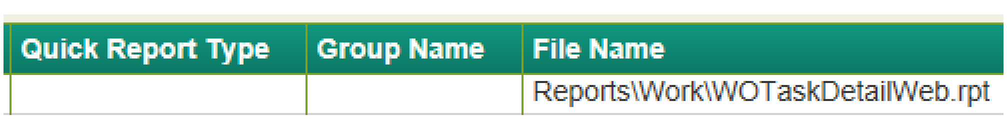
- The report name appears after the last backslash. As you can see below, this report is named **ReqSum.rpt**.



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

Finding the Report Location and Name - Web

The Web Report list varies depending on the version of Lucity being used. Typically there will be the Report Name, Description and File Name. There may also be a reference to Quick Report Type and Group Name.



Renaming Reports

If you modify a report and save it under the original name, the changes you made will be overridden the next time Lucity is upgraded. Thus, reports that are modified must 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 Lucity 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 Lucity 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.

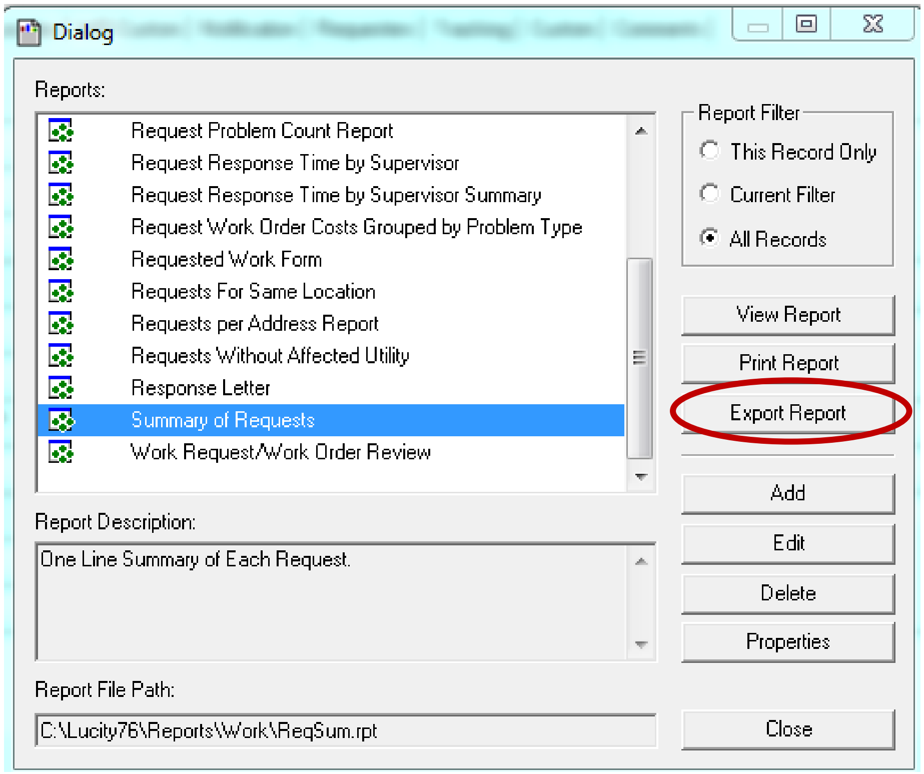
3. Lucity reports store database connection information. When the report is run in Lucity, the program replaces this connection information with connection strings specific to the customer's database configuration during run-time. When you export a report, the database connection information used at run-time is saved. This is the preferred method for handling Lucity 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

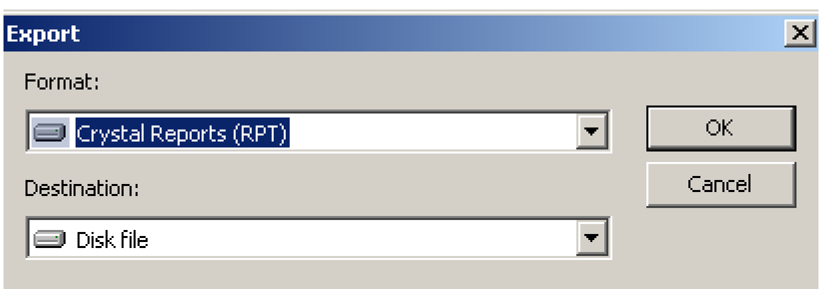
As we mentioned above, the preferred way of handling Lucity reports is to export them. This allows you to rename the report and make modifications as well as maintain your database connection information. Follow the steps below to export a report:

Desktop

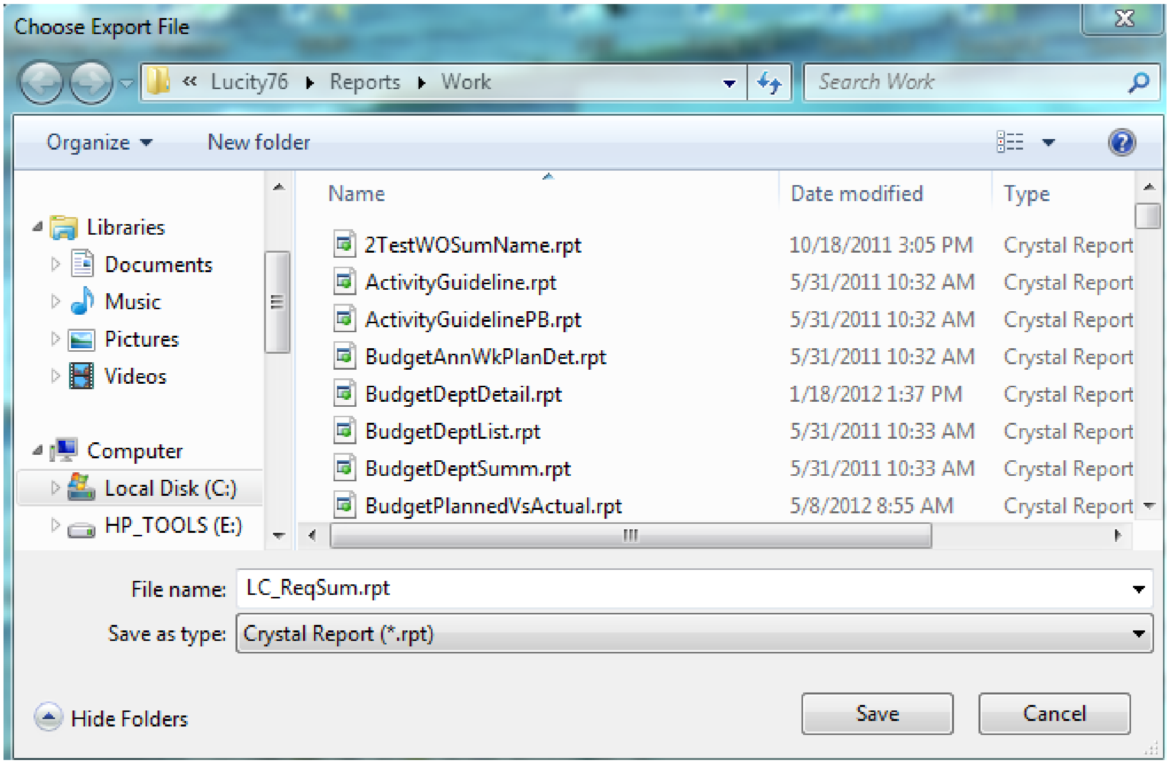
1. Within the Reports dialog click *All Records*.
2. Highlight the report you'd like to copy (**Summary of Requests**) and select *Export Report*. (Wait)



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*.

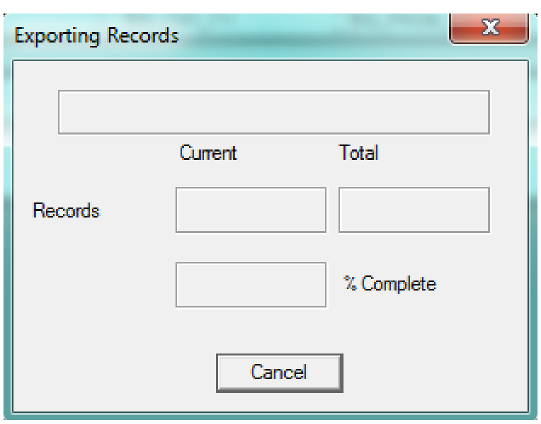


4. The following dialog will appear:



5. 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.
6. Type in a new File Name (**LC_ReqSum.rpt)**.
7. Click *Save*.
8. At this point the report needs to run, the subtitle query is optional but almost any other query such as dates must be entered, then 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).

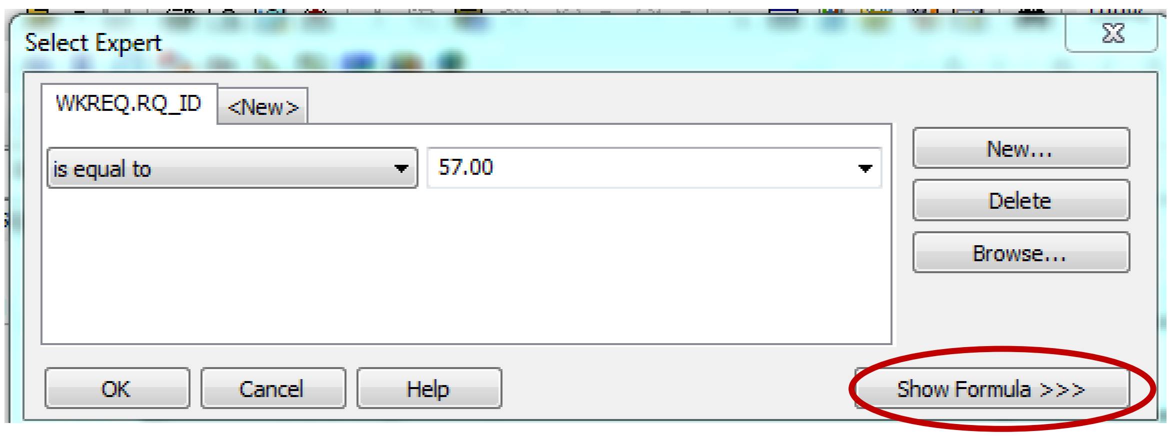


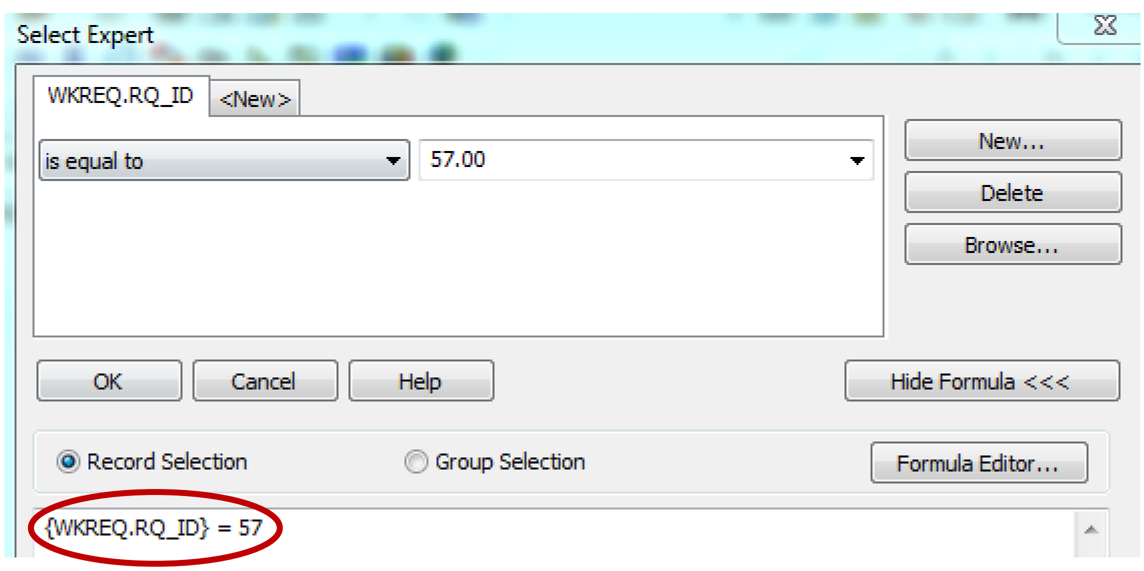
9. Close the Report dialog.
10. Minimize the Lucity module.

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*.

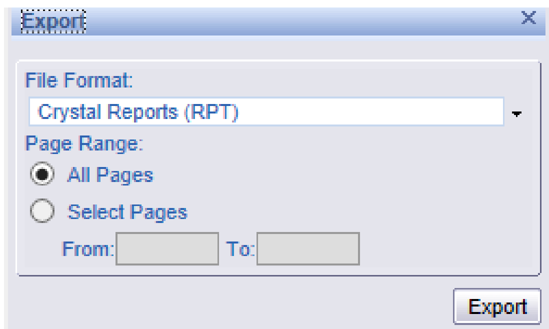
You are now ready to begin making modifications to the report.

> *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.*

Example 1

Web

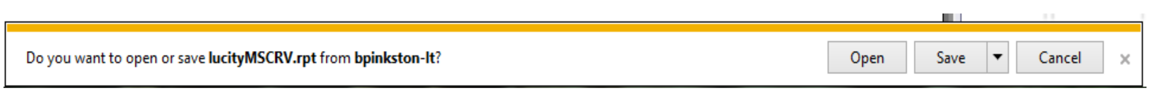
1. In the Request module highlight one record.
2. In the Report Dialog click on the report to be Exported. (**Requests per Address Report**)
3. Run the report with **Selected Records** and the **Advanced View** (HTML) options.
4. Once the report has run, select the **Export this report** option in the top tool bar.
5. This opens the following Dialog. Click **Export**.



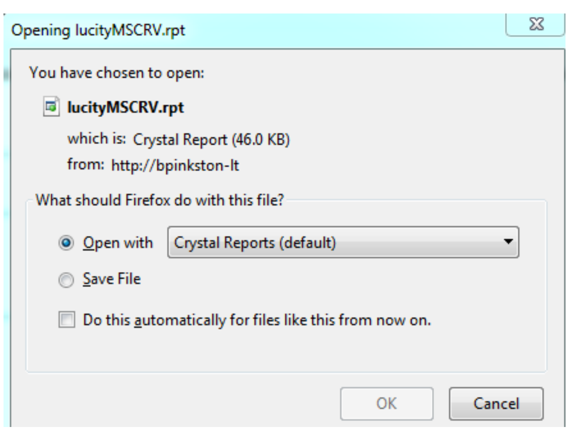
6. The referenced report name in this example is lucityMSCRV.rpt and is not the actual file name, ignore this.

   Depending on the Browser being used you will get a dialog.

   Internet Explorer should look similar to this:



   Firefox should look similar to this:



7. Select the **Open** option. Click through any comments such as Invalid Printer or Crystal Reports version.

8. In the tool bar select **File**, **UNCHECK** the **Save Data with Report** option.
9. Open the *Select Expert* and remove the formula for the ID field that was placed in here because the report was run with **Selected Records**.
10. In the top tool bar select **File > Save as…**
11. Browse to the location for this new custom report (client specific – in training we will use **CustomLucityWebReports)** and give it a new file name (**LC_ReqPerAddyWeb.rpt**)

You now have a copy of the report with a new name and pointed to your data. The User ID and Password for your database are required to run the report away from the Lucity environment. Ex. 2

Setup Options

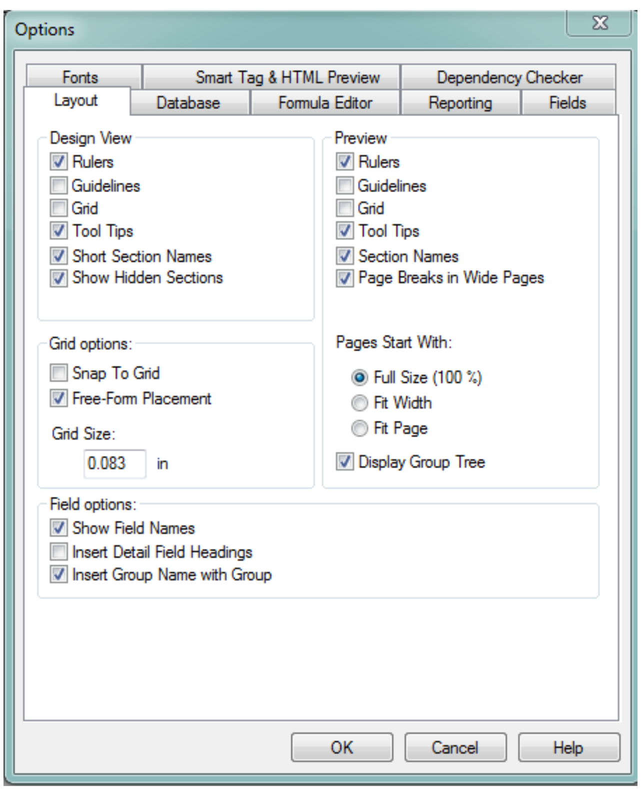
Whether a report is modified or created new, it is helpful for certain report options to be set before working on the report. Within the Crystal Reports *Options* and *Report Options* there are a number of settings that can be preset for generalizations. These can be changed for individual reports or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

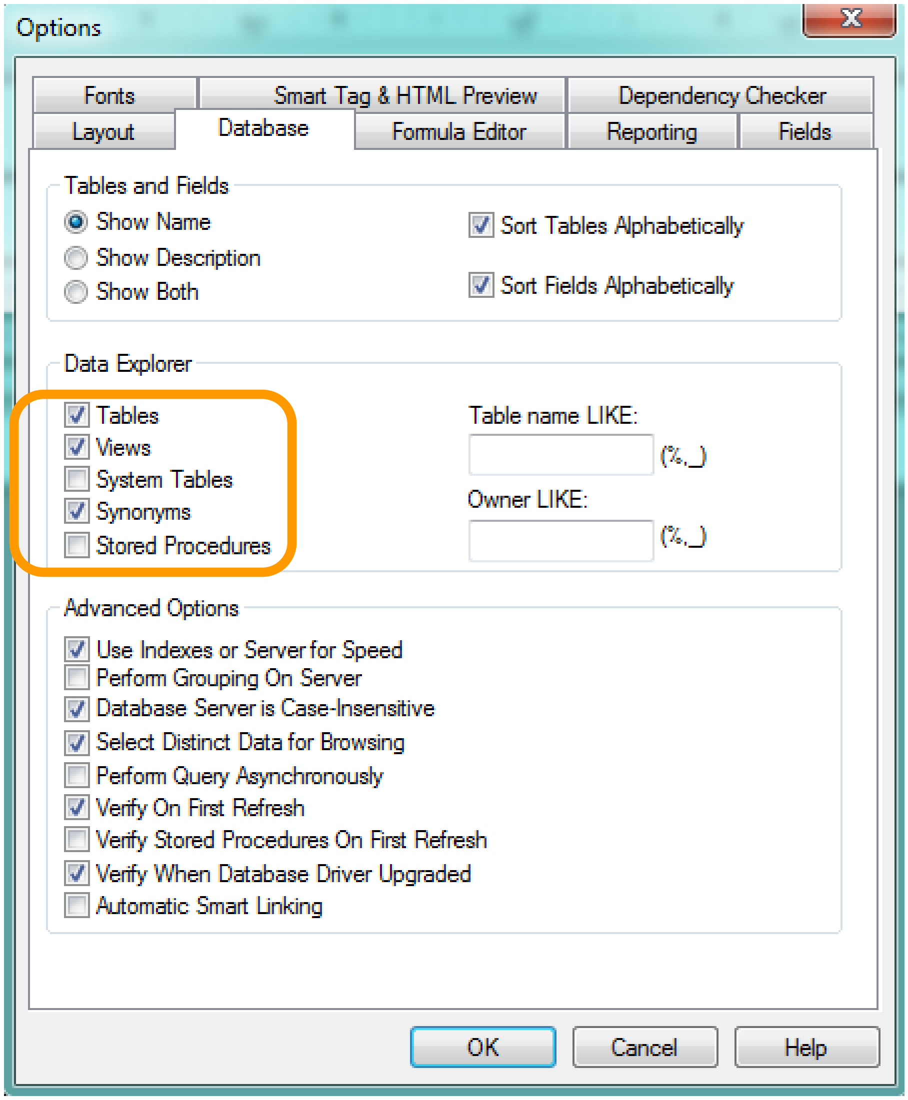
Options

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

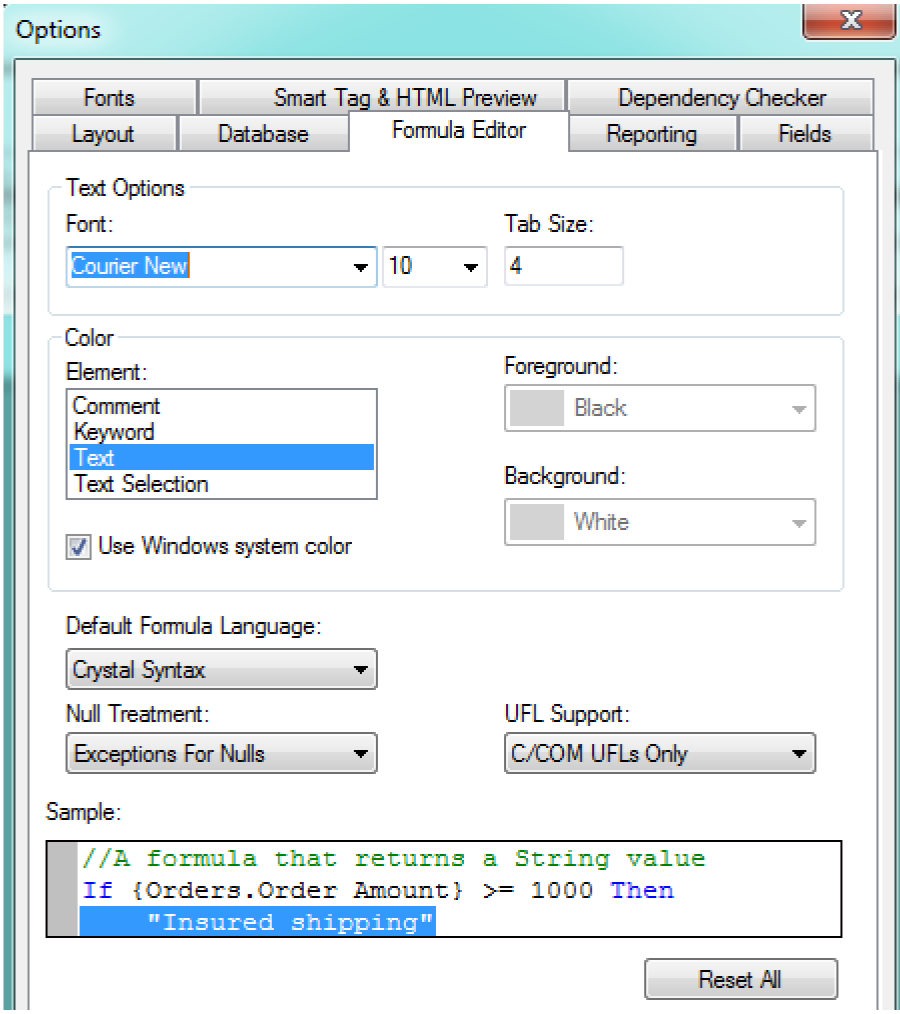
- In the Menu Bar click **File >> Options**

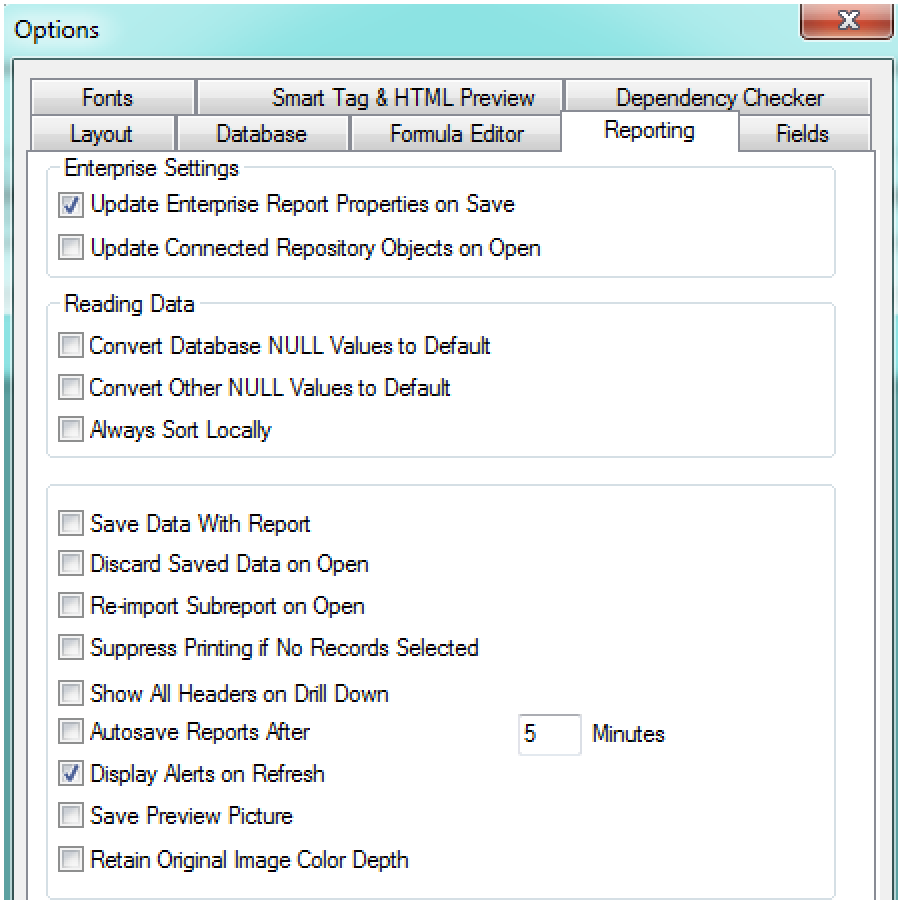
The following screen captures show what options can be changed behind the scenes. These options will be reflected in all of the reports created.

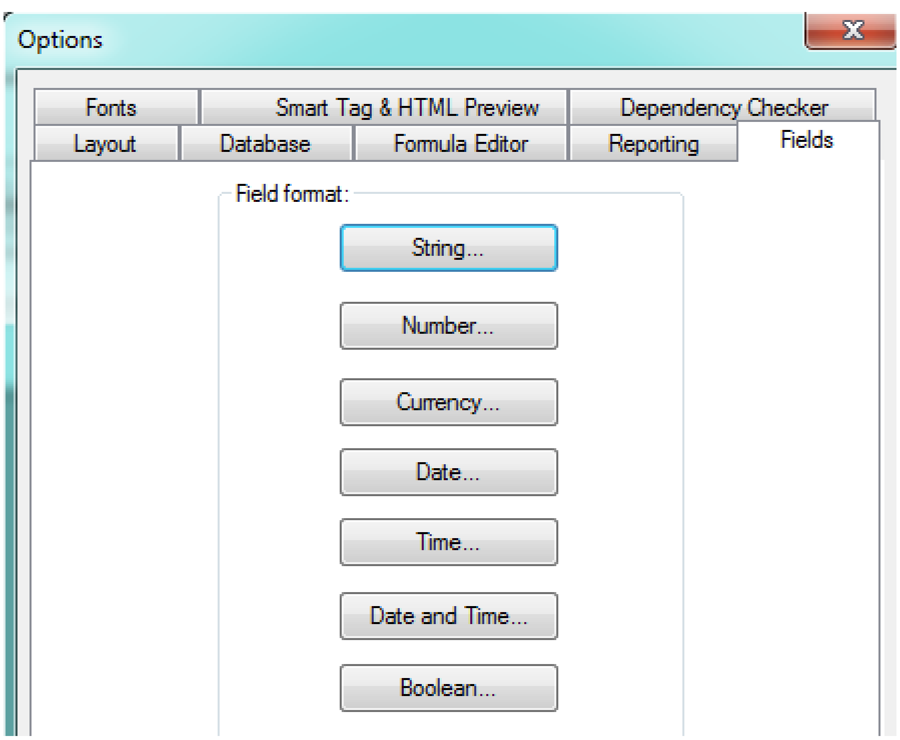




Once the database has been unified it is important to confirm the "**Stored Procedures**" option is **unchecked**. This is necessary to show all of the Lucity tables to add to a report or when repointing tables. Crystal Reports limits the number of objects available to be used in a report and Stored Procedures are counted as objects but are typically not used in reporting.

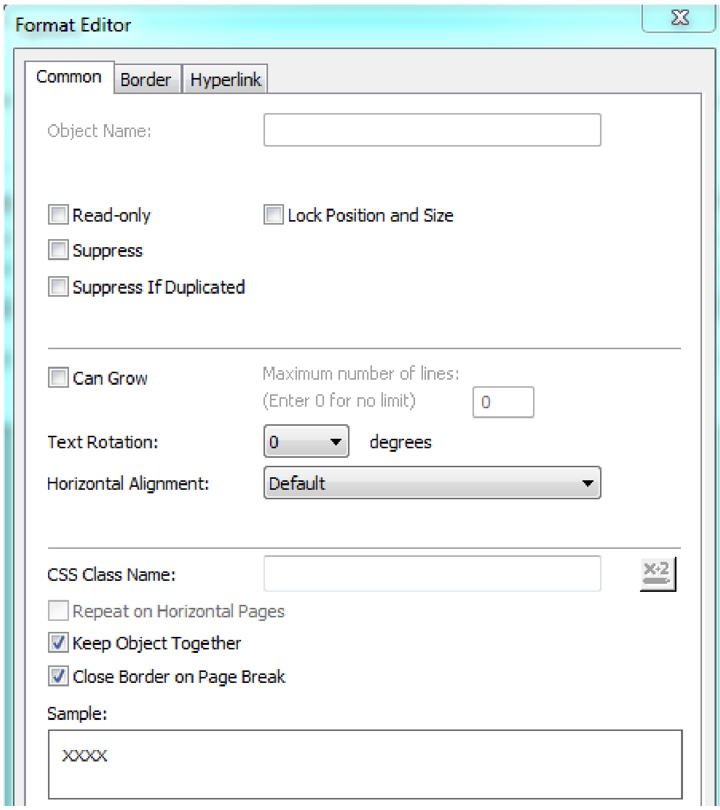

Options
Fonts
Smart Tag & HTML Preview
Dependency Checker
Layout
Database
Formula Editor
Reporting
Fields
Text Options
Font:
Courier New
10
Tab Size:
4
Color
Element:
Comment
Keyword
Text
Text Selection
Use Windows system color
Foreground:
Black
Background:
White
Default Formula Language:
Crystal Syntax
Null Treatment:
Exceptions For Nulls
UFL Support:
C/COM UFLs Only
Sample:
//A formula that returns a String value
If {Orders.Order Amount} >= 1000 Then
"Insured shipping"
Reset All


Options
Fonts
Smart Tag & HTML Preview
Dependency Checker
Layout
Database
Formula Editor
Reporting
Fields
Enterprise Settings
Update Enterprise Report Properties on Save
Update Connected Repository Objects on Open
Reading Data
Convert Database NULL Values to Default
Convert Other NULL Values to Default
Always Sort Locally
Save Data With Report
Discard Saved Data on Open
Re-import Subreport on Open
Suppress Printing if No Records Selected
Show All Headers on Drill Down
Autosave Reports After
5
Minutes
Display Alerts on Refresh
Save Preview Picture
Retain Original Image Color Depth

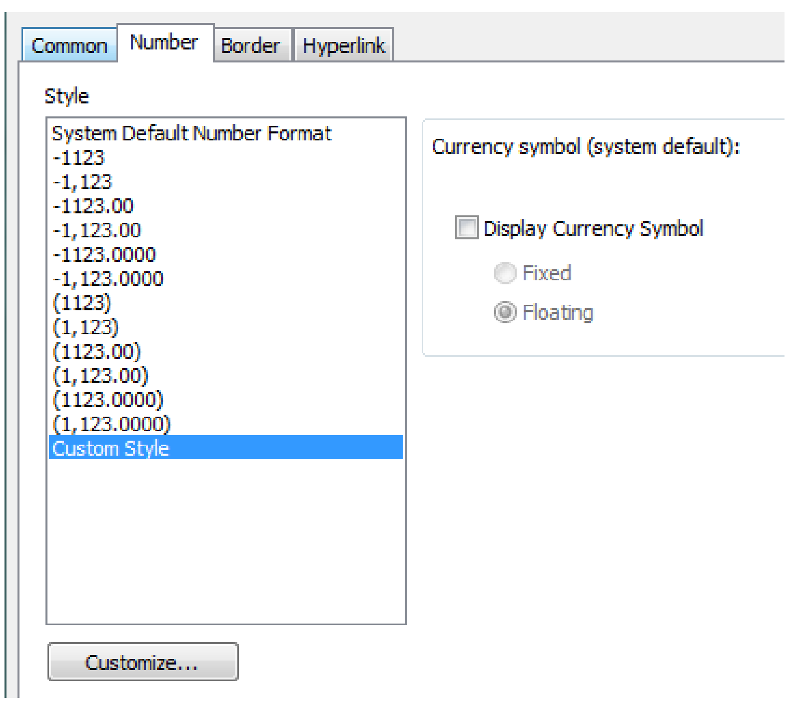

Options
Fonts
Smart Tag & HTML Preview
Dependency Checker
Layout
Database
Formula Editor
Reporting
Fields
Field format:
String...
Number...
Currency...
Date...
Time...
Date and Time...
Boolean...

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.

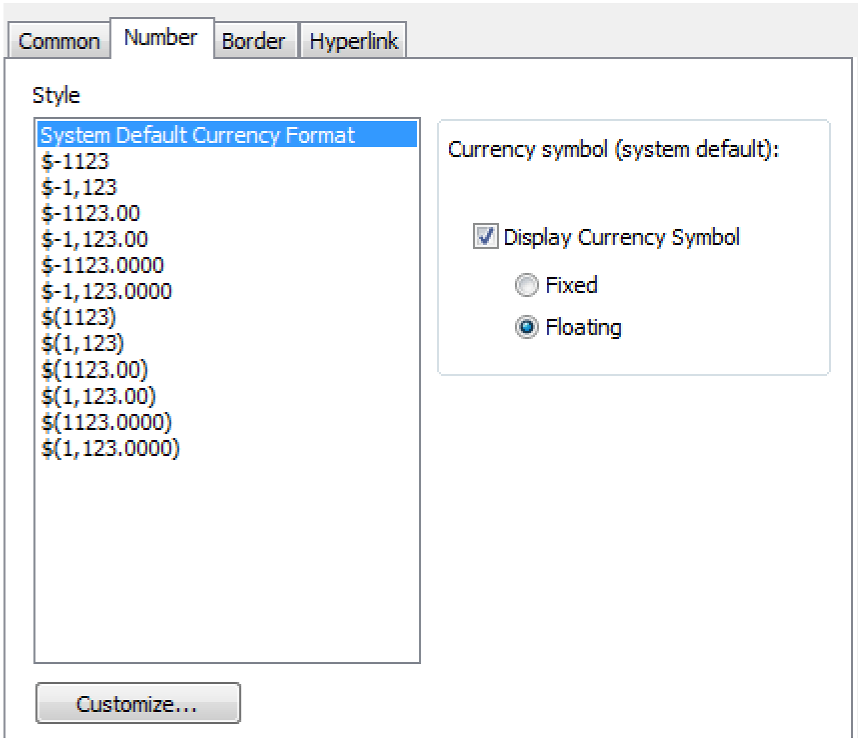
String



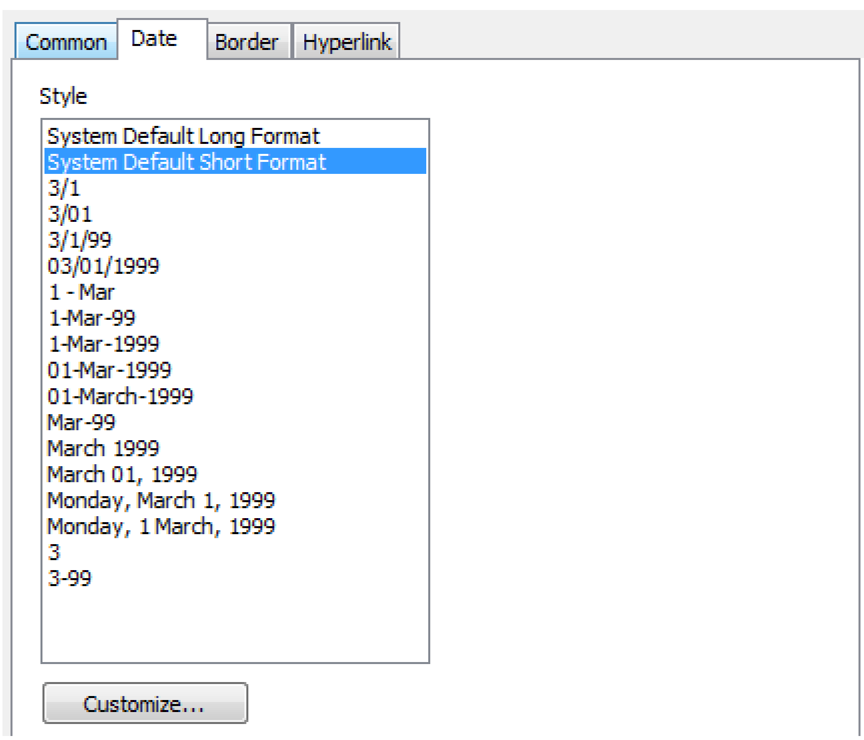
Number



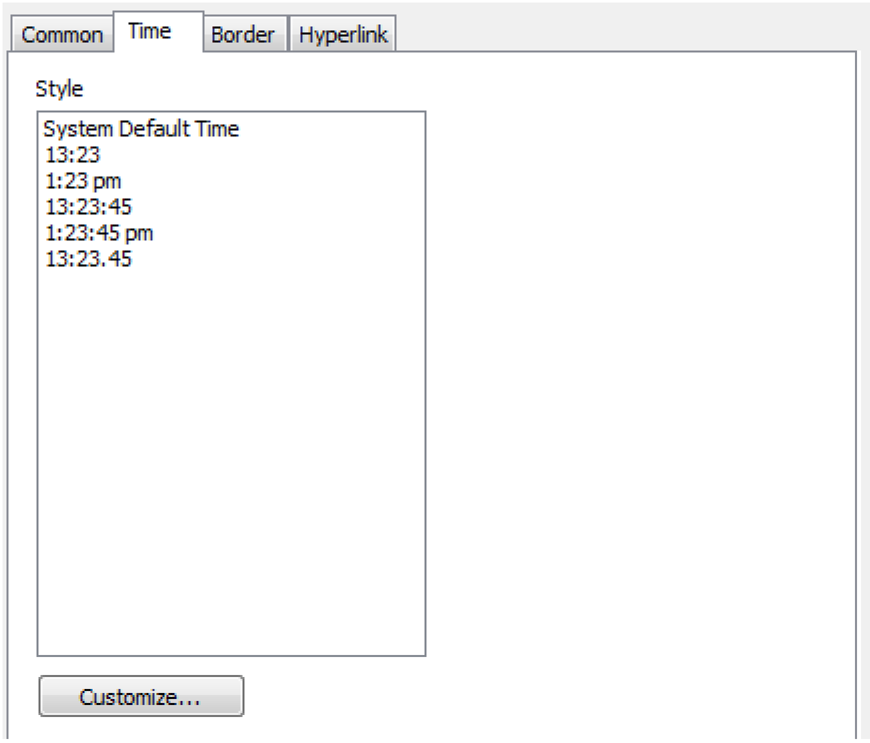
Currency



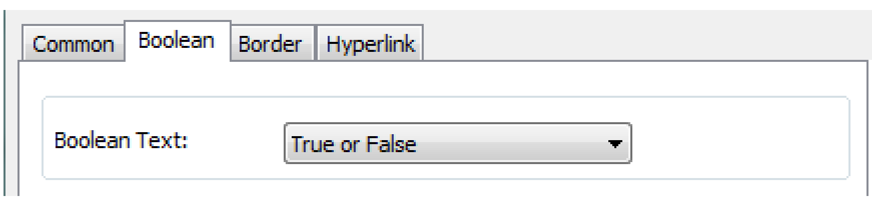
Date

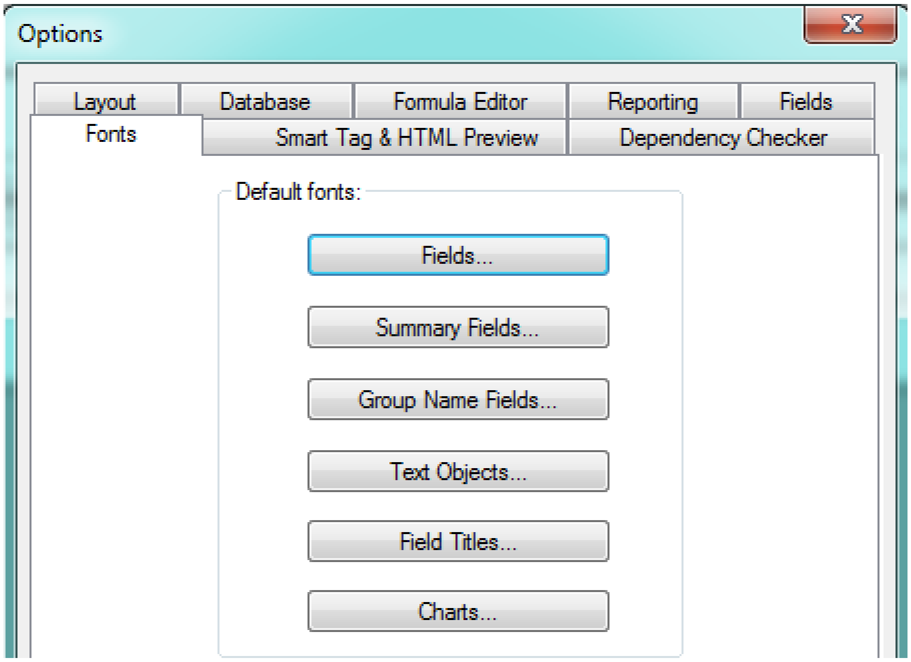


Time

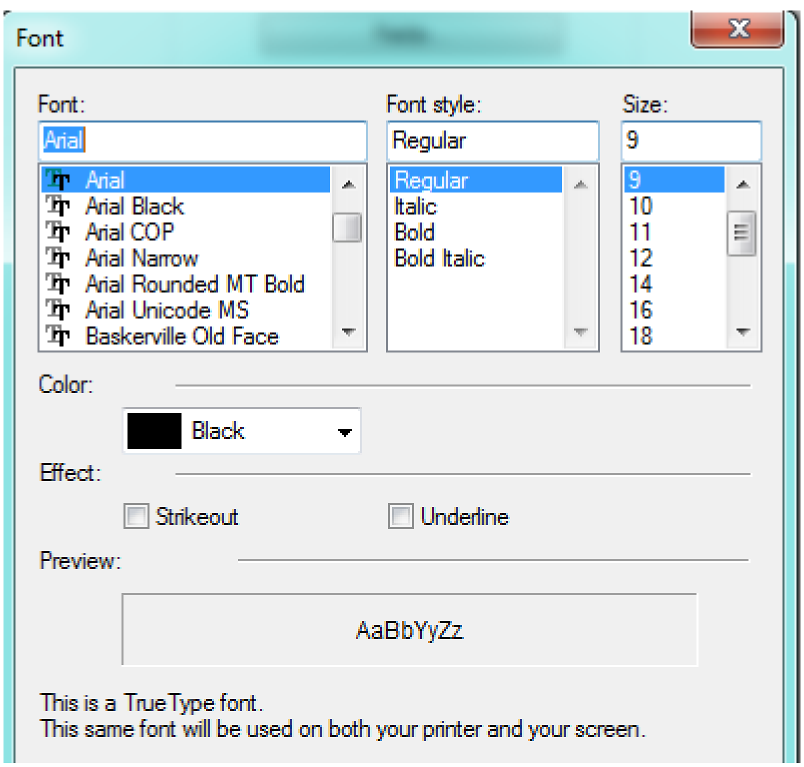


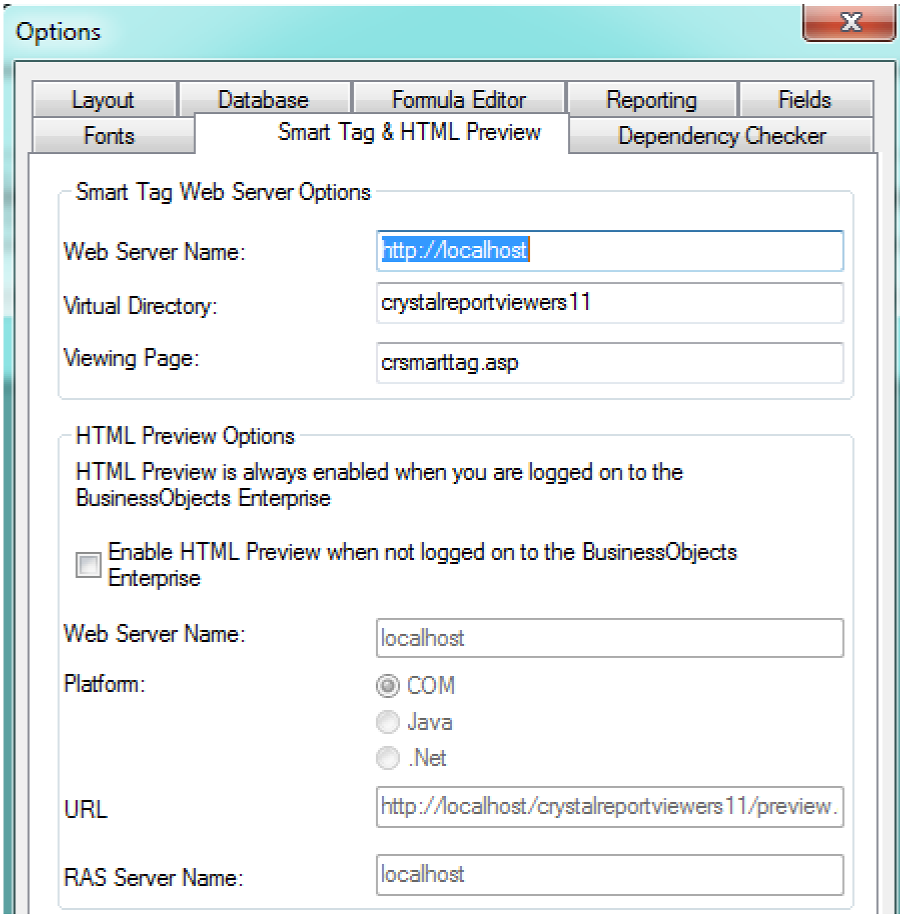
Boolean

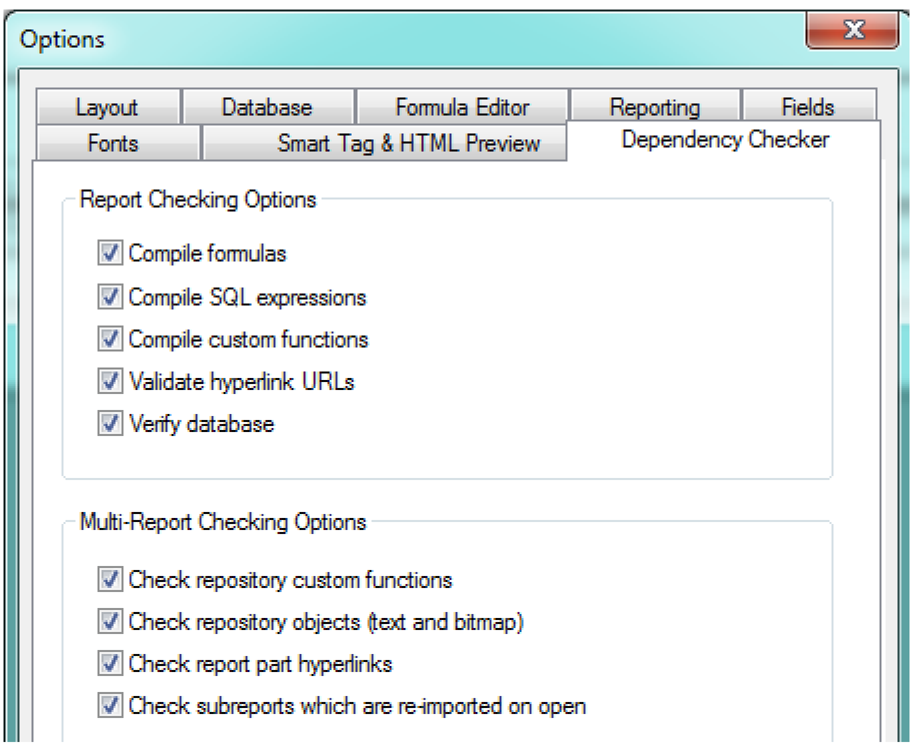




Each Field or Object type opens the Font options.




Options
Layout
Database
Formula Editor
Reporting
Fields
Fonts
Smart Tag & HTML Preview
Dependency Checker
Smart Tag Web Server Options
Web Server Name:
http://localhost
Virtual Directory:
crystalreportviewers11
Viewing Page:
crsmarttag.asp
HTML Preview Options
HTML Preview is always enabled when you are logged on to the BusinessObjects Enterprise
Enable HTML Preview when not logged on to the BusinessObjects Enterprise
Web Server Name:
localhost
Platform:
COM
Java
.Net
URL
http://localhost/crystalreportviewers11/preview.
RAS Server Name:
localhost

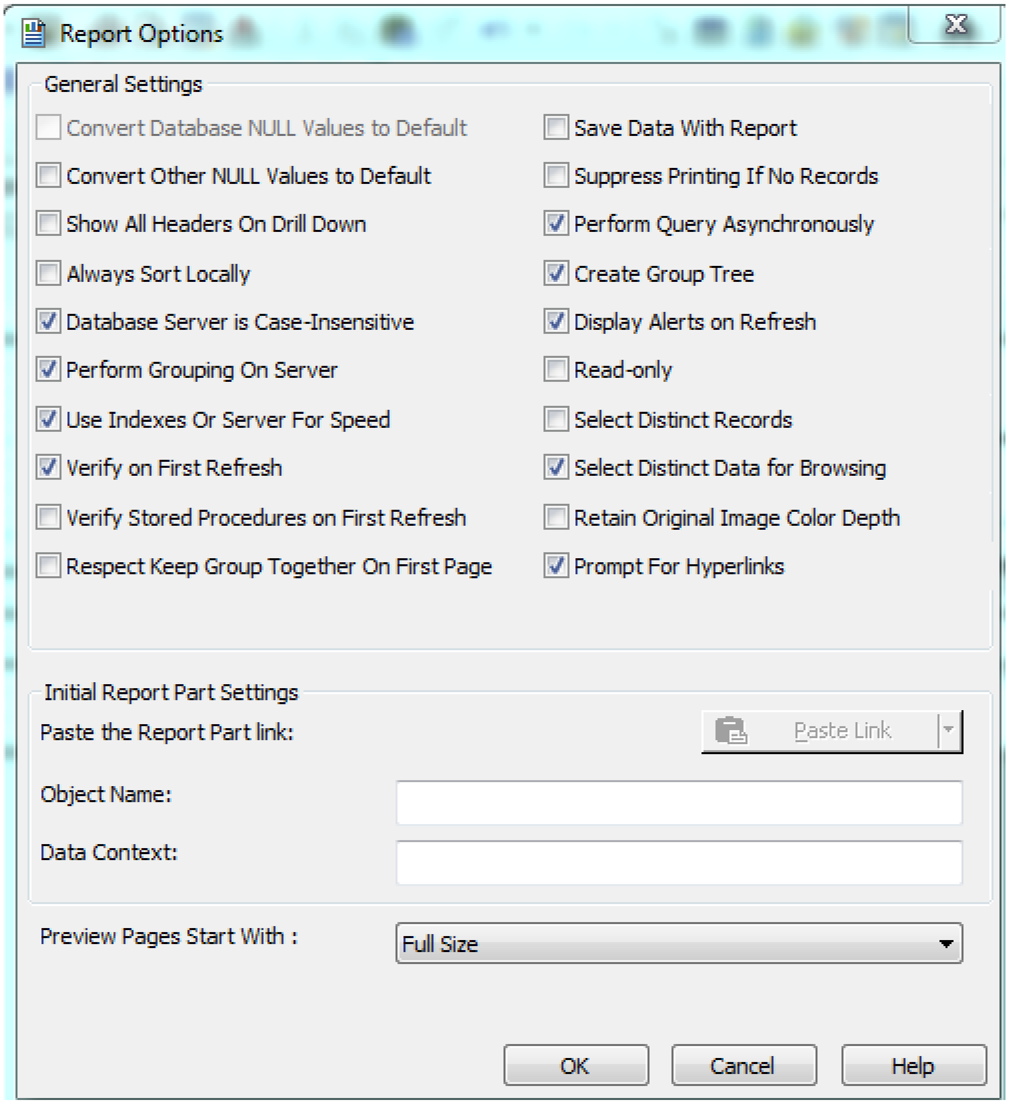

Options
Layout
Database
Formula Editor
Reporting
Fields
Fonts
Smart Tag & HTML Preview
Dependency Checker
Report Checking Options
Compile formulas
Compile SQL expressions
Compile custom functions
Validate hyperlink URLs
Verify database
Multi-Report Checking Options
Check repository custom functions
Check repository objects (text and bitmap)
Check report part hyperlinks
Check subreports which are re-imported on open

Report Options

Report Options are specific to an individual report.

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

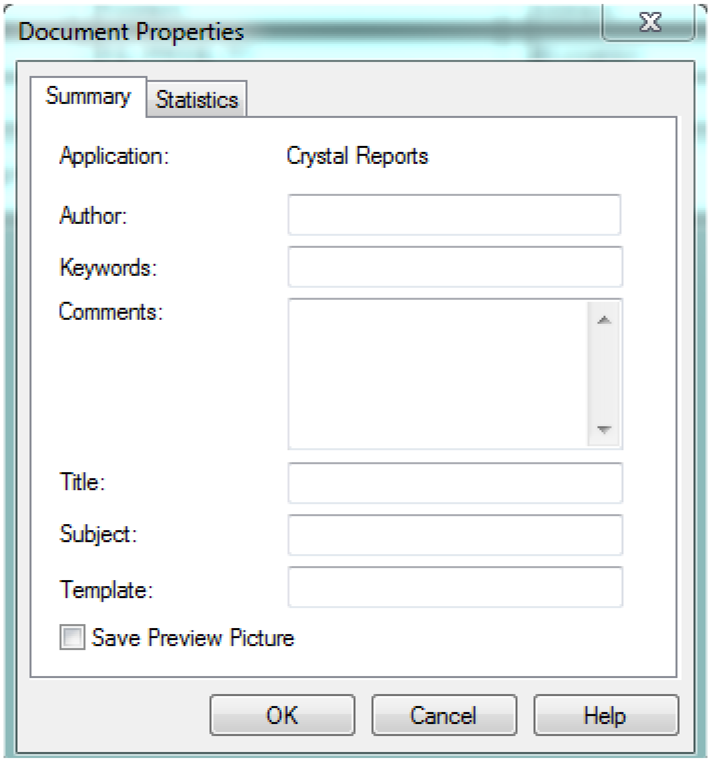
These Report Options are also available within Subreports (discussed later).

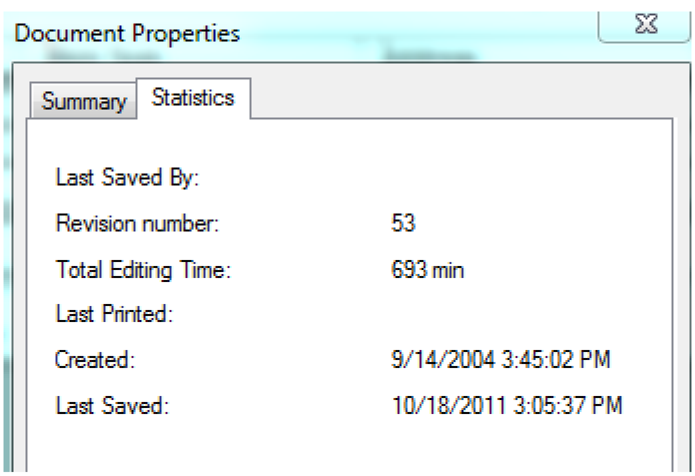


Document Properties

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).

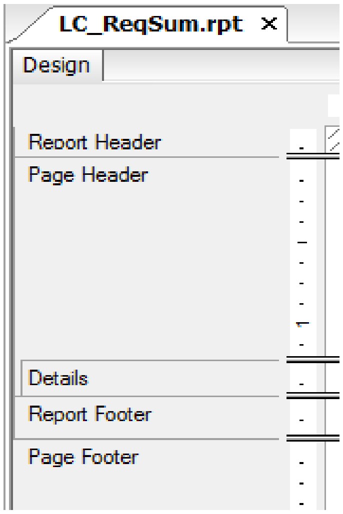
- In the Menu Bar click **File >> Summary Info…**



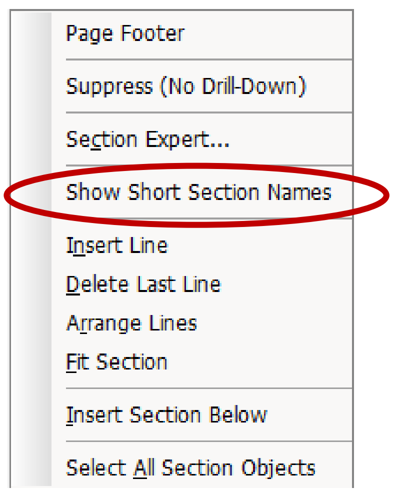


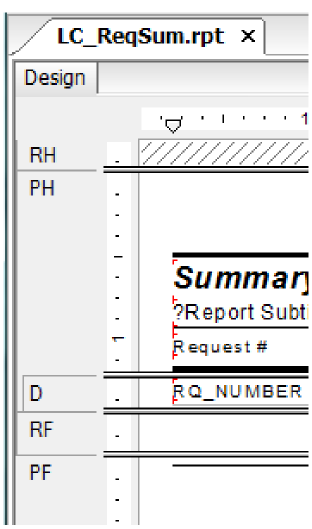
Report Sections

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



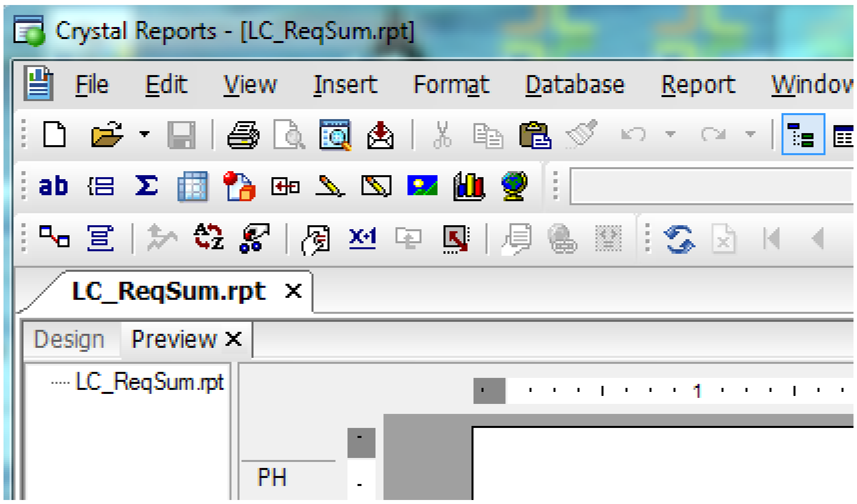
To conserve space this section can be reduced in size by right clicking in the section and selecting *Show Short Section Names*





Modifying a Report

Beneath the toolbars the open report will have a tab with either the report file name or the Title set up in Document Properties. 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 as well.

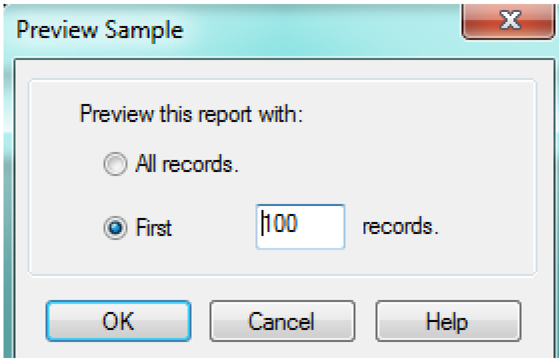
> *Note: The undo and redo buttons are very helpful when revising reports.* 

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 .

Preview Sample

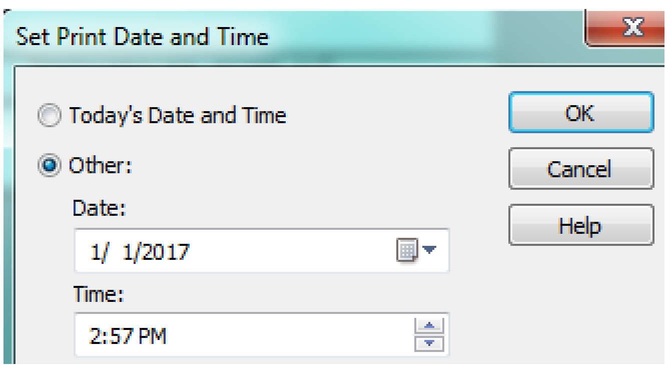
- To limit the number of records previewed:
    - In the Menu Bar click *View*.
    - Select *Preview Sample…*
    - Select *First* and type in the number of records you would like the report to run with. This is particularly helpful when you have large numbers of records to deal with.



Set Print Date

Sometimes reports use the *PrintDate* function in formulas. This is just as it sounds, it uses the current date. If you need to try the report on a previous date that is known to meet certain criteria on that date then the Printdate can be set to a specific date.

- In the Menu Bar click Report.
- Select *Set Print Date and Time…*
- Select *Other*
- Fill out the desired Date and Time



> *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.

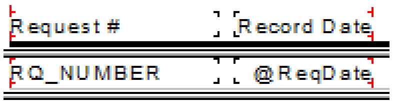
- If you place the cursor over the **Request #** box, *Text Object* appears. This means that **Request #** is a group of characters that can be modified. This is a column header that was manually typed in.
- If the cursor is placed over **RQ_Number**, it shows the table (WKREQ), field name (RQ_NUMBER) 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

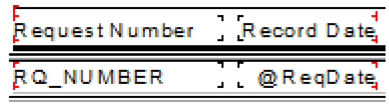
In the example report, **LC_ReqSum.rpt,** we will change the text object field **"Request #"** to **"Request Number"**.

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.



change to



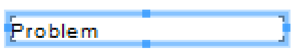
Field Sizing

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

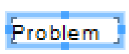
Resize a Text Box:

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 curser 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

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.

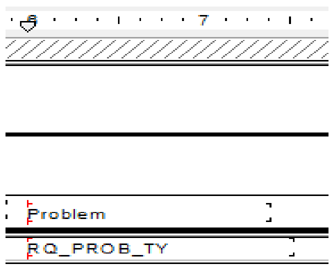
   The click and drag feature, as well as the adjustment of the box size, are done to the highlighted box with the four dark marks on the edges (anchor box). Multiple fields may be copied or cut as a unit as well.

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.

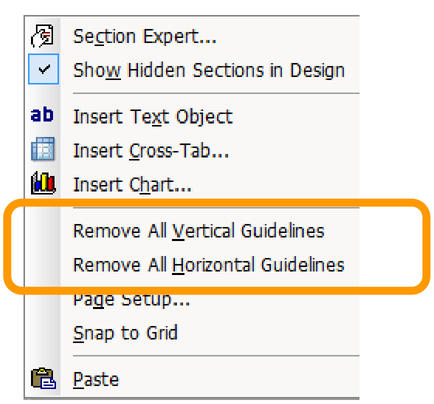


   c. To move the fields attached to the guideline, click on the ruler marker and drag it to the new location. (about 6 5/8”) This will move any fields attached to the guideline.

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 Lucity 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*.



Example 3

Add a Text Object

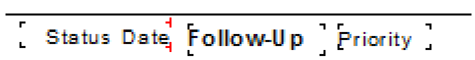
Make sure there is room to add the text object.

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.

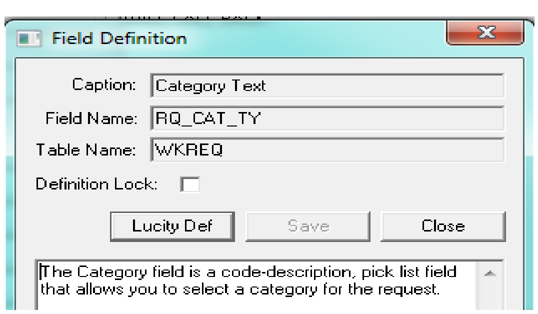
4. Click (release – don’t drag) on *Insert Text Object* . The cursor turns into a plus sign.
5. Click on the location where the box is to be inserted. Just to the right of the **Status Date** text object.
6. Type in the desired text (**Follow-Up**).
7. Click out of the box when you are finished.
8. Resize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



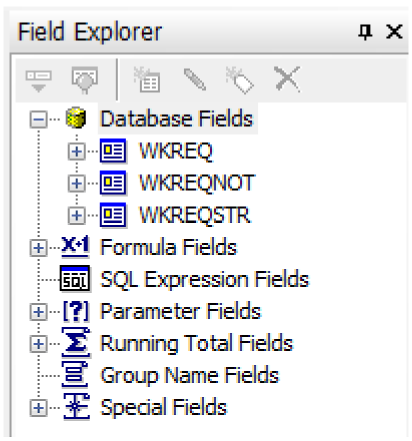
Note: Sometimes fields that have a code box and a text box will only show the field definition of the code portion. The only difference with the text portion is that the field name would end in ***TY*** *rather than* ***CD****.*

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.

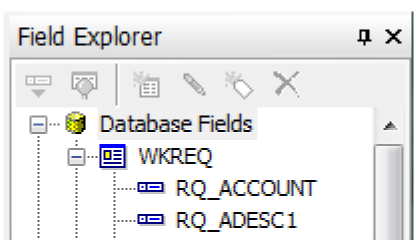
4. Return to the report. Then, complete the following steps to add the new field.

    a. Open *Field Explorer*.  (Also under "View" in the top menu bar.) This may already be open on the right of the report.

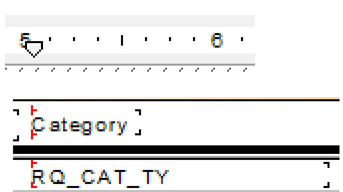
    b. Open *Database Fields* (click on the + sign).



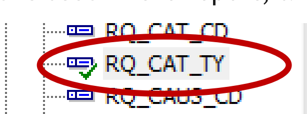
    c. Open the **WKREQ** table (click on the + sign).



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



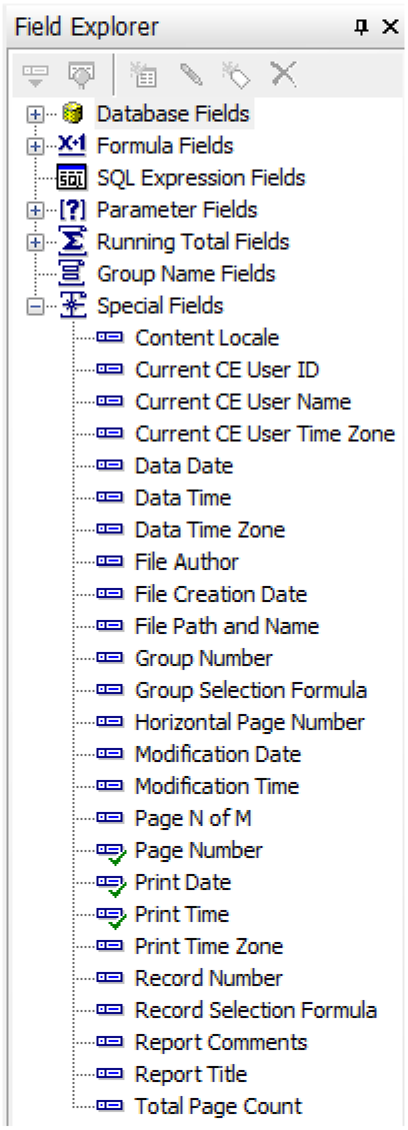
When a field is used in the report, a check shows up next to it in the *Field Explorer*.



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

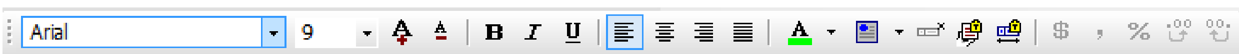
A field that is used in a report can be copied and used elsewhere in the report. There are various methods for doing this.

- Click on the field(s) and:
  - Right click *Copy* and then right click *Paste* to the new location.
  - Ctrl **C** to copy then Ctrl **V** to paste in the new location.
  - 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 <u>underline</u>. 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.

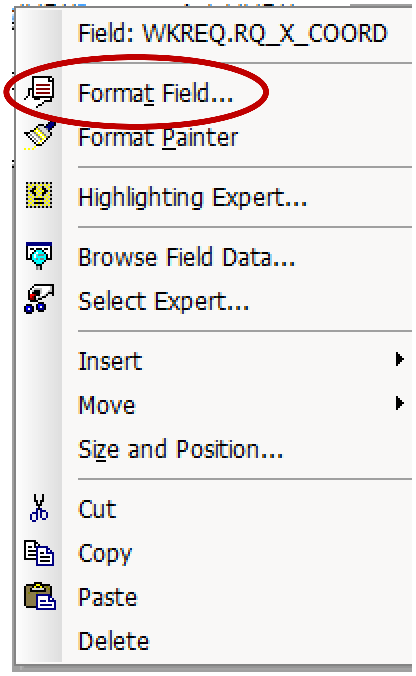
Loc X Coord.	43.63871944
Loc Y Coord.	-116.24135134

Number Formatting

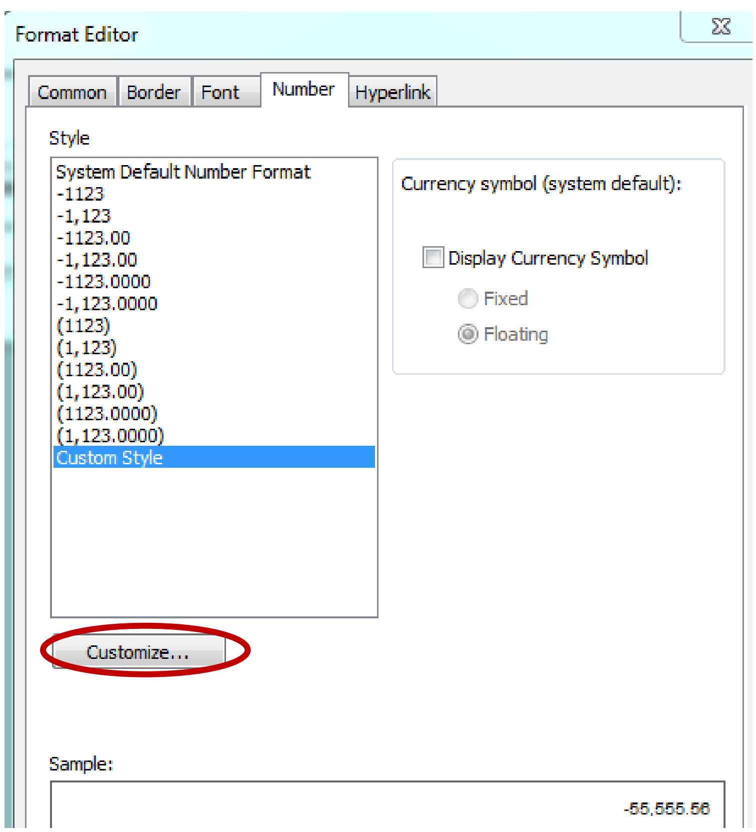
Number fields may require formatting for many reasons such as decimals, rounding, negatives, field size where the value is showing ##### or the numbers are cut off. The field size can either be increased, or the field can be reformatted to remove the decimals.

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

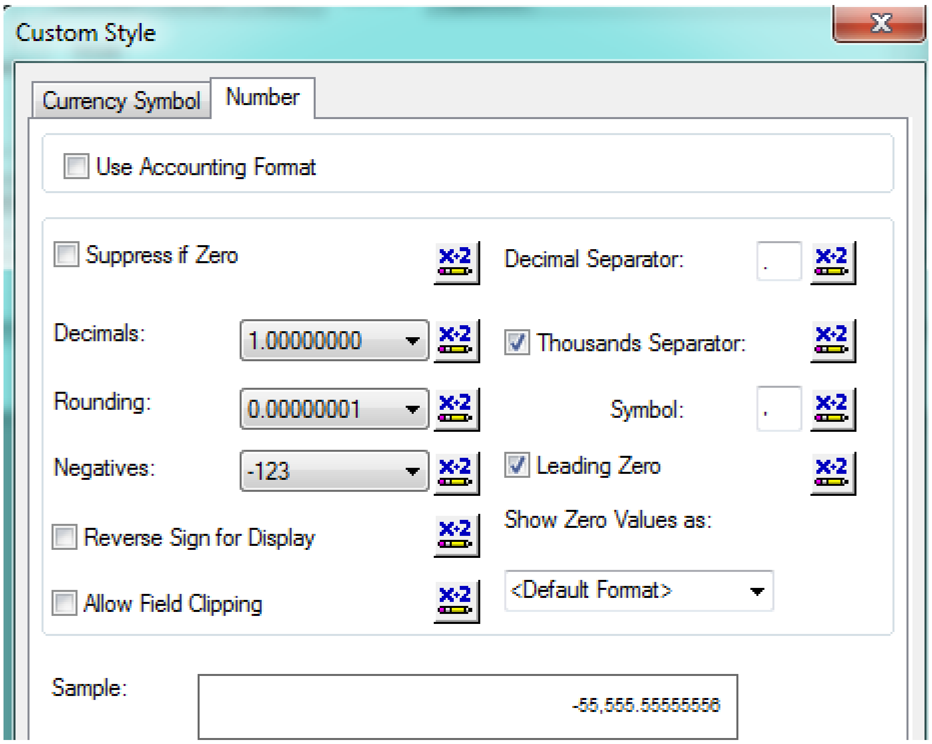
1. Right click on the field and select *Format Field…*.



2. Click on *Customize…*

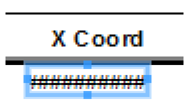


3. Click on the down arrow next to “Decimals:” and select the correct option for the number of digits.
4. Repeat for “Rounding”.



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

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



7. 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.*

Example 4

Alignment of Fields

1. Shift click on all fields to be aligned.

   OR - use a lasso. Click hold and drag to form a box around fields to highlight.
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.*

Example 5

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.

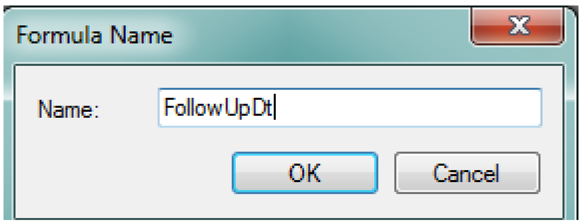
Each field's format can be set case by case to either show the date or time portion but the best practice is to handle the *DateTime* fields with a formula. The formula will take out the required portion of the field.

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

Date Fields

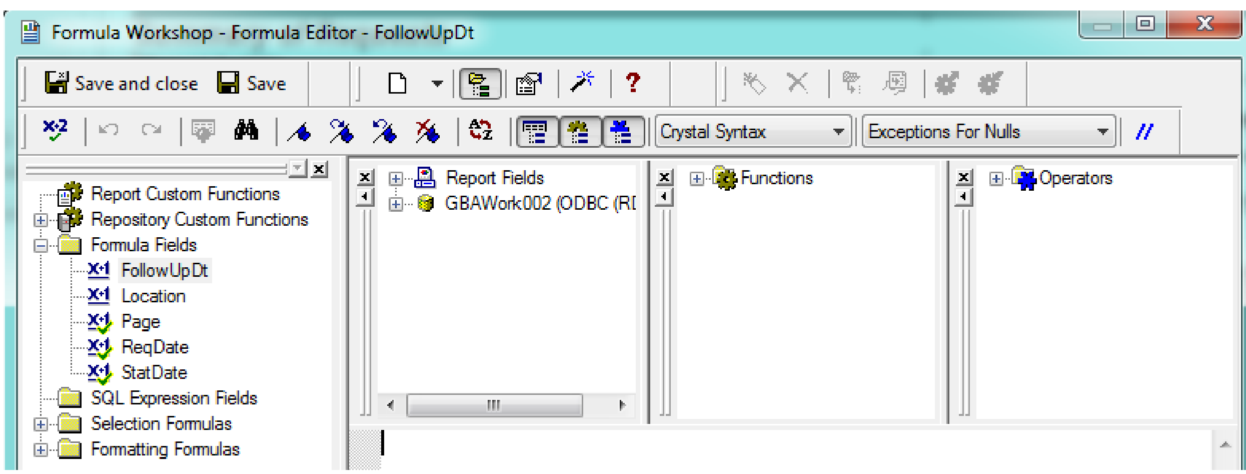
In our example, we will add the **Follow-Up Date**.

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



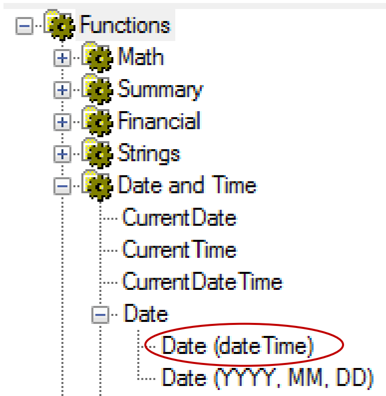
4. *OK*

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 work space of the Formula Workshop:

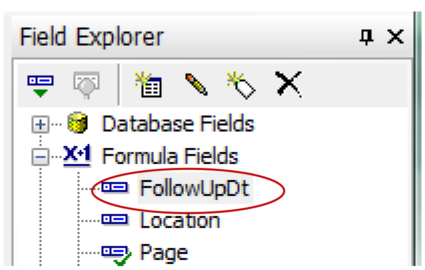
   Date()

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**. The final formula will look like this:

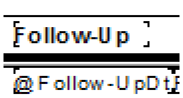
```
Date({WKREQ.RQ_FLLW_DT})
```

13. Click *Save and close*.

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

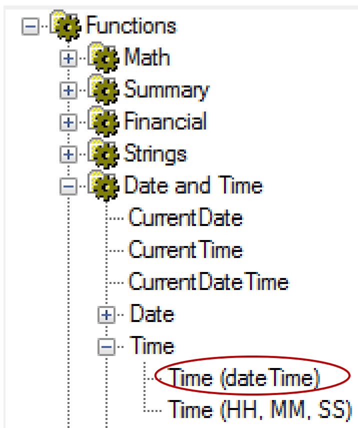


14. Drag the new formula field into the *Detail* section, under the **Follow-Up** column header.



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.

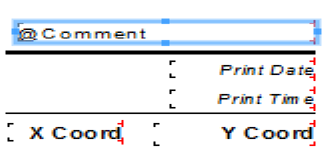
Documentation Comments

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.



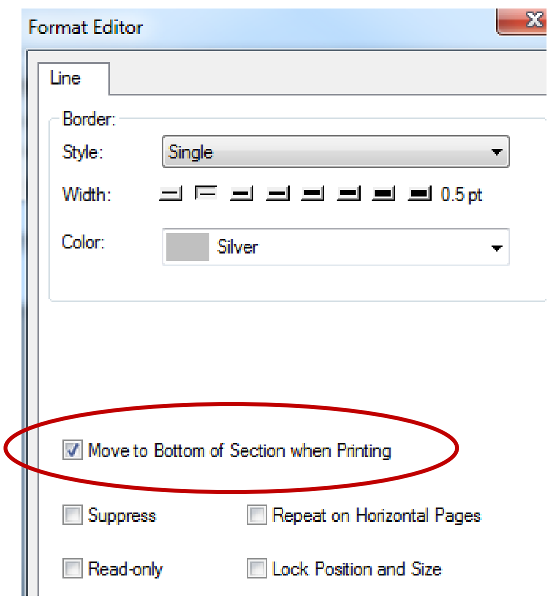
Inserting Lines and Boxes

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.

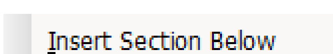
1. Click on *Insert Line* . This turns the cursor into a pencil.
2. Place the pencil point wherever you would like to insert the line in the report. Then, drag the line across the screen until you have reached the desired length.
3. The line characteristics can be modified by right clicking on the line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



The "I" is underlined.

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

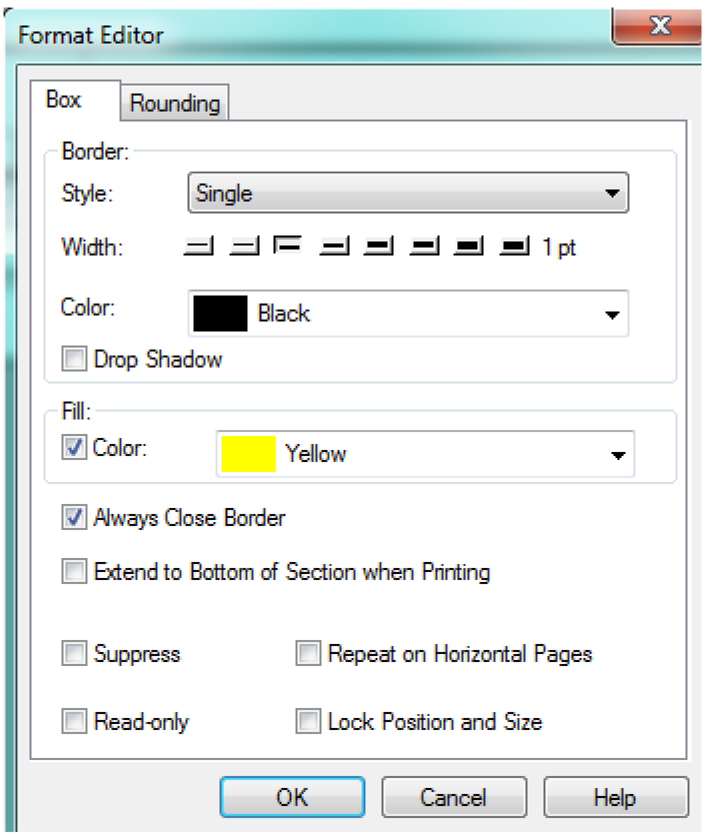
Example: Details a, Details b, Report Footer a, Report Footer b…

Example 6

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*



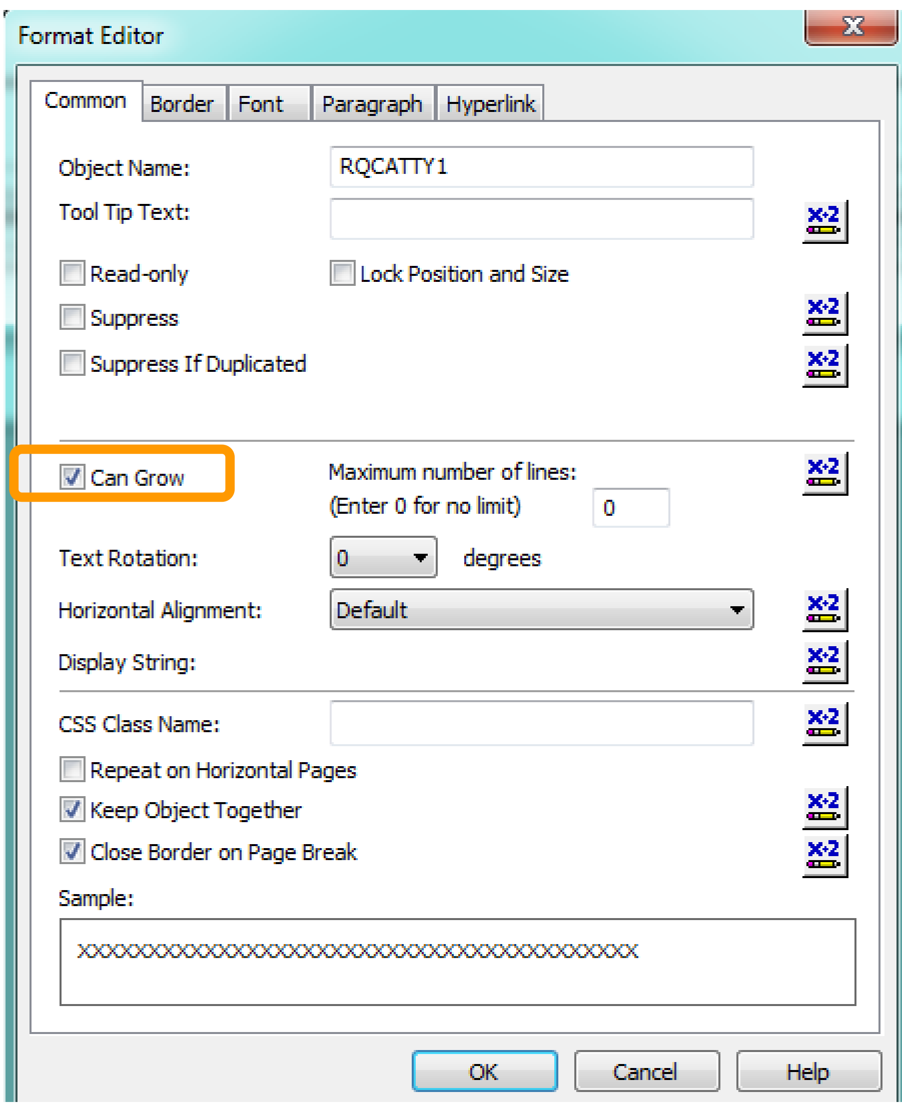
Example 7

"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.
    - The "Maximum number of lines" should be "0" to see all of the data in the field. This will scroll the data vertically. If the *Can Grow* option is unchecked then in most cases the data will cut off when reaching the limits of the field size. This is not the case for the Advanced View in the Web. The field will grow horizontally to the right and overlap any field to the right. This can be corrected by using the *Can Grow* option with the "Maximum number of lines" set at "1".



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*. Example 8

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:

In **V2016r2** there are two new options available through the Admin Portal to suppress the subtitle parameter for Dashboard and/or Web reports.

Inserting an Agency Logo

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*.

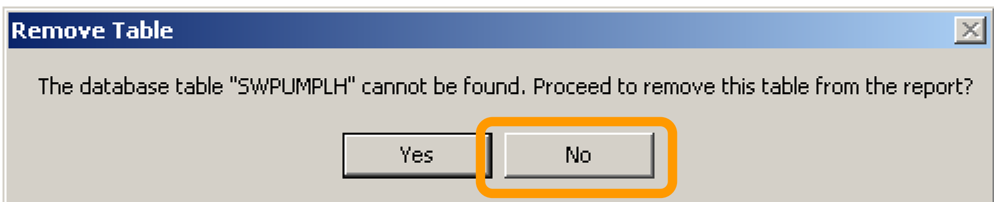
   OR

   - Click on the *Insert Picture* icon .

3. 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.

Datasource

If standard reports are copied and pasted instead of exported and then run or verified in the Crystal software, the original Lucity 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:

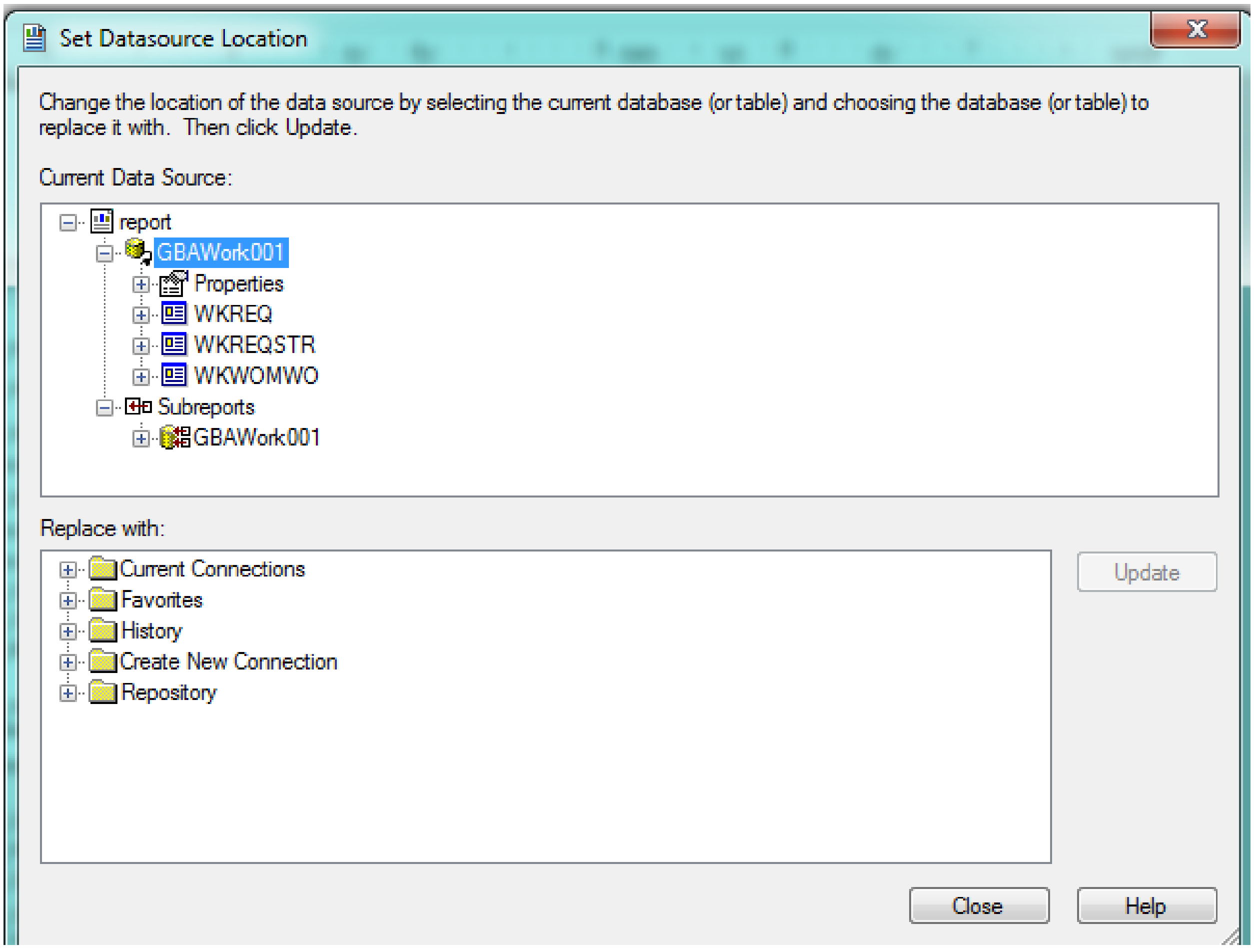
- Delete this copied report and export the report from the Lucity module. This process was explained previously.
- You can manually point each table in the report to the correct datasource.

The above options will repoint 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.

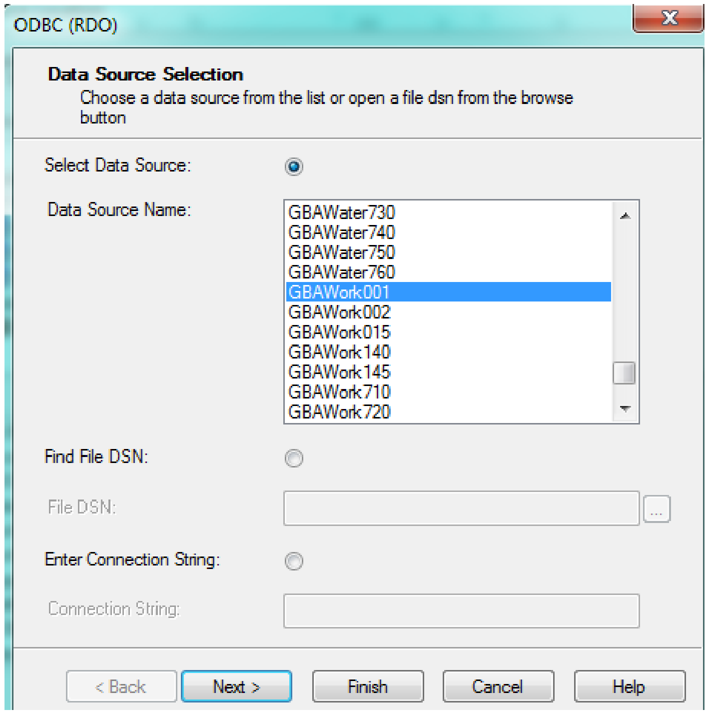
1. Within the open report, click on *Database* in the toolbar at the top of the screen.
2. Click on *Set Datasource Location*. The following dialog will appear:



3. In the bottom window, open the *Create New Connection* folder.

Desktop

For Desktop open *ODBC*.

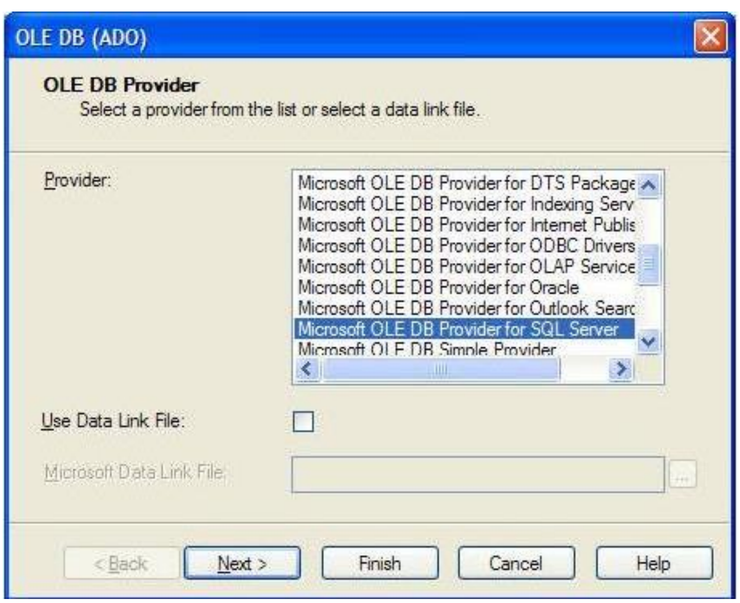


In the ODBC dialog, click on the correct Datasource name and then click *Next*.

- For example, here we've selected GBAWork001. If you have a Unified database you may see Lucity

Web

For Web 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. Then click *Next*.

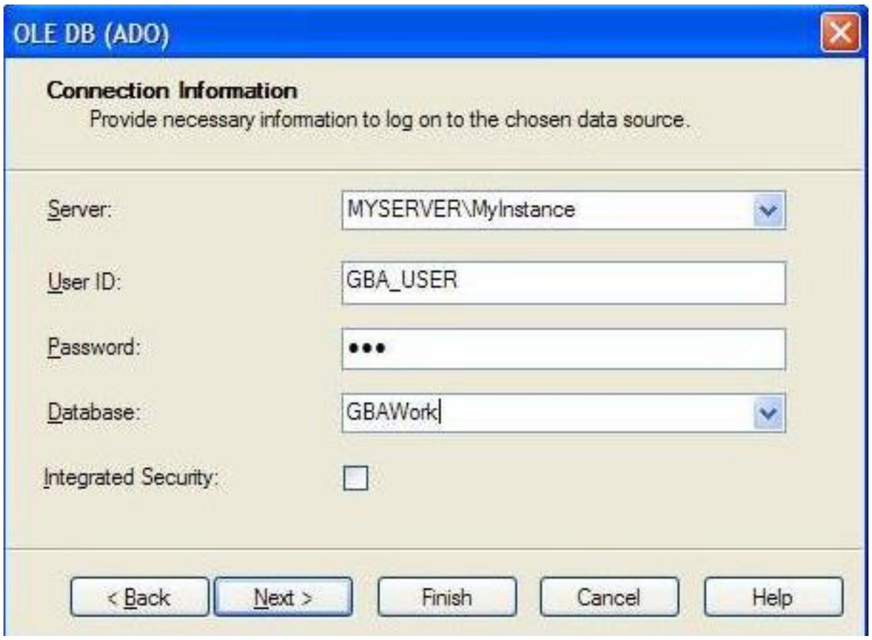


For Oracle your will select *Microsoft OLE DB Provider for Oracle*. Then click *Next*.

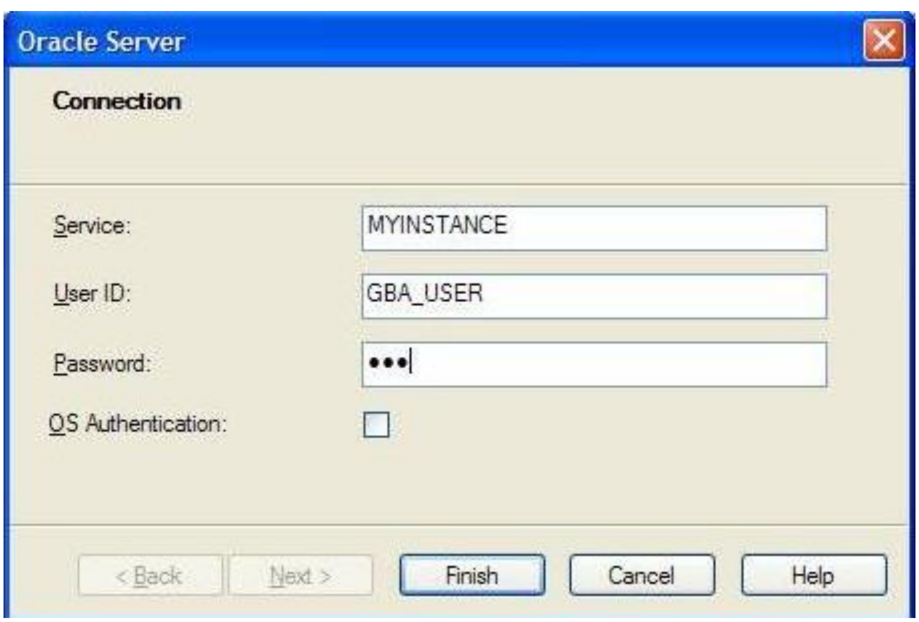
Desktop or Web

At this point you need to know the server for the Lucity data and the User ID and Password. This is specific to your agency. Lucity does not have this information!

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

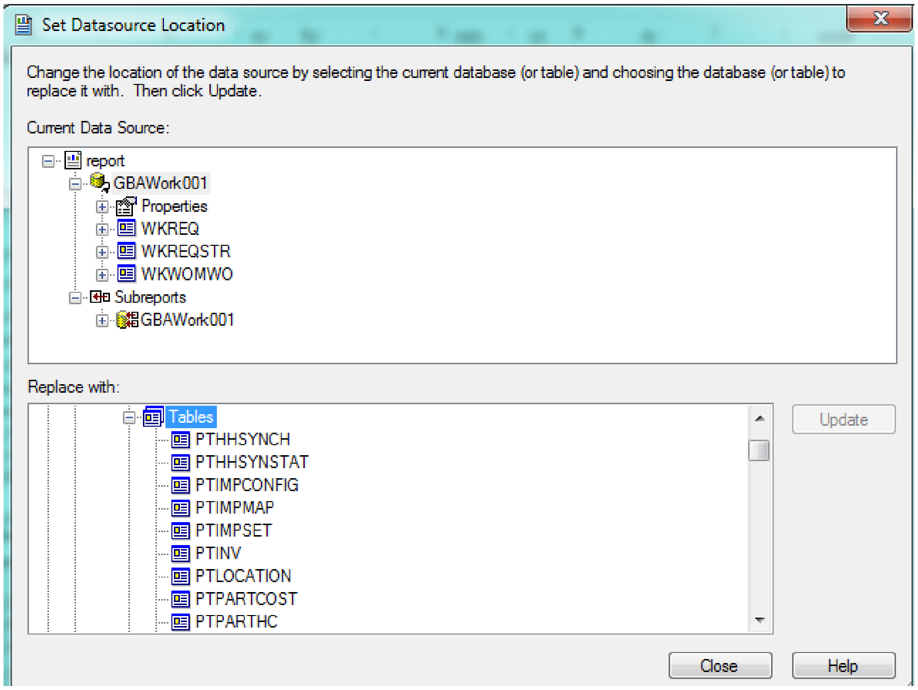


    - For **Oracle**, include the Service, User ID, and Password.



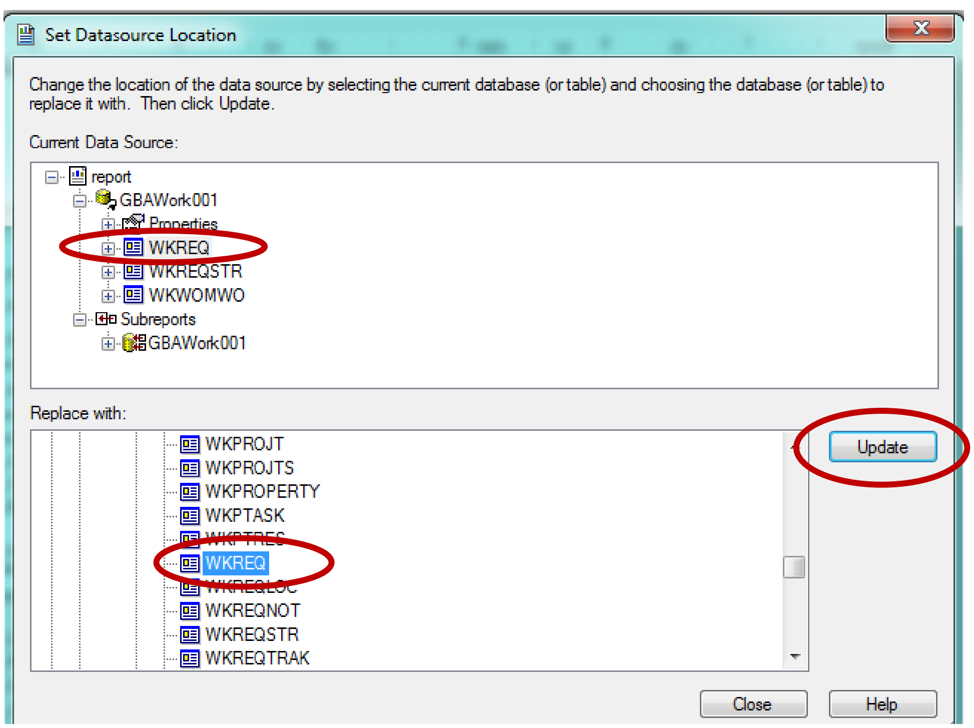
Once you create a connection you will need to individually (manually) map every table from the report one at a time. Don't forget the tables in the Subreports!

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



6. 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***.

   - As you can see in the example below, we've selected the **WKREQ** table in both windows.

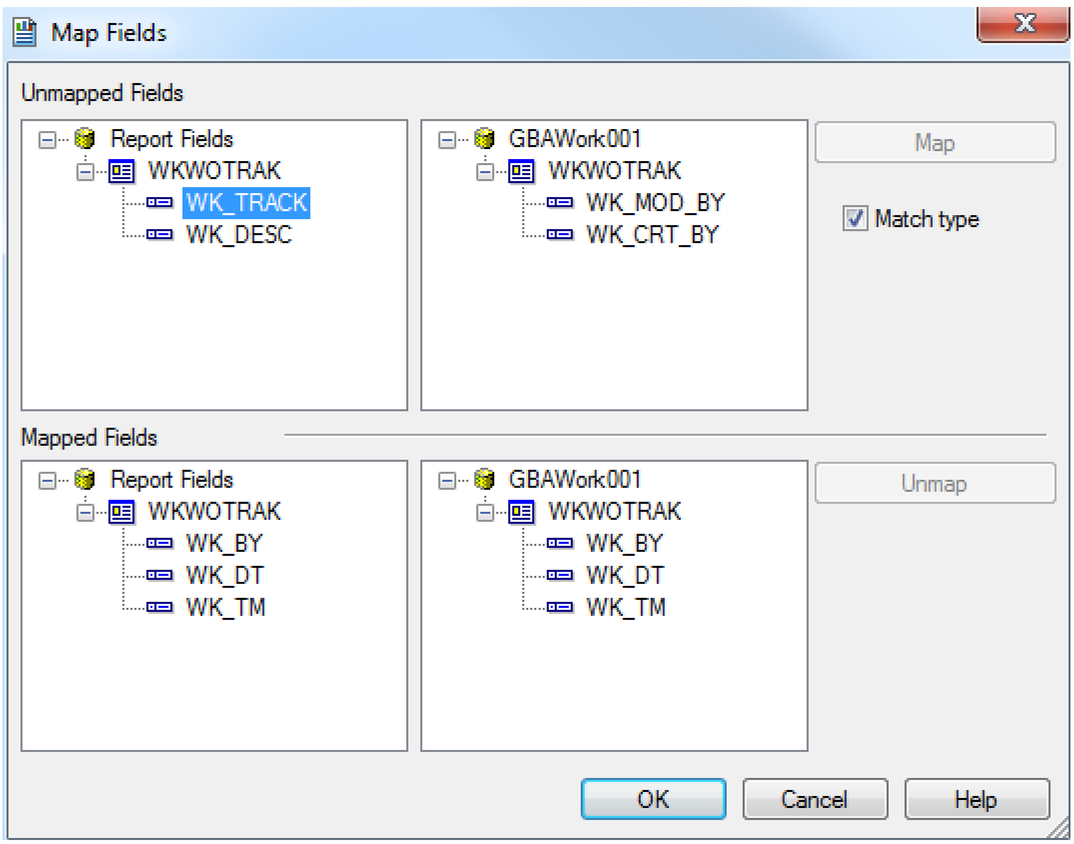


7. After updating each table listed, click *Close*.

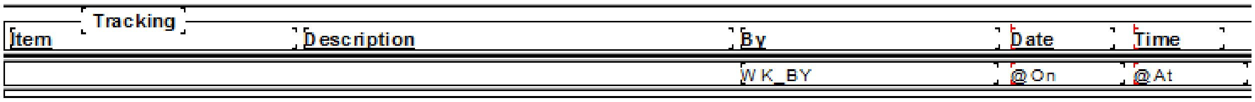
Note: Make sure to perform these steps with the Subreport tables as well!!

Note: If the matching table names don't appear in the bottom window, open the ***Synonyms*** *or* ***Views*** *tables and look for them there. Once the database is unified (version 2015R2 or later) Synonyms or Views should not be necessary unless the client has created a special View. If the database is unified and the table list cuts off, not showing the bottom of the alphabetical list, then check the Options Database tab and make sure the "****Stored Procedures****" is unchecked.*

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.



- 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 desktop Lucity report to a Web report, complete the following steps:

1. Make a copy of the desktop report and give it a new name (maybe add Web to the end of the file name). Open the Web report in Crystal Reports.
2. Go to *Database* >> *Set Datasource Location*.
3. Follow the steps for repointing the tables for OLE DB (ADO) connection as described in the previous section.

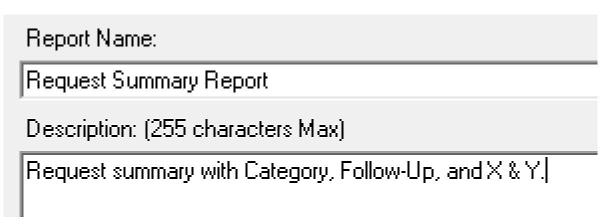
> *Note: The converted report needs to be added to the appropriate module in Web.*

Adding a Report to the Module

Desktop

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.

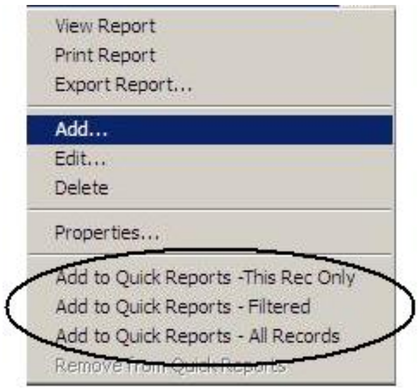


7. Select *Save*. This report is now available to be used within the module.

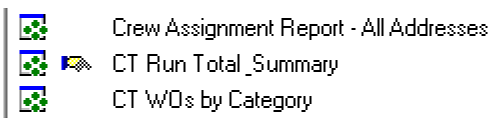
Accessing Reports in Lucity - Desktop

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.

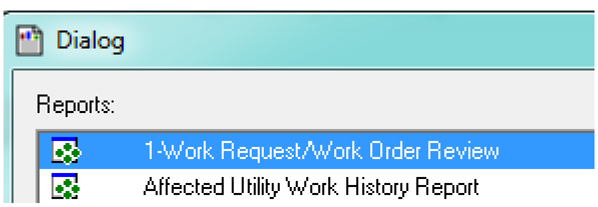
Right click on the Report Title and select the type of Quick Report you would like saved. This setting is on a User Login basis. This allows various users to set up their own Quick Reports in whichever manner they'd like to see them.



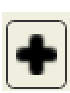
The report will be displayed with the hand  icon before the report name.



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.



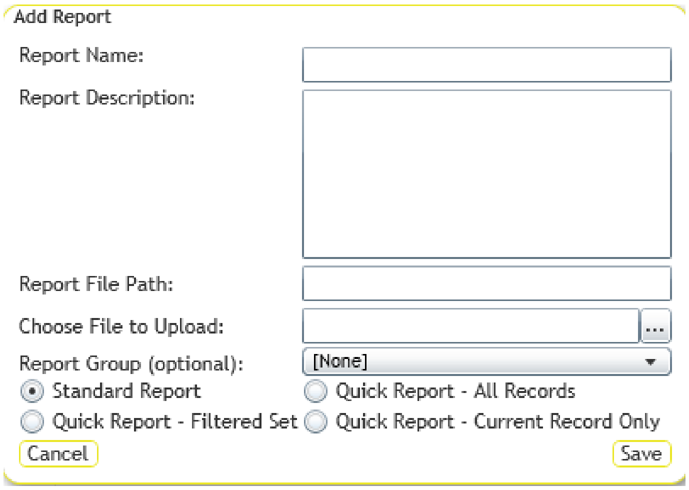
Web

 or 

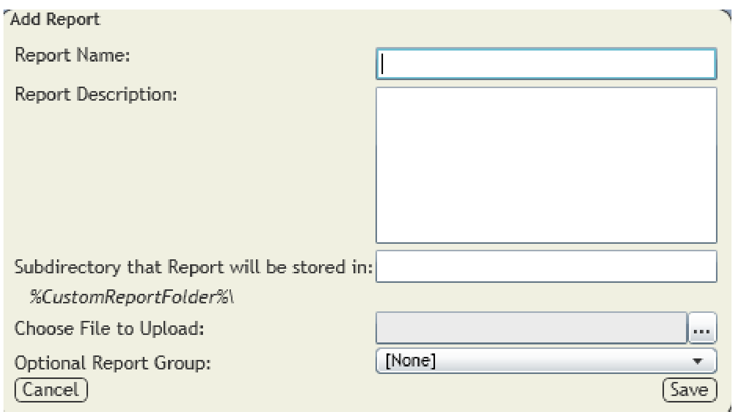
Going forward, when adding new custom reports, upload the report using *Lucity Web*. The system will place the report in the report-share automatically.

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:

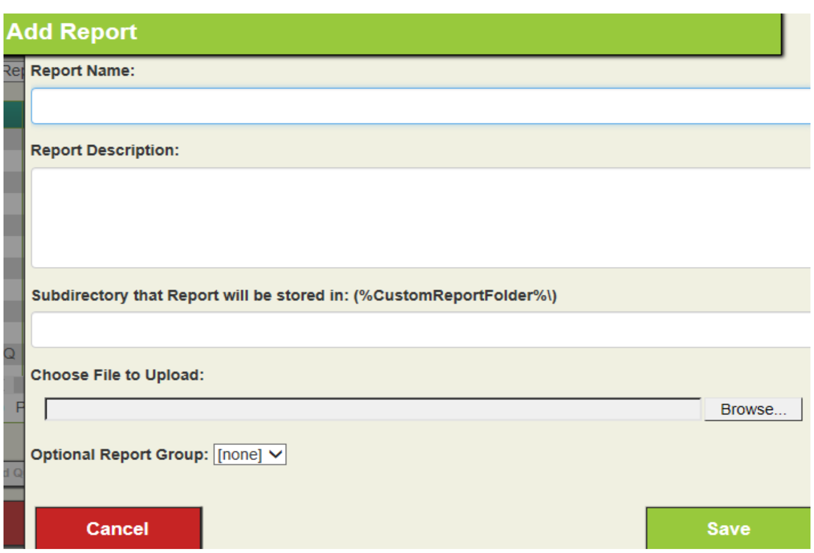
V2015



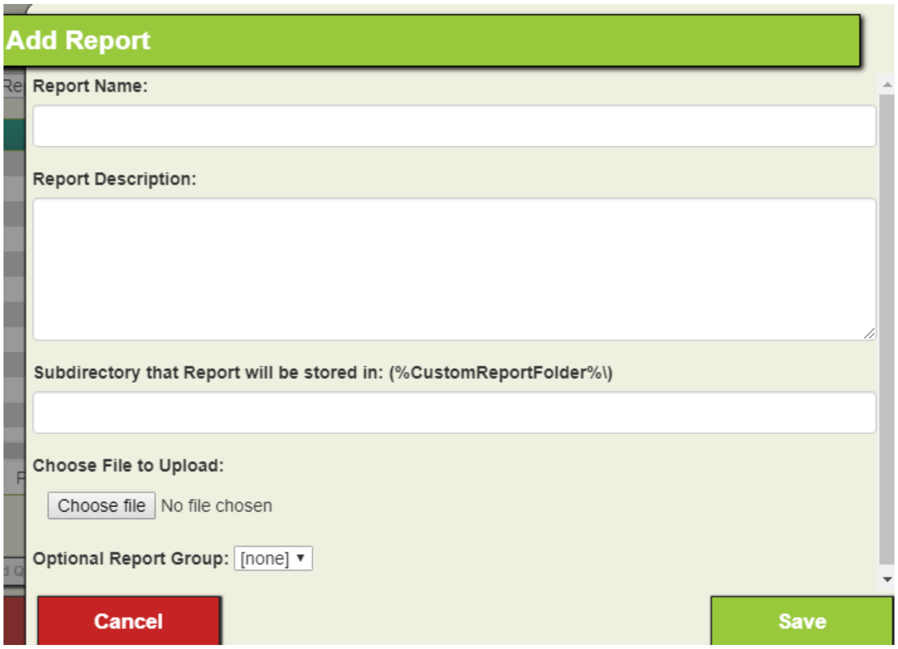
V2015r2



V2016



V2017



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 or Reporting tab depending on the Lucity version)**.*
>
> ***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.*

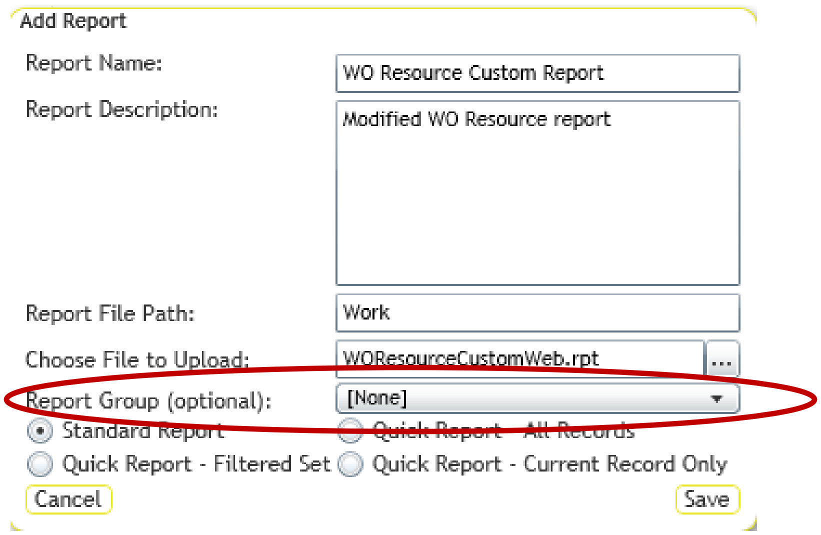
6. Under *Choose File to Upload,* click the Browse button  and select the **.rpt** file you would like to upload to the web server. The report would ideally be located in the folder established in Step 1 at the top of this document (**CompanyCustomWebReports**) or a subfolder within; however, it can 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.*

Accessing Reports in Lucity – Web

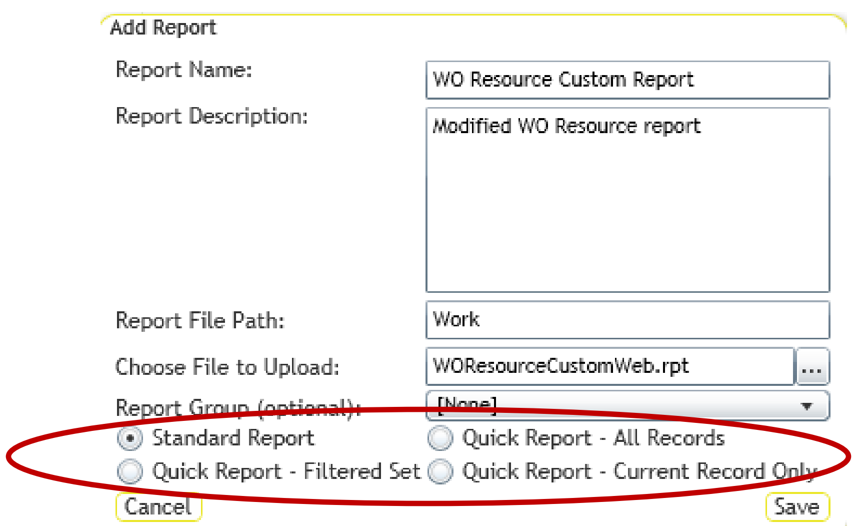
V2015

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



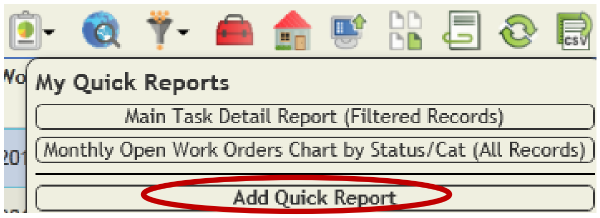
Choose or change the *Type* of report:

- **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.**



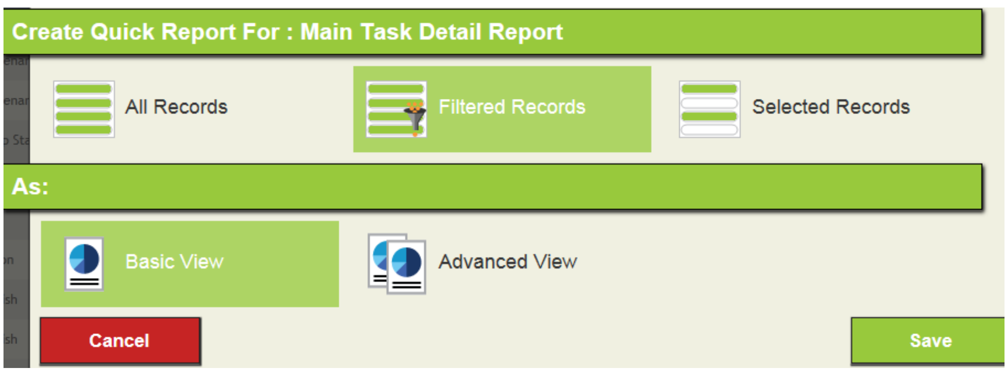
For **V2015r2** these options are available in the Edit mode.

For **V2016 and newer** the Quick Report option may be added through the Quick Report drop down arrow 



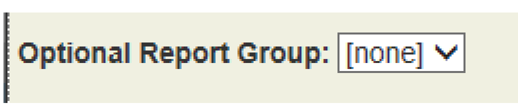
Or through the Report tool where the reports are listed. Click on the report to be setup as Quick then select **Add Quick Report** 

. The Create Quick Report dialog will open where the various reporting options can be setup.



Groups can be setup or deleted in the **Manage Report Groups** option found in the Report Dialog.

Reports may be assigned to groups in **Add** or **Edit** mode.



Example 9