DataLink Viewer 2011

View, Print, Export, Inspect, Schedule, and Auto-Refresh Crystal Reports

www.MilletSoftware.com

Version 6.9
January 2024

By

Millet Software
5275 Rome Ct.
Erie, PA 16509-3951
ido@MilletSoftware.com
(814) 825-6009

Disclaimer: This software is provided "as-is" by Millet Software without assuming any responsibility for harm to computer systems, software, or data with which these files are used.

Introduction

DataLink Viewer 2011 uses the Crystal 2016 runtime components and allows you to run Crystal reports from version 7, 8, 8.5, 9, 10, XI, 2008, 2011, 2013, and 2016.

While the creation and design changes of Crystal reports (.rpt files) require the full **Crystal Reports** software, you can let other PCs view, print, and export these reports by installing **DataLink Viewer**.

DataLink Viewer provides several useful features such as **command line API** (allowing you to **schedule printing** and **trigger viewing** of reports from your application, task scheduler, batch files, or desktop shortcuts), an intuitive Grid for **organizing and selecting previously opened reports**, reduced login frustrations via **integrated authentication**, choice of **alternative data sources**, **selective parameter refresh**, **dynamic and cascading parameters** even for versions prior to XI, **auto-refresh**, **user-based row-level security**, and more...

Main Benefits:

1. **Refresh, View, Print, and Export** Crystal reports

2. **Schedule Report Exports or Printouts** (using the free windows task scheduler)

3. **Uses Crystal 2011 runtime components** providing full support for new features such as interactive parameter panel and advanced CrossTabs.

4. **Group Swap Expert allowing** allowing group changes on the fly

5. **Data Visualizer** adding OLAP and advanced charting capabilities

6. **Intuitive Customizable Grid Interface** to classify, organizing, and launch Reports.

7. **Dynamic & Cascading Parameters** (even for pre-XI reports):

    - **Select Live Parameter Values** from linked Crystal reports that act as dynamic pick list data sources or default to using Crystal's static parameters.

    - **Restrict Live Parameter Values** based on choices in a prior live parameter.

    - **Remember Values last used for each Live Prompt** allowing the user to accept or replace those values.

8. **Command Line Interface:** for launching reports from other programs and from other Crystal reports.

9. **Protect & Hide Report Designs** by converting your rpt files into rpz files. Your users can run the resulting rpz files in DataLink Viewer, but cannot view or modify them in Crystal. To completely protect report designs, DataLink Viewer blocks exporting of rpz files to rpt or report definition files.

10. **Filter Data based on User Login**.

11. **Export & Print Reports Directly** (without previewing)

12. **Remember Last Export Format and File Name** for Each Report.

13. **Auto-Refresh Reports**

14. **React to User Actions in Useful Ways (requires special formulas):**

    - **In-Place Drill Down** (https://youtu.be/3CmayJMAImE)
    - **Click to Group/Sort** (https://youtu.be/oGbzdY1D7ZQ)
    - **Click to set a formula value**
    - **Click to prompt for and pass a value to another process**

15. **Selective Parameter Refresh:** When refreshing a report, **users can select which parameters they wish to change**. This avoids tedious re-entering of values for the other parameters. The parameter refresh choices are stored for each report and can be easily reused or changed at a later session.

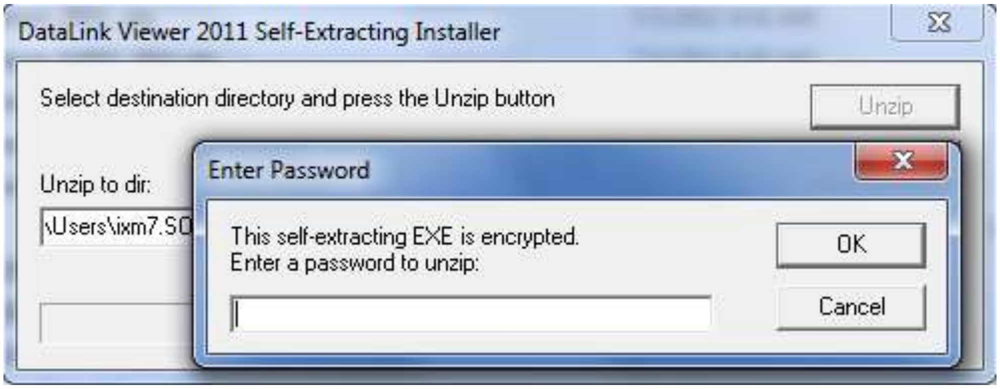
16. **Integrated Authentication:** use Windows User Login and Machine ID to remove the need to repeatedly authenticate to data sources.

17. **Reduced Memory Requirements** compared to Crystal and other viewers.

18. **Select Different Data Sources** for the same Report.

Install / Remove

The exe file you downloaded self-extracts to 2 files: a setup.exe and an msi file.
First, it will prompt you to provide a password:



DataLink Viewer 2011 Self-Extracting Installer

Select destination directory and press the Unzip button

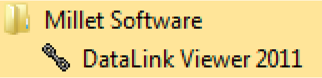
Unzip to dir: \Users\ixm7.SO

Enter Password

This self-extracting EXE is encrypted.
Enter a password to unzip:

It automatically triggers the setup.exe to check for and download/install any missing prerequisites such as the .NET framework and the Crystal 2011 runtime components.
It then triggers the msi install of DataLink Viewer itself.

DataLink Viewer 2011 32-bit is installed under the "Program Files (x86)\Millet Software:



Avoid Installation on a Crystal Enterprise Machine:
Due to the risk of rare runtime component conflicts, you should avoid installing the software on a machine that also runs Crystal Enterprise.

SPEEDING UP VIA NATIVE IMAGE

The application folder provides 3 batch files for managing a native image of DataLink Viewer:

NGEN_4DLV_Install.cmd	to install a native image of the app for faster startup
NGEN_4DLV_Check_Status.cmd	to check status of the native image
NGEN_4DLV_Uninstall.cmd	to uninstall the native image

By installing a native image of the application, you avoid Just-In-Time compilation each time the application starts.
You need Admin privileges to run these batch files. Depending on the operating system, you may need to **right-click and 'Run as Administrator'**.

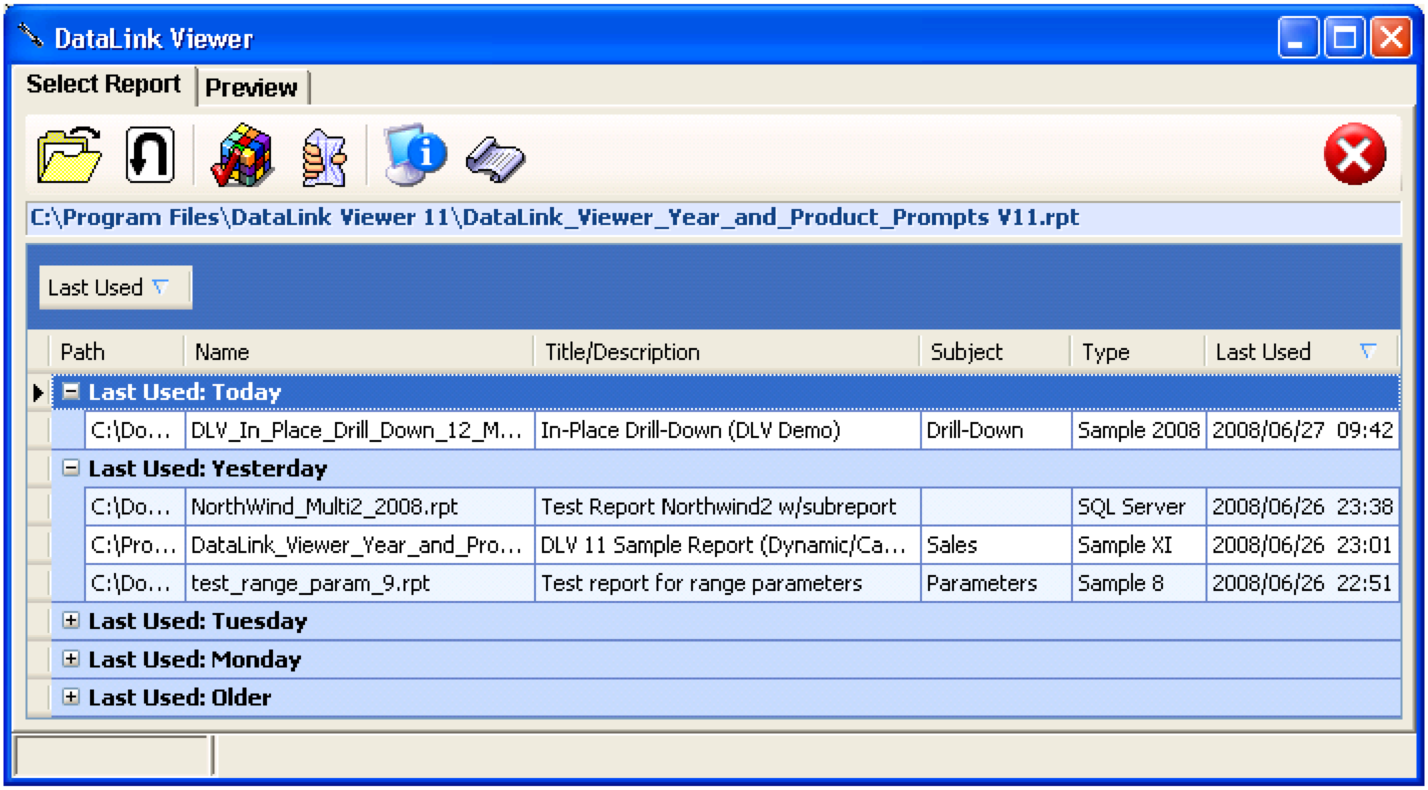
An easier method to generate/remove the native image is provided by a button in the ***Launch*** tab of the ***Options*** dialog. This avoids the need to navigate and manually launch the batch files described above.

Typical Use Scenarios

In a typical scenario, you would select a report to view by double-clicking it. After prompting you for parameter values, the viewer would display the report with all the preview functionality available within Crystal (drilldown, tree view, export, zoom, print).
The report can also be invoked from a desktop shortcut, a batch file, or another program using command line options.

Select Report Window

After starting *DataLink Viewer*, you would see a screen similar to this:



C:\Program Files\DataLink Viewer 11\DataLink_Viewer_Year_and_Product_Prompts V11.rpt

Path	Name	Title/Description	Subject	Type	Last Used
Last Used: Today					
C:\Do…	DLV_In_Place_Drill_Down_12_M…	In-Place Drill-Down (DLV Demo)	Drill-Down	Sample 2008	2008/06/27 09:42
Last Used: Yesterday					
C:\Do…	NorthWind_Multi2_2008.rpt	Test Report Northwind2 w/subreport		SQL Server	2008/06/26 23:38
C:\Pro…	DataLink_Viewer_Year_and_Pro…	DLV 11 Sample Report (Dynamic/Ca…	Sales	Sample XI	2008/06/26 23:01
C:\Do…	test_range_param_9.rpt	Test report for range parameters	Parameters	Sample 8	2008/06/26 22:51
Last Used: Tuesday					
Last Used: Monday					
Last Used: Older					

Use the button to browse for and open a report for the first time. Previously selected reports are listed in a grid and can be launched by **double-clicking** or by **Right-Clicking** or by selecting and clicking the Preview Tab.

Use the button to reload a report (if changed and saved in Crystal).

Use the button to access a dialog for setting various **options**. These options are maintained in the file **DataLink_Viewer.ini**

Use the button to open this **User Manual** inside MS Word.

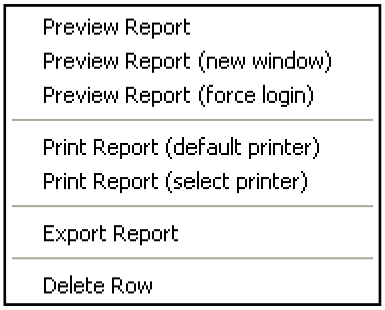
Use the button to **compress & encrypt RPT files into RPZ files**. This allows you to protect and hide your reports designs (either as an intellectual property issue or as a tech support issue). See the section on "Protecting Report Designs with rpz Files" for more detail on this feature.

Use the button to access a dialog with **Version (and system) information**. That dialog also has a button that allows you to check for software patches on my web site and install them online. This patching mechanism is very fast since the patches are typically very small (contain only file changes).

Use the button to **exit** DataLink Viewer.

RIGHT-CLICK REPORT ROW MENU

if you Right-Click a **report row** in the grid, the following popup menu is displayed:


Preview Report
Preview Report (new window)
Preview Report (force login)
Print Report (default printer)
Print Report (select printer)
Export Report
Delete Row

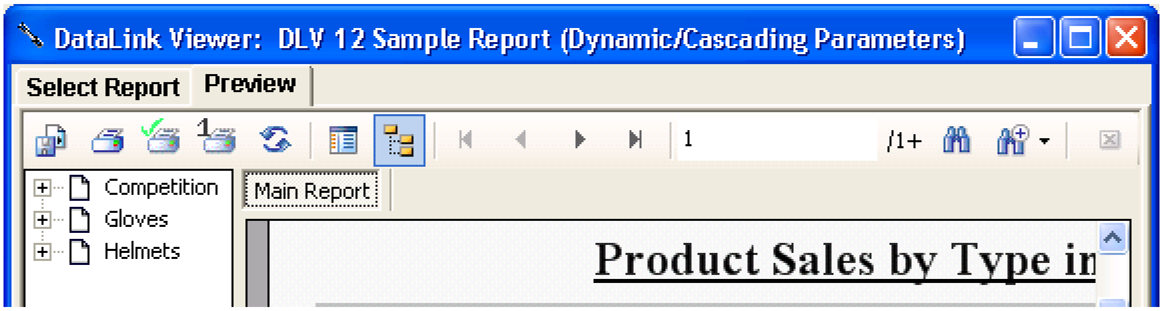
To **delete a report from the grid** (but not from the hard drive) select ‘Delete Row’ from the popup menu or select the report row and hit Ctrl-Delete. The grid information in maintained in a plain text file (**ReportList.txt**).

The other options in the popup menu allow you to **launch a report to a new window**, **force a login dialog (allowing a choice of a different data source)**, and **printing or exporting the report without previewing it**.

When adding a report to the grid, DataLink Viewer populates the **title** and **subject** columns automatically if it finds that information in the **summary information** for the report.
You set that information for the .rpt file in Crystal (under the file, *Summary Information* menu).

Preview Report Window:

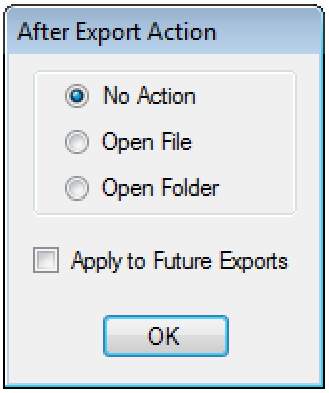
The preview window looks similar to the preview window in Crystal except for a few enhancements:



Export Button (remember export format/file)
The export button "remembers" the last export format and file destination you used for each report. If this is the first time you are exporting a report, the export format and folder will default to those used in the last export.

After Export Action

DataLink Viewer also prompts for (and remembers) the user choice of after-export action:

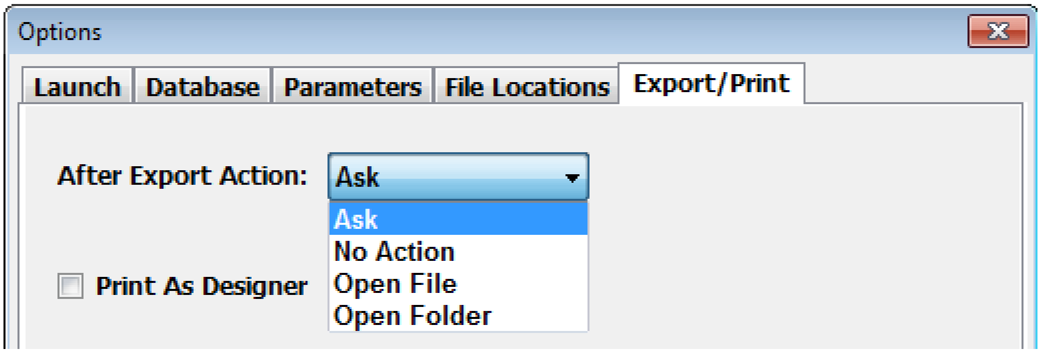


After Export Action

● No Action
○ Open File
○ Open Folder

☐ Apply to Future Exports

This can also be controlled via a global setting under the Options dialog:



After Export Action: Ask
Ask
No Action
Open File
Open Folder

☐ Print As Designer

Email Exported File

If you have Outlook as an email client, you can instruct DataLink Viewer to start a new email message and attach the exported file by adding the following sections to the DataLink_Viewer.ini file (located from the Version info button).

First, indicate what reports are targets for email-after-export action using this section:

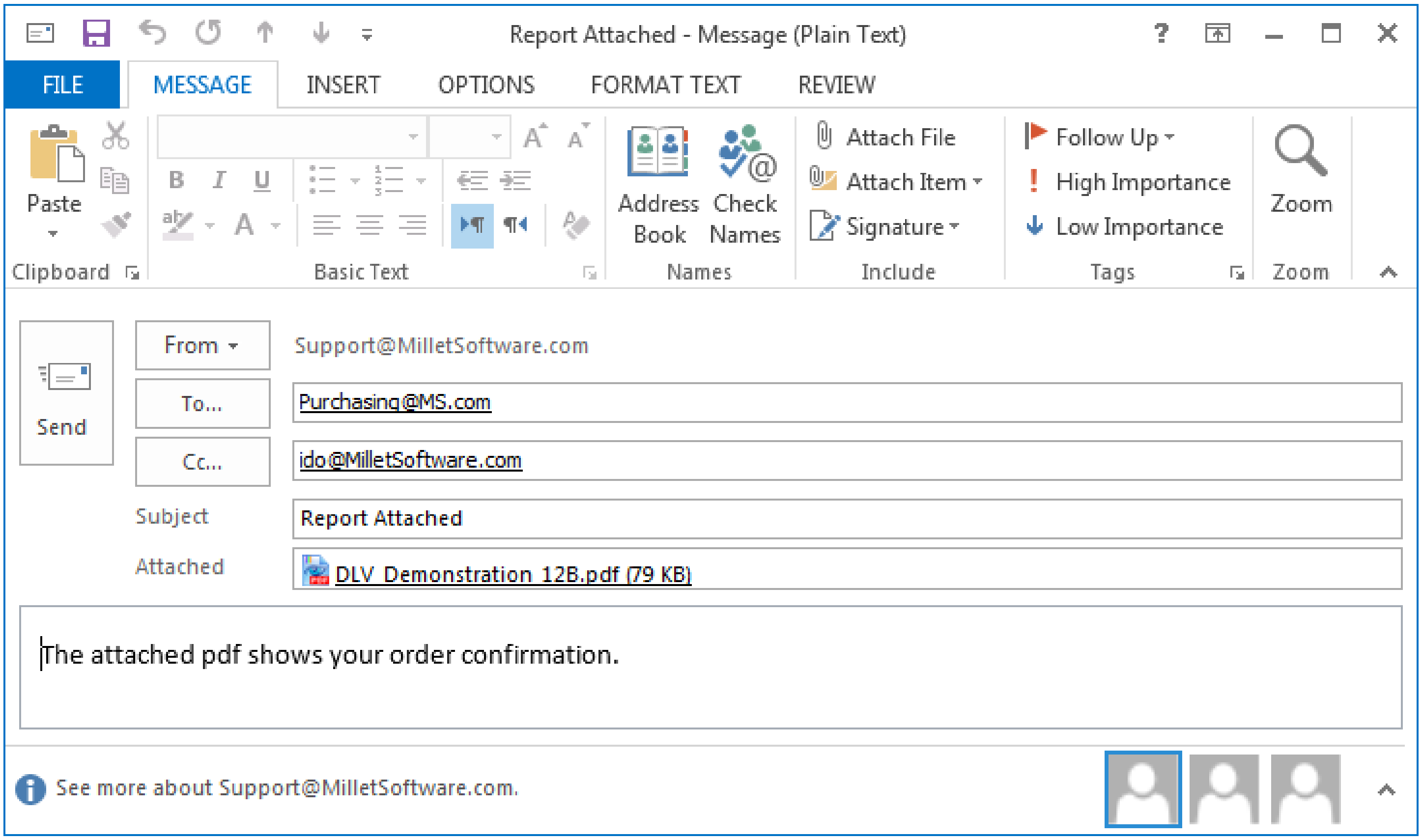
```
[Email_After_Targets]
Reports=||Order_Confirmation.rpt||New_Application.rpt||
```

In the example above, 2 reports will be targeted for emailing via Outlook after they are exported.
Use ||ALL|| if you wish to target all reports.

Then, for each target in the Reports entry above, create an ini section to specify email options. For example:

```
[Email_After_Order_Confirmation.rpt]
Subject=Report Attached
Message=The attached pdf shows your order confirmation.
From=Support@MilletSoftware.com
To=Purchasing@MS.com
CC=ido@MilletSoftware.com
```

Here is an example of an Outlook message popped by DataLink Viewer after an export of a targeted file:



From: Support@MilletSoftware.com
To...: Purchasing@MS.com
Cc...: ido@MilletSoftware.com
Subject: Report Attached
Attached: DLV_Demonstration_12B.pdf (79 KB)

The attached pdf shows your order confirmation.

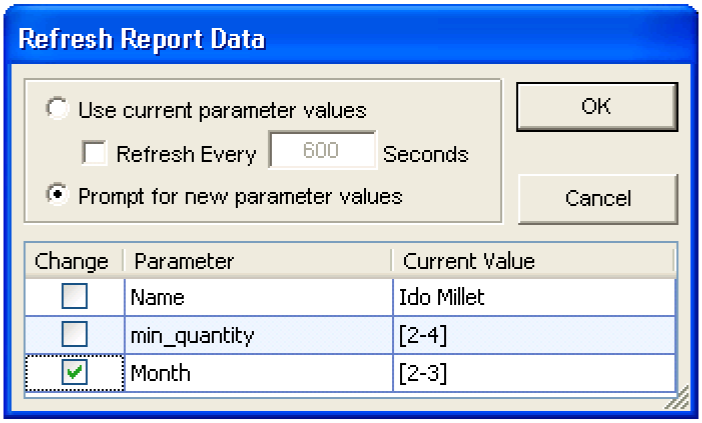
3 Print Buttons

Instead of a single print button, DataLink Viewer gives you:

1. a regular **print** button, which invokes a printer selection and setup dialog
2. a "**Quick Print"** button, which immediately sends the report to the default printer, or
3. a "**Print Current Page"** button, which immediately prints just the current page to the default printer.

Refresh (Auto-Refresh) Button

DataLink Viewer allows you to auto-refresh a report every N seconds and to selectively change the values of only some parameters:



○ Use current parameter values

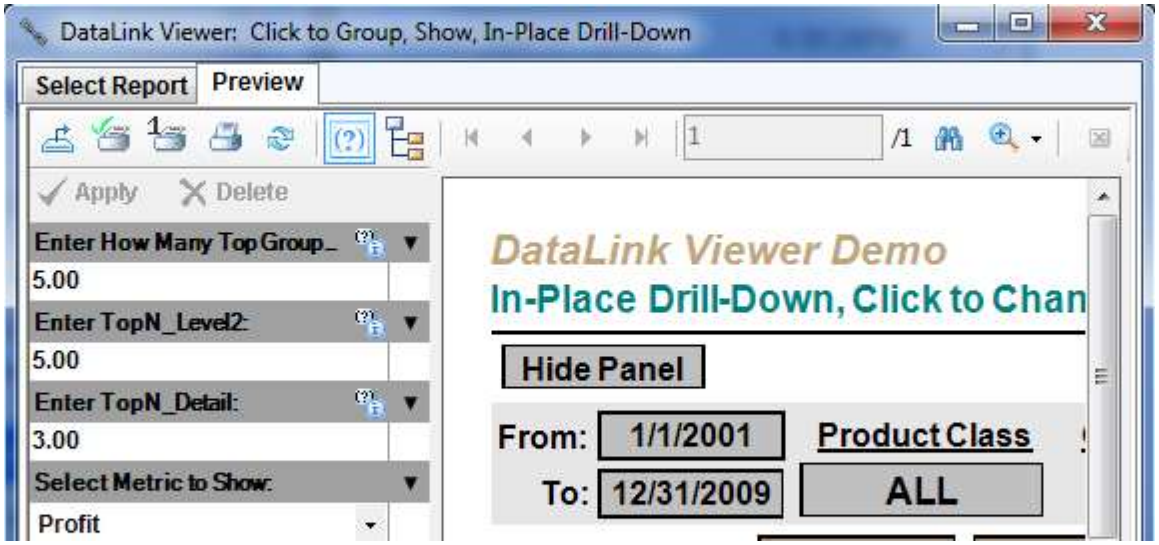
□ Refresh Every 600 Seconds

● Prompt for new parameter values

Change	Parameter	Current Value
□	Name	Ido Millet
□	min_quantity	[2-4]
☑	Month	[2-3]

Interactive Parameter Button

Just like in Crystal, the interactive parameter panel allows you to change parameter values without refreshing the whole report:


DataLink Viewer: Click to Group, Show, In-Place Drill-Down
Select Report
Preview
1
/1
Apply
Delete
DataLink Viewer Demo
In-Place Drill-Down, Click to Chan
Hide Panel
Product Class

Enter How Many Top Group_: 5.00

Enter TopN_Level2: 5.00

Enter TopN_Detail: 3.00

Select Metric to Show: Profit

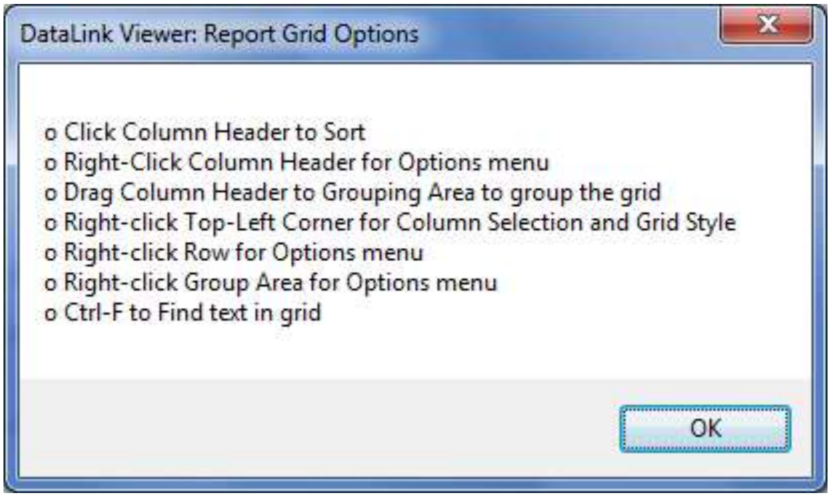
From: 1/1/2001

To: 12/31/2009

Product Class: ALL

REPORT GRID HELP

If you hit **F1** or **Ctrl-F1** while on the Select Reports tab, the following Help window displays:

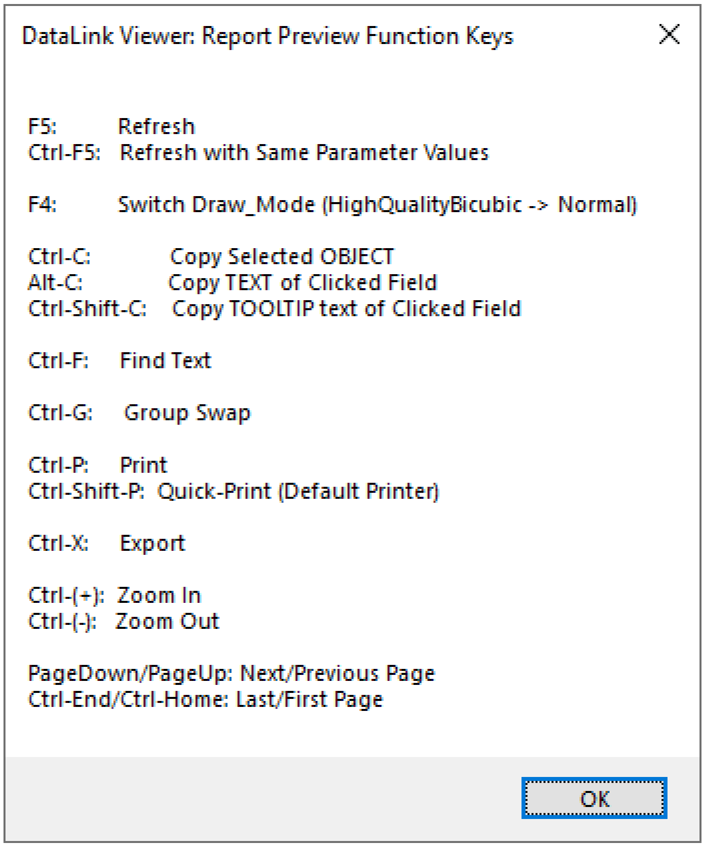


DataLink Viewer: Report Grid Options

o Click Column Header to Sort
o Right-Click Column Header for Options menu
o Drag Column Header to Grouping Area to group the grid
o Right-click Top-Left Corner for Column Selection and Grid Style
o Right-click Row for Options menu
o Right-click Group Area for Options menu
o Ctrl-F to Find text in grid

REPORT PREVIEW HELP

If you hit **F1** or **Ctrl-F1** while on the report Preview tab, the following Help window displays:



DataLink Viewer: Report Preview Function Keys

F5: Refresh
Ctrl-F5: Refresh with Same Parameter Values

F4: Switch Draw_Mode (HighQualityBicubic -> Normal)

Ctrl-C: Copy Selected OBJECT
Alt-C: Copy TEXT of Clicked Field
Ctrl-Shift-C: Copy TOOLTIP text of Clicked Field

Ctrl-F: Find Text

Ctrl-G: Group Swap

Ctrl-P: Print
Ctrl-Shift-P: Quick-Print (Default Printer)

Ctrl-X: Export

Ctrl-(+): Zoom In
Ctrl-(-): Zoom Out

PageDown/PageUp: Next/Previous Page
Ctrl-End/Ctrl-Home: Last/First Page

Selecting a Report to View

Let's launch **DataLink_Viewer_Year_and_Product_Prompts V12.rpt** (installed under the **c:\Program Files\DataLink Viewer 12** directory in typical installations). You can do this by

1) Selecting that row and clicking the Preview Tab, or
2) **Right-Clicking that row and selecting Preview**, or
3) **Double-clicking the row**.

Note: the sample reports assume that you have the Crystal Reports Extreme Sample Database for that version of Crystal already installed on your PC.

Before displaying the report, DataLink Viewer would prompt you for any report parameters and logon information required by the report. **If the report was saved with data**, the viewer would ask you if you want to refresh the data or use the data saved with the report (in which case you would not be prompted for parameter values).

Copying Object/Text From The Report

Object Copy (Ctrl-C)

Ctrl-C copies the selected object. For example, you can copy a **chart**, a **map**, an **image**, or **text with formatting** into an email message.

Text Copy (Alt-C)

After a field/formula is clicked, pressing ***Alt-C*** copies the value of the field as **plain text** to the clipboard. You can then paste that text (using Ctrl-V or right-click editing menu to a target of your choice.

Tooltip Copy (Ctrl-Shift-C)

After a field/formula is clicked, pressing ***Ctrl-Shift-C*** copies the value of the tooltip of that field as text to the clipboard. In Crystal, the tooltip can be set via a dynamic expression…

Use Scenario:

Imagine you have Customer Support Representatives (CSRs) who use Crystal reports to view order history information for calling customers. Frequently, these CSRs need to grab order history information for a specific order within the report, and email that information to the customer. You don't want to display all that history information inside a single field on the report because of formatting and space utilization considerations. But you can accumulate that content using Crystal formula logic into the tooltip expression for a field or a formula. After selecting that field or formula, the CSR can simply hit ***Ctrl-Shift-C*** to copy the content of the tooltip. They can then paste it to an email message using Ctrl-V.

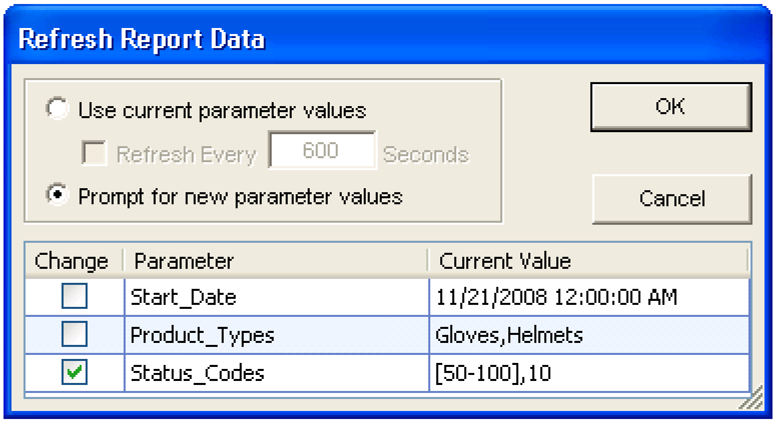
Parameter Functionality

Remember Parameter Values from a previous Session (video demo)

If you refresh or reload the same report, the values you specified last time for each parameter are already selected, allowing you to accept or replace them.

Selective Parameter Refresh (video demo)

When refreshing a report that has parameters, a special dialog allows users to select which parameters they wish to change. These choices are stored for each report for reuse/ change at a later session. **Unlinked** subreport parameters participate in this process and are listed as [subreport name] -> Parameter Name.



○ Use current parameter values

□ Refresh Every 600 Seconds

● Prompt for new parameter values

Change	Parameter	Current Value
□	Start_Date	11/21/2008 12:00:00 AM
□	Product_Types	Gloves,Helmets
☑	Status_Codes	[50-100],10

Notes:

- To remove **linked** subreport stored procedure parameters from this dialog, the parameter name must contain "_Linked".

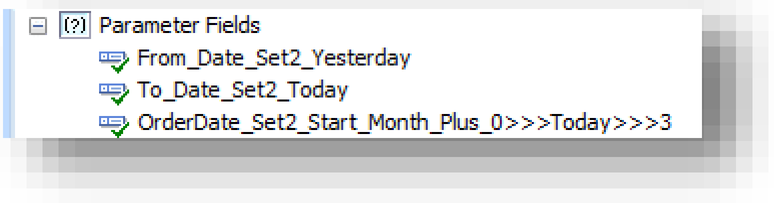
Initializing Parameter Values with Date Expressions (video demo)

If a Date or DateTime parameter name ends with a **_Set2_** followed by a date expression (using date constants), DataLink Viewer initializes the parameter value accordingly. This means that **a dynamic saved value for the parameter is generated on the fly to match the date expression relative to the current date**.
Here is a link to a sample report.
For detail about available date expressions, see the user manual section on Date Constants.

This functionality has two key benefits:

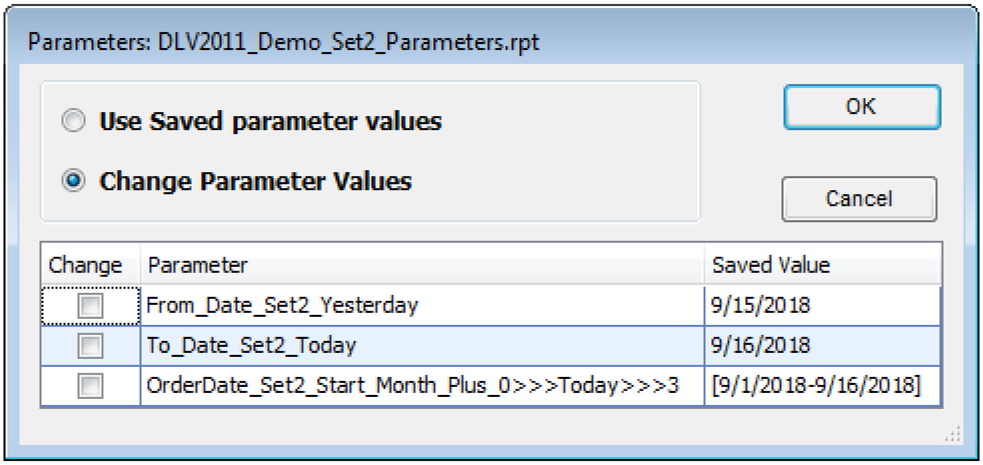
1. It allows users to avoid tedious entry of parameter values.
2. It can improve report performance compared to using formula logic to restrict record selection. This is because formula logic might force Crystal to execute filtering locally, instead of passing the selection logic to the database server via the SQL WHERE clause.

For example, the 3 date parameters shown in the image below get initialized by DataLink Viewer to
a) yesterday, b) today, and c) a date range ranging from start of the month to today, inclusive of the end points.



Parameter Fields
- From_Date_Set2_Yesterday
- To_Date_Set2_Today
- OrderDate_Set2_Start_Month_Plus_0>>>Today>>>3

DataLink Viewer would then show the following dialog box allowing the user to either accept or change these initial values (the displayed dates are relative to a current date of Sep 16, 2018):



Parameters: DLV2011_Demo_Set2_Parameters.rpt

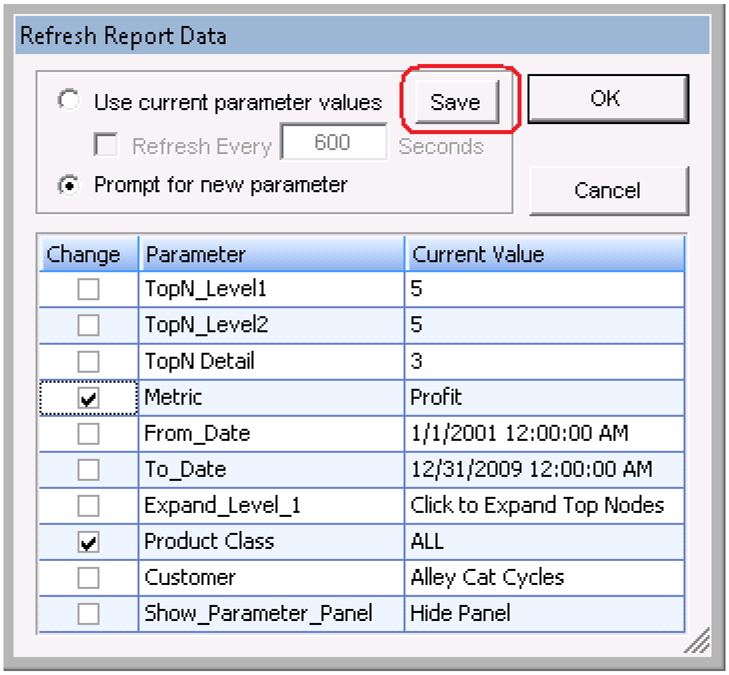
○ **Use Saved parameter values**

● **Change Parameter Values**

Change	Parameter	Saved Value
□	From_Date_Set2_Yesterday	9/15/2018
□	To_Date_Set2_Today	9/16/2018
□	OrderDate_Set2_Start_Month_Plus_0>>>Today>>>3	[9/1/2018-9/16/2018]

Save and Reuse Named Parameter Sets (video demo)

If you click the refresh button for a report that has at least 8 parameters (Options dialog allows you to change that number), a ***Save*** button becomes visible in the following dialog:



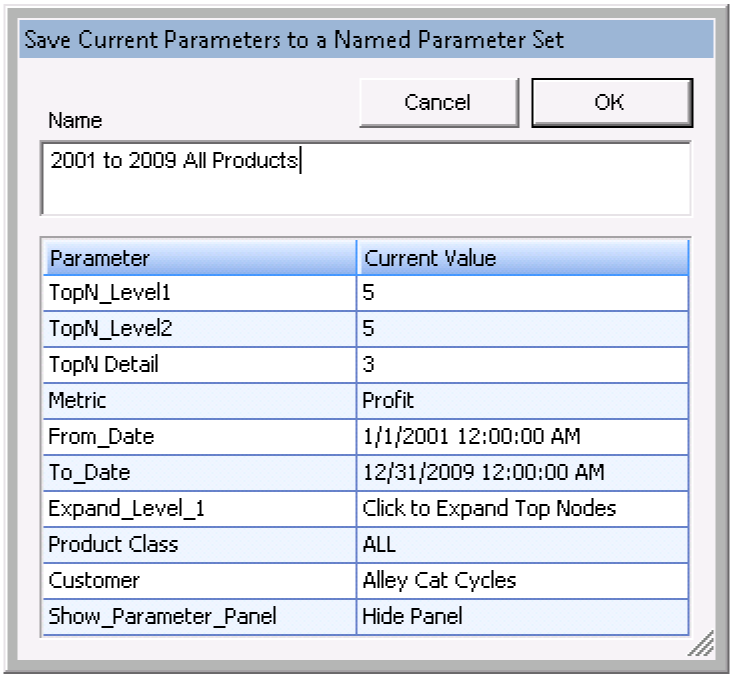
○ Use current parameter values

□ Refresh Every 600 Seconds

● Prompt for new parameter

Change	Parameter	Current Value
□	TopN_Level1	5
□	TopN_Level2	5
□	TopN Detail	3
☑	Metric	Profit
□	From_Date	1/1/2001 12:00:00 AM
□	To_Date	12/31/2009 12:00:00 AM
□	Expand_Level_1	Click to Expand Top Nodes
☑	Product Class	ALL
□	Customer	Alley Cat Cycles
□	Show_Parameter_Panel	Hide Panel

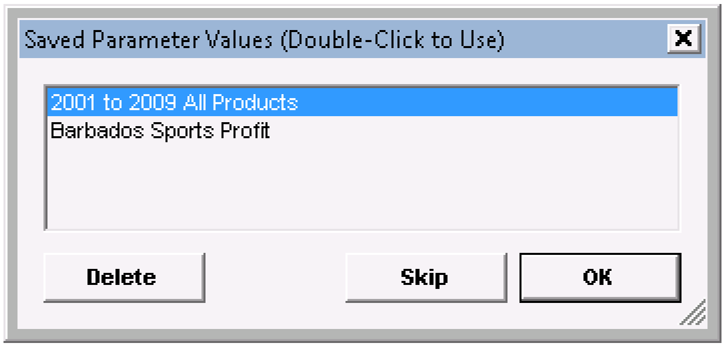
If you click ***Save***, the following dialog allows you to save the current parameters value set to DataLink_Viewer.ini under a unique name for this report.



Name: 2001 to 2009 All Products

Parameter	Current Value
TopN_Level1	5
TopN_Level2	5
TopN Detail	3
Metric	Profit
From_Date	1/1/2001 12:00:00 AM
To_Date	12/31/2009 12:00:00 AM
Expand_Level_1	Click to Expand Top Nodes
Product Class	ALL
Customer	Alley Cat Cycles
Show_Parameter_Panel	Hide Panel

The next time you load this report, you would get a dialog that allows you select and reuse any of the saved named parameter sets for this report:



Saved Parameter Values (Double-Click to Use)

2001 to 2009 All Products
Barbados Sports Profit

Double-clicking any of the entries (or selecting an entry and clicking the OK button) would launch a dialog allowing you to reuse that set of saved parameter values or selectively change some of these saved parameter values.

This functionality was designed to address scenarios where reports with many parameters are used in one of several parameter patterns. By saving and naming these patterns, the user can reuse them.

Note: if you are a report developer, you can deliver these saved parameter patterns to a user machine by copying the [Named_Parameter_Sets] section in your DataLink_Viewer.ini file to the user’s DataLink_Viewer.ini file.

Click to Change a Parameter Value (video demo)

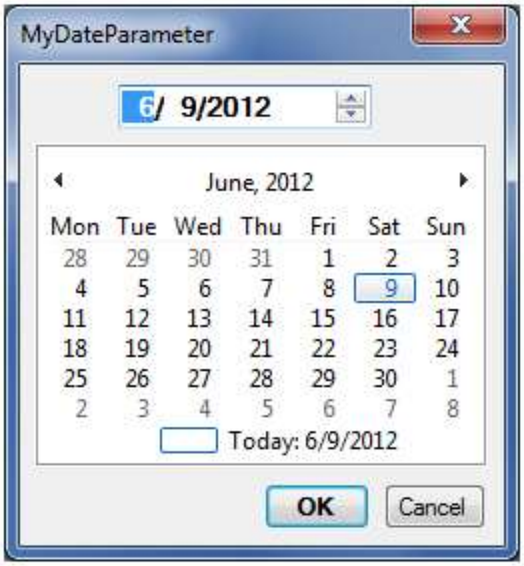
If you place a main report parameter on the report layout, when a DataLink Viewer user clicks on that parameter, DataLink Viewer prompts the user for just that parameter. That allows your users to simply and intuitively select just one parameter to refresh. Note: avoid special characters in the parameter name.

Toggling Between 2 Parameter Values

If a user clicks on a parameter that has **exactly 2 default values** (no custom values allowed), DataLink Viewer toggles the value of that parameter to the other value. This provides many useful behaviors. The sample report demonstrates toggling between viewing Profit or Revenue by simply clicking on the {?Metric} parameter. Another parameter allows toggling between expanding all top nodes or manually selecting which nodes to expand.

Special Date and DateTime Parameter Dialogs

If a user clicks on a single-value **Date** or **DateTime** parameter, DataLink Viewer presents an enhanced date entry/selection dialog. To quickly select a date, **double-click a date** on the calendar. Once the calendar is selected, **Page Up/Down** changes the month and **Ctrl+(Page Up/Down)** changes the year:

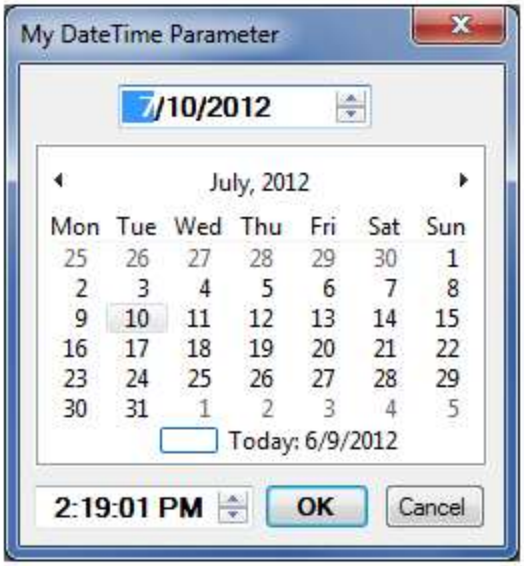


6/ 9/2012

June, 2012

Mon	Tue	Wed	Thu	Fri	Sat	Sun
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1
2	3	4	5	6	7	8

Today: 6/9/2012



7/10/2012

July, 2012

Mon	Tue	Wed	Thu	Fri	Sat	Sun
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

Today: 6/9/2012

2:19:01 PM

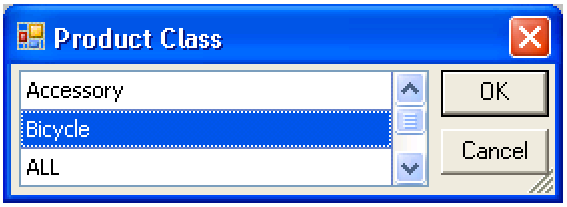
Input Box Dialog

If a user clicks on a single-value parameter with **less than 2 default values**, where custom values are allowed, DataLink Viewer presents a simple InputBox dialog, making it easier and faster for the user to change the parameter value.

ListBox Dialog

If a user clicks on a single-value parameter **more than 2 default values**, where custom values are not allowed, DataLink Viewer presents a multi-row dialog, with one row for each default value designed for that parameter. This allows the user to quickly change the value for that parameter. To quickly select an item, the user can simply double-click it.

To quickly locate an item in the list, the user can type the first few characters and the list will automatically scroll to the first item starting with these characters. To quickly select an item, the user can simply double-click it.



Changing a Parameter by Clicking on a Related Formula

In some cases, you may wish to invoke a parameter change by clicking on a related formula. For example, you may wish to embed the parameter inside some text, or perhaps the parameter may have an empty value, making it impossible to click on the parameter object by itself.

To use a formula as a proxy for clicking on a parameter, the formula name must start with "**DLV_Param_Click:**" followed by the parameter name you wish to change when a user clicks on that formula. For example, "DLV_Param_Click:Customers"

The formula itself may display any values you wish. For example, you may concatenate static text with the parameter value, or you may wish to return "No Value" if the parameter value is null, and a nicely formatted value if the parameter is not null.

Load ini Values into Parameters

Specially named parameters get loaded automatically from DataLink_Viewer.ini file entries. For example, you may use this with **parameters that change only once per quarter**. Another case could be a situation where you develop and sell reports (probably .rpt files converted to .rpz files) to clients in a vertical market. These reports are designed to work against a known database structure, but **each client may need to customize the reports with text elements, conditional formatting, or record selection criteria without changing the report design**. Or perhaps you wish to **restrict use of your reports to only paying customers by providing a license code** that must match (using secret logic) the company name in the customer's database.

Instructions:
First, add to the [Options] section in **DataLink_Viewer.ini** (in the application folder) an entry with a **key name** (Company) and value (Millet Software) of your choice. For example:

```
[Options]
 …
Company=Millet Software
```

Then, add a **String Single-Value parameter** named **"DLV_INI_Option_KeyName"** to the report. DataLink Viewer automatically sets the value of such parameters to the value found for the Key Name under the [Options] section of DataLink_Viewer.ini. So, in the case above,
the parameter value of **DLV_INI_Option_Company** would be set to "Millet Software".

Notes:

- Within DLV, the **user never gets prompted** for the value of such parameters.
- If a matching key name can't be found, the parameter gets the value of:
  "Failed INI Lookup"
- You can have as many parameters like this as you wish, each with a different key name.
- To pass such parameters to subreports, create a formula in the main report that simply returns the value of the parameter. Then, pass that formula as a link to the subreport.
- The ini file used by this process is always the MASTER ini file (the one in the DataLink Viewer application folder), even if you redirect to a DataLink_Viewer.ini at a different location. This allows you to enforce this type of parameters from a centralized location.

Securing Reports against Unauthorized Use

If you wish to secure your reports against unauthorized use, you can provide authorized users a License Key string for the ini entry. Within the report (later distributed to clients as an .rpz file) you design a record selection criterion that returns true only if the license key matches the company name in the database. As a simple example, you could check the number of characters in the license key is equal to the length of the actual company name (in the database) plus the number of R's in that company's name.
If you don't have access to the company name in the database, or if you wish to issue per-machine licenses, use the technique described in the next section.

Load Machine/Company/Report Information into Parameters

DLV_MACHINE_NAME

If a report has a single-value string parameter called **DLV_Machine_Name**, DataLink Viewer automatically sets the value of such a parameter to the Windows Machine Name on which DataLink Viewer is running.

DLV_REGISTERED_COMPANY

If a report has a single-value string parameter called **DLV_Registered_Company**,
DataLink Viewer automatically sets the value of such a parameter to the Company Name specified when the Windows operating system was installed..

In conjunction with the ability to load ini values into report parameters, this functionality allows report developers to distribute rpz files and restrict their use to only those where a license code matches the company to which Windows is registered.

DLV_HD_SERIAL_N

If a report has a single-value string parameter called **DLV_HD_Serial_N**,
DataLink Viewer automatically sets the value of such a parameter to the serial number of the current hard drive.

In conjunction with the ability to load ini values into report parameters, this functionality allows report developers to distribute rpz files and restrict their use to only those where a license code matches the machine on which the report is running.

DLV_RPT_PATH

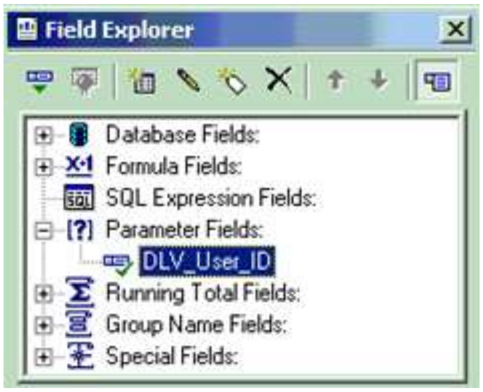
If a report has a single-value string parameter called **DLV_Rpt_Path**, DataLink Viewer automatically sets the value of such a parameter to the path to the rpt or rpz file. This is particularly useful in the case of rpz files.

Control Data Access according to PC Login

Assume you have several Sales Reps who need access only to their own sales information. DataLink Viewer can limit the data shown in a report according to who is logged in to the PC.

To achieve this functionality you need two elements:

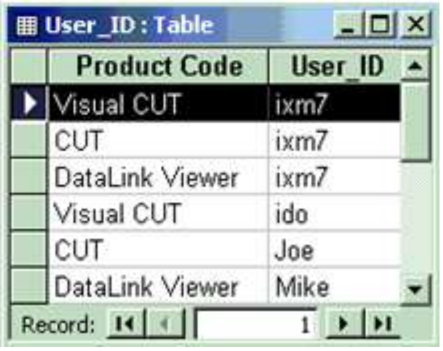
1. The report must have a String parameter named "DLV_User_ID" as shown below. DataLink Viewer automatically sets the value of such a parameter to the User ID who is currently logged in to the PC.



2. **The record selection formula must include a condition that restricts the data according to the User ID**. In most cases, this would be achieved by creating a new table in your database (or adding a new column to an existing table). For example, a new column in the Sales_Rep table (or a new table) can associate each Sales_Rep_ID with his/her User ID.

The record selection formula would include a condition such as: **{Sales_Rep.User_ID}={?DLV_User_ID}** This would ensure that as each Sales Rep logs into their PC, DataLink Viewer will show them only the sales records associated with their own Sales_Rep_ID.

Note: using a table, you can use multiple records to map the same User_ID to multiple areas of responsibility (Customer_IDs, Product_IDs, Region_IDs):



Product Code	User_ID
Visual CUT	ixm7
CUT	ixm7
DataLink Viewer	ixm7
Visual CUT	ido
CUT	Joe
DataLink Viewer	Mike

This allows you to give a single user (for example, a regional manager who should be able to see information for all her Sales Reps) permissions to view information that is related to more than one entity.

In the table example above, **ixm7** is allowed to view sales information for all three products, while **ido** is allowed to view sales information only for Visual CUT.

Dynamic & Cascading Parameters (video demo)

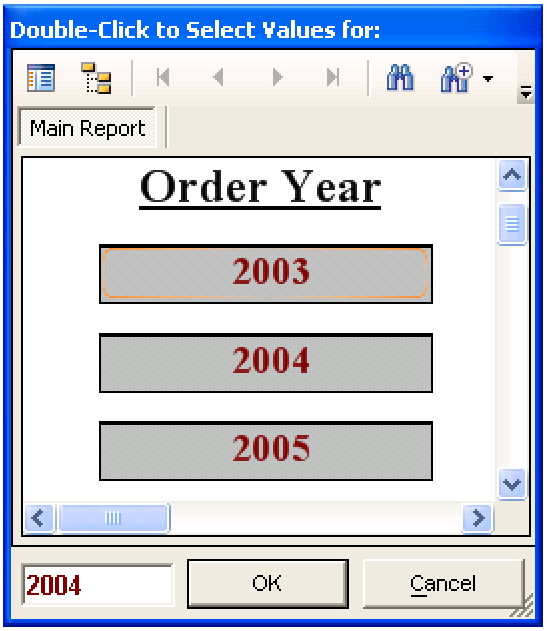
This section explains the special dynamic & cascading parameter functionality provided by DataLink Viewer. **When a parameter name matches a report name, DataLink Viewer uses that report as a parameter dialog**.

The first parameter in our sample report was named (by the report developer) as:
"**Prompt_Order_Year.rpt**"
DataLink Viewer detects that such a report exists and "links" to that report as the basis for prompting the user.

Note: if a prompting report doesn't exist, the regular parameter dialog provided by Crystal will be used. ***DataLink Viewer* always tries to locate and use Live Prompts before using the regular Crystal prompts.**

Respond to Single-Value Live Prompts

DataLink Viewer detects that the **Prompt_Order_Year.rpt** parameter was designed to accept only a single value, and hence it presents you with the linked report inside a dialog that allows you to click and select only a single value:



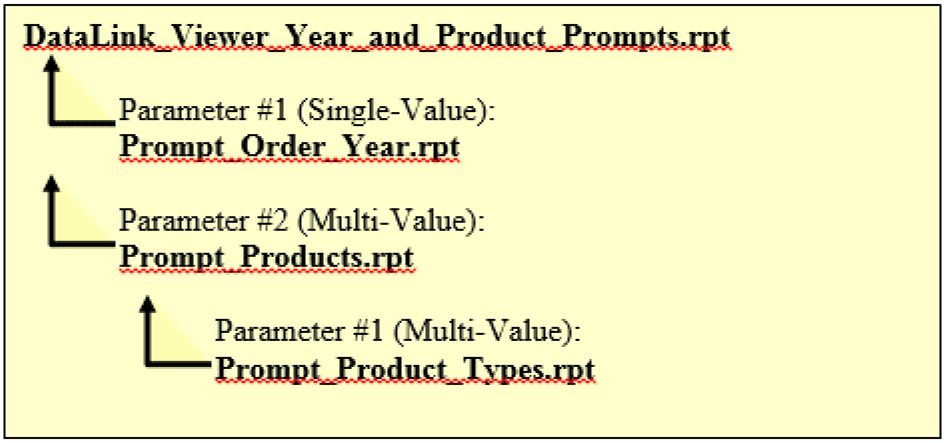
Note that by linking to a live prompt report, the designer of the report doesn't have to change the report design every year in order to add one more entry to the default value list of the static parameter. Instead, the prompt report dynamically presents all available years in the database.

Link back in a Hierarchy of Live Prompts

Once you select 2004 and hit OK, the viewer detects a second parameter in our sample report:
"**Prompt_Products.rpt**"
Again, ***DataLink Viewer*** detects that such a report exists and links to that report as the basis for prompting the User.

However, before presenting this report to the user, the viewer detects that the **Prompt_Products.rpt** itself is designed with a parameter of its own:
"**Prompt_Product_Types.rpt**"

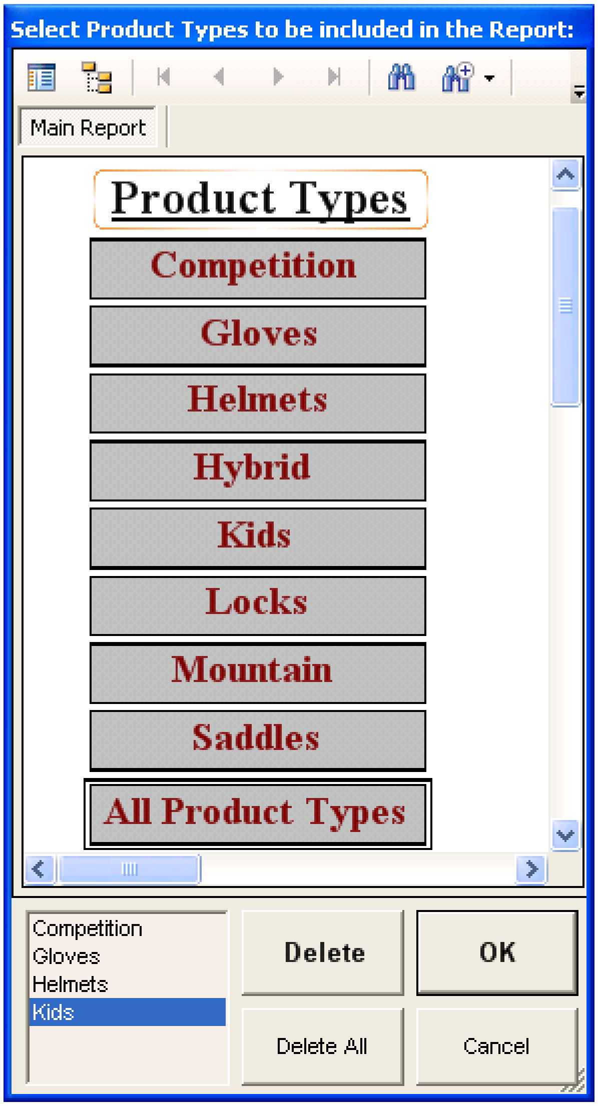
What we have here is a ***hierarchy of links*** whereby the values selected by the user in response to the **Prompt_Product_Types.rpt** parameter restrict the values available for selection in the **Prompt_Products.rpt** parameter:


DataLink_Viewer_Year_and_Product_Prompts.rpt
Parameter #1 (Single-Value):
Prompt_Order_Year.rpt
Parameter #2 (Multi-Value):
Prompt_Products.rpt
Parameter #1 (Multi-Value):
Prompt_Product_Types.rpt

***DataLink Viewer* always starts from the bottom of the hierarchy for each parameter!**
Hence, we are going to be prompted first for Product Types before we select Products within those Product Types.

Respond to Multi-Value Live Prompts

DataLink Viewer detects that the parameter called **Prompt_Product_Types.rpt** was designed to accept multiple values, and hence it presents you with the linked report **Prompt_Product_Types.rpt** inside a dialog that allows you to click and select <u>multiple</u> values:



Select Product Types to be included in the Report:

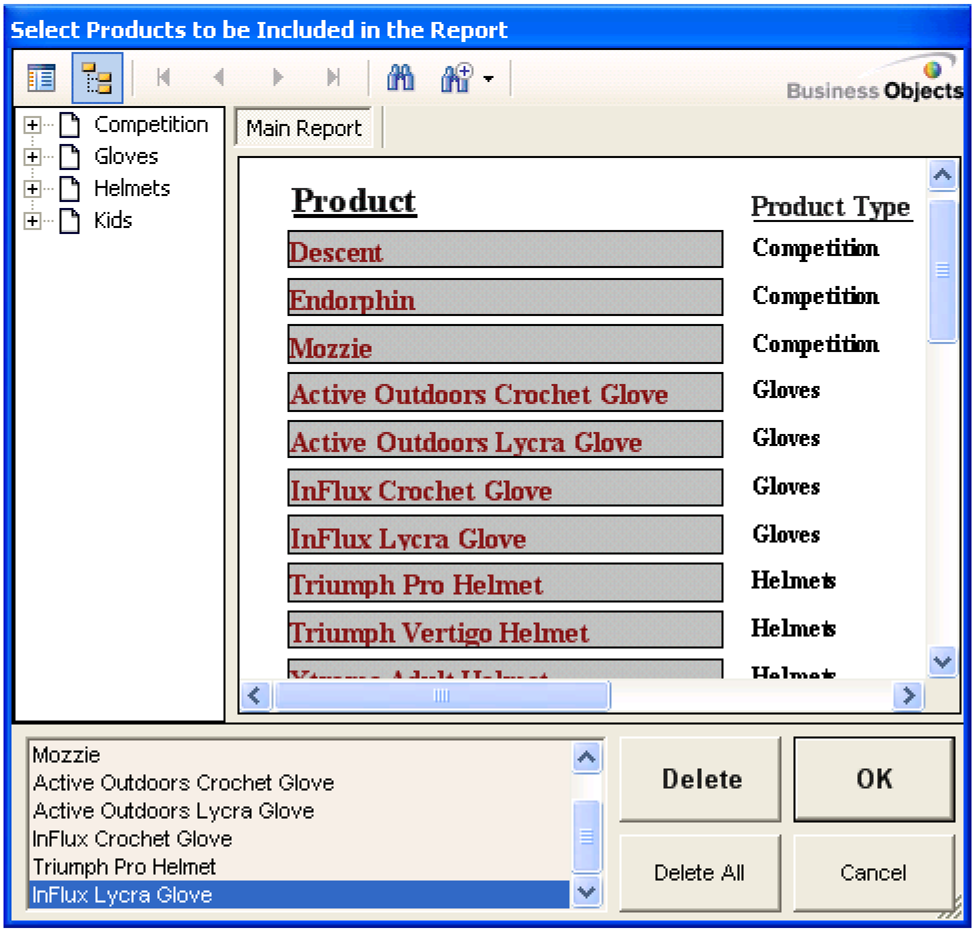
Competition
Gloves
Helmets
Kids

After clicking on *Competition* and Helmets to select those Product Types, click OK to progress to the Products selection within those Product Types.

MANAGE DISPLAY & DATA VALUES FOR LIVE PARAMETERS

In this particular situation, the **Product Type Name** is used for both **display value** (what gets shown to the user in the list of available values) as well as **data value** (what gets passed into Crystal as the parameter value). As demonstrated in the following step, *DataLink Viewer* allows you to present the user with meaningful product names as **display values** while passing Product IDs as the actual parameter **data value**.

Again, ***DataLink Viewer*** detects that the parameter called **Prompt_Products.rpt** was designed to accept multiple values, and hence it presents you with the linked report **Prompt_Products.rpt** inside a dialog that allows you to click and select multiple values. **Note that only Products within the Selected Product Types (in the previous step) are available for selection**.
This demonstrates the power of **cascading dynamic parameters**:



Select Products to be Included in the Report

- Competition
- Gloves
- Helmets
- Kids

Main Report

Product	Product Type
Descent	Competition
Endorphin	Competition
Mozzie	Competition
Active Outdoors Crochet Glove	Gloves
Active Outdoors Lycra Glove	Gloves
InFlux Crochet Glove	Gloves
InFlux Lycra Glove	Gloves
Triumph Pro Helmet	Helmets
Triumph Vertigo Helmet	Helmets
Xtreme Adult Helmet	Helmets

Mozzie
Active Outdoors Crochet Glove
Active Outdoors Lycra Glove
InFlux Crochet Glove
Triumph Pro Helmet
InFlux Lycra Glove

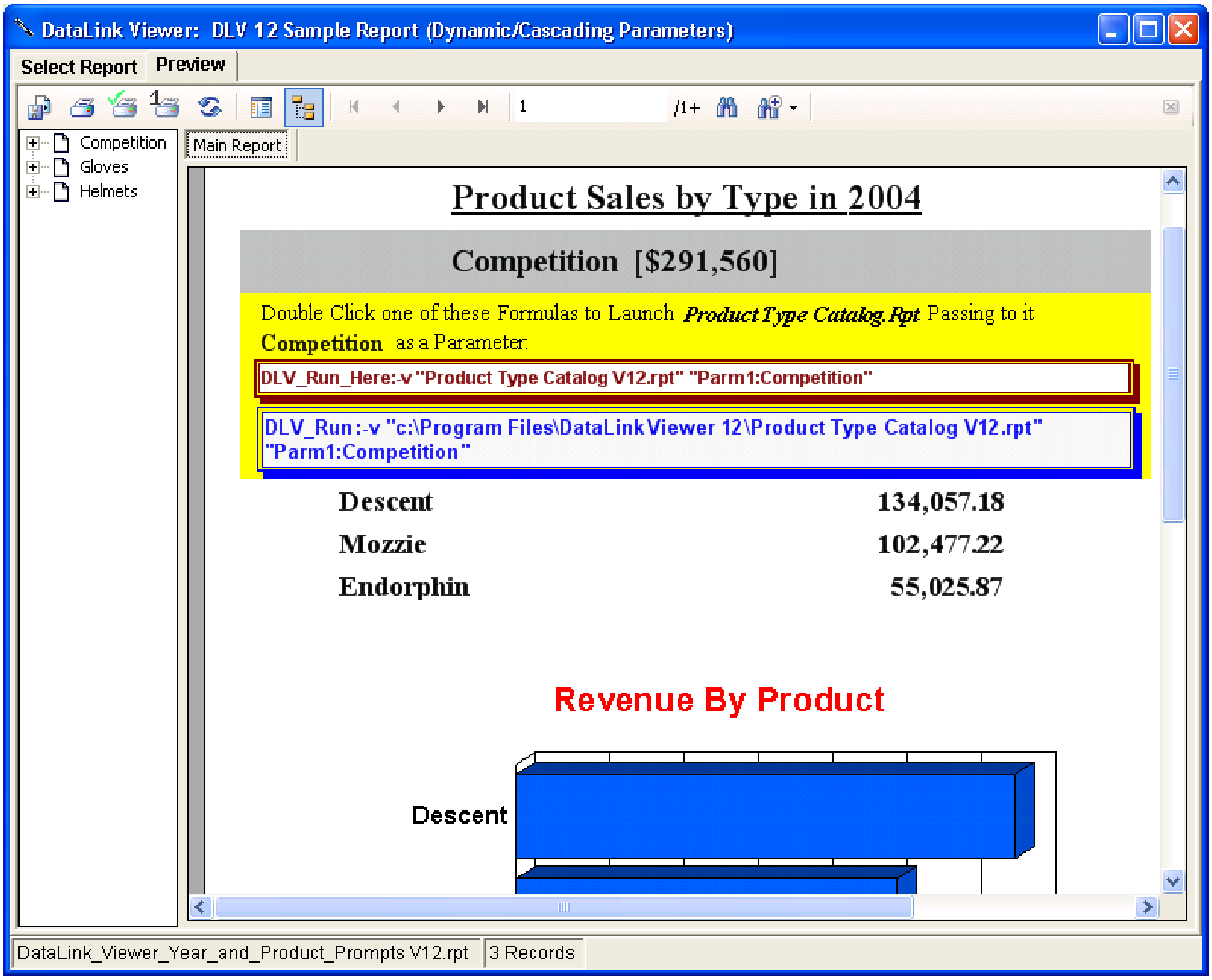
While you can click on any field/formula to add its text to the selection list, it's good practice to use color, font, and box effects to highlight the column you intend the user to click..

The viewer always uses what you click on as the Display Value. However, if that field has a tooltip, the text of that tooltip is used as the parameter Data Value. After clicking on some product names, move your cursor over these items in the list of selected Display Values. Notice that a popup text reflects the underlying Data Value (Product IDs for each product).

You can **resize** the dynamic parameter dialogs, select a **zoom** level, and turn the **group tree** on or off for each dynamic report. **DataLink Viewer remembers these settings** and will apply them the next time the same dynamic parameter dialog (for the same dynamic parameter report) is loaded.

VIEW THE REPORT

When you click OK, DataLink Viewer uses the selected values for both the "Prompt_Year.rpt" and "Prompt_Products.rpt" parameters to display the requested report:



DataLink Viewer: DLV 12 Sample Report (Dynamic/Cascading Parameters)
Select Report
Preview
1
/1+
Competition
Gloves
Helmets
Main Report

Product Sales by Type in 2004

Competition [$291,560]

Double Click one of these Formulas to Launch *Product Type Catalog.Rpt* Passing to it **Competition** as a Parameter.

```
DLV_Run_Here:-v "Product Type Catalog V12.rpt" "Parm1:Competition"
DLV_Run:-v "c:\Program Files\DataLinkViewer 12\Product Type Catalog V12.rpt" "Parm1:Competition"
```

Descent	134,057.18
Mozzie	102,477.22
Endorphin	55,025.87

DataLink_Viewer_Year_and_Product_Prompts V12.rpt | 3 Records

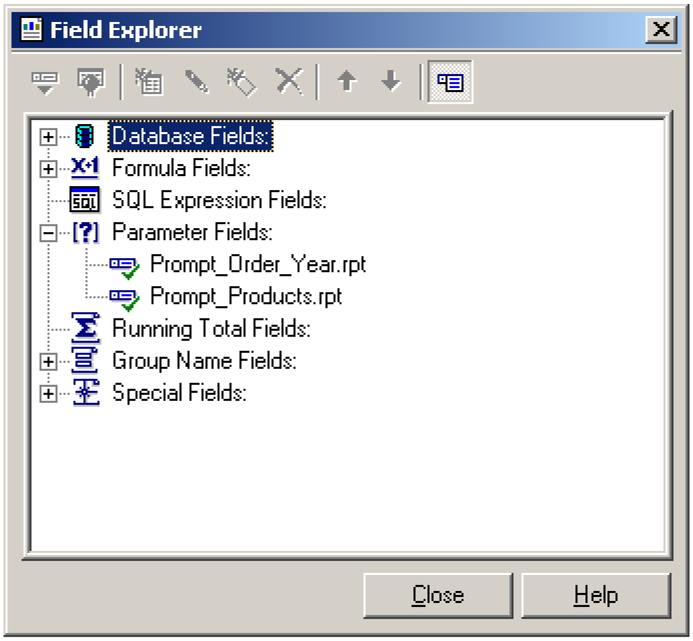
Dynamic and Cascading Parameters (Developer Notes)

DataLink Viewer can be used to run existing Crystal reports without any design changes.

This section reviews how report designers can activate the extra functionality of linking to live prompt reports.

NAMING PARAMETERS

If you want to link a parameter to a live prompt report, you need to name the parameter as the report name. In our sample report, the live prompt reports and parameter names were:
"Prompt_Order_Year.rpt" and "Prompt_Products.rpt":



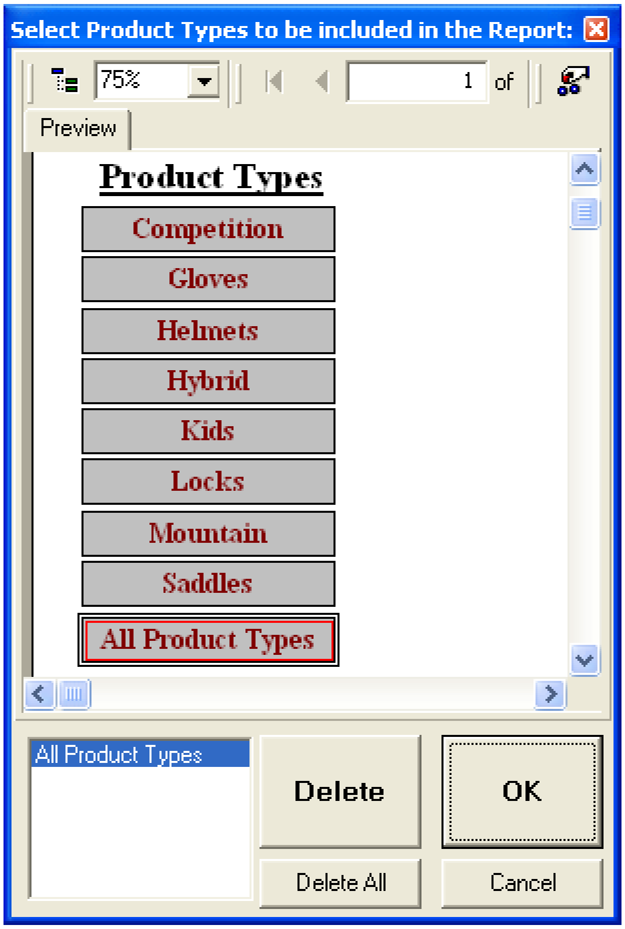
DESIGNING LIVE PROMPT REPORTS

The reports acting as live prompts should be **placed in the same directory as the report to be viewed or in the DataLink_Viewer directory**.
These reports **should contain at least one formula with the word "parameter" within its name**. Formulas named in such a manner can be clicked and selected within the prompt viewer.

You can place a formula on the report to let the user select a meaningful **Display Value** (e.g., "@Product_Name"). If you give that field or formula a tooltip text or expression, that value would be used as the parameter Data value.

IMPLEMENTING A "SELECT ALL" OPTION

If you run the report again and scroll to the bottom of the live Product Type selection prompt, you would notice that you can select the "All Product Types" option:



This was implemented by adding a formula to the report footer with a static text value of "All Product Types". The desired effect is obtained by specifying the following record selection criterion in **Prompt_Products.rpt**:

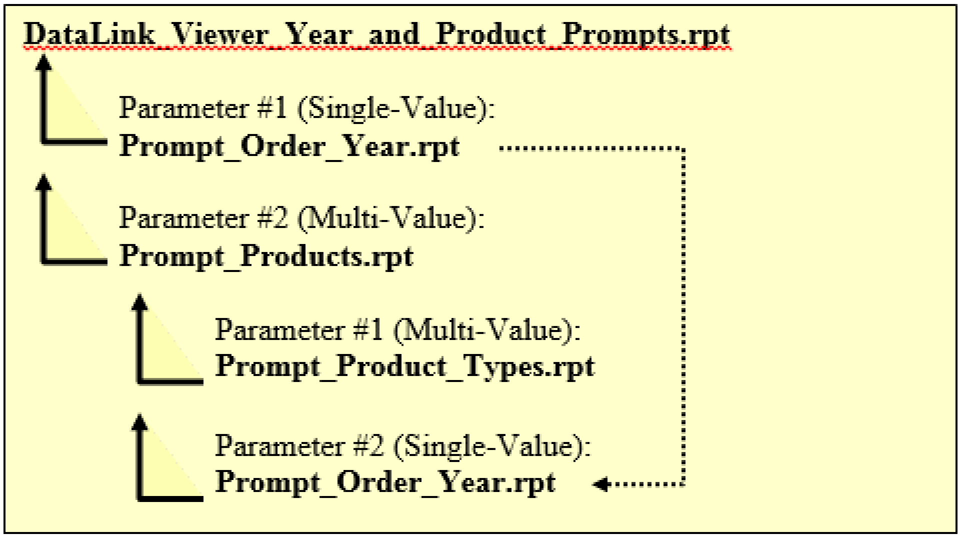
```
{Product_Type.Product Type Name} in {?Prompt_Product_Types.rpt}
OR
"All Product Types" in {?Prompt_Product_Types.rpt}
```

SHARING VALUES ACROSS CASCADING PARAMETERS

Parameter values are automatically reused if the same Parameter name is used more than once in the chain of cascading parameters.

The diagram below shows a situation where **Prompt_Order_Year.rpt** is used to first ask the user to specify which orders should be shown in the report. That same parameter is then also used to limit the dynamic list of products (**Prompt_Products.rpt**) such that only products that actually sold in that year are available for selection.

DataLink Viewer now reuses the year specified by the user the first time **Prompt_Order_Year.rpt** is invoked to avoid asking the user the same question twice.



DataLink_Viewer_Year_and_Product_Prompts.rpt

Parameter #1 (Single-Value):
Prompt_Order_Year.rpt

Parameter #2 (Multi-Value):
Prompt_Products.rpt

Parameter #1 (Multi-Value):
Prompt_Product_Types.rpt

Parameter #2 (Single-Value):
Prompt_Order_Year.rpt

To disable sharing parameter values from prior answers, open DataLink_Viewer.ini and change the following entry from TRUE to FALSE:

```
[Options]
DataLink_Parameters_Share_Prior_Answers=TRUE
```

Requiring a Value for a Dynamic Parameter

This can be achieved by following these guidelines:

1. Add a **string** formula with the name of: **{@DLV_PARAMETER_REQUIRED}** to the Report Footer (of the dynamic parameter report, not the main report).

2. The formula must **return a non-blank string** if you wish to enforce a required value for the parameter.

3. If the string returned by the formula is longer than 10 characters it would be used as the text of the message box in cases where the user clicks OK without specifying a value for the parameter. Otherwise, a standard message appears.

4. The formula, and even the report footer section as a whole can be suppressed.

5. You must place the "Page N of M" special field in the Page footer of the dynamic parameter report (even if that field or the page footer as a whole are suppressed.

Forcing Users to Select from the List of Values (No Direct Edit)

By default, dynamic parameter dialogs for single-value parameters allow the user to enter a value directly instead of clicking on the displayed list. **You can force the user to select from the list displayed by the dynamic parameter report** under two scenarios:

1. You include the text '**NoEdit**' in the parameter name.

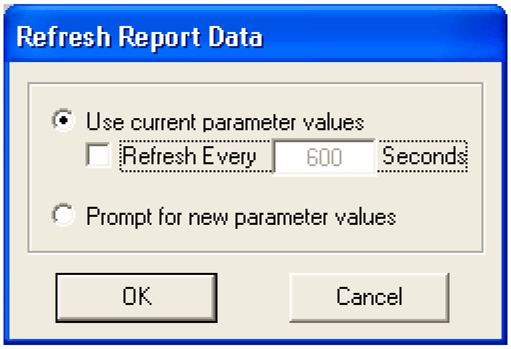
- or-

2. The user double-clicked an item in the dynamic parameter report and that item has an associated data value (tooltip expression). If the option to remember dynamic parameter values is turned on, from that point on that parameter will force the user to select from the list.

Auto-Refresh Reports

When clicking the Refresh button, you can specify that the report should automatically refresh every N seconds.

As shown in the following dialog, when a report has parameters, the Auto-Refresh option is enabled only when you elect to reuse the current parameter values:



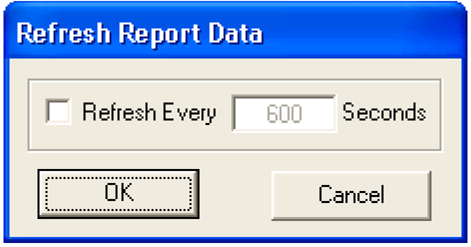
Refresh Report Data

● Use current parameter values

□ Refresh Every 600 Seconds

○ Prompt for new parameter values

When a report doesn't have parameters, the dialog is simpler and you can always elect to enable auto-refresh:

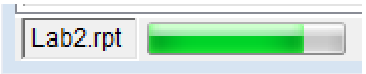


Refresh Report Data

□ Refresh Every 600 Seconds

The auto-refresh process stops when you click the Refresh button again or when you select another report.

When auto-refreshing, a decrementing progress bar at the bottom of the page reflects the % of the refresh interval remaining until the next refresh:



A click on that progress bar pauses/resumes the auto-refresh process.

If a user is on a drill-down tab, auto-refresh is placed on hold. When the user closes the drill-down tab or moves back to the main report tab, auto-refresh resumes.

Auto_Refresh Command Line Argument

You can also trigger auto-refresh by using an "Auto_Refresh" argument when invoking a report from a command line. Here's how you would trigger a viewing of a report and auto-refreshing it every 5 minutes (300 seconds):

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -V
"C:\temp\Report.rpt" "Auto_Refresh:300"
```

Saved Data Auto Refresh

Imagine a case where a huge report takes 30 minutes to run and 10 users wish to monitor the data in that report by auto-refreshing it. Instead of each of the 10 users waiting for the report to retrieve data on their PC, you can schedule the report (for example, using Visual CUT) to **export to a Crystal Report format**. The resulting rpt file has all the information as **Saved Data** inside the rpt file.

The 10 users can then open the exported rpt in DataLink Viewer and elect to not refresh the saved data. If the report was launched with an Auto_Refresh command line argument, the users can elect to keep loading the saved data on each refresh cycle, allowing the latest exported data from Visual CUT to be reflected in the auto-refreshed report within DataLink Viewer.

To tell DataLink Viewer to use saved data during Auto Refresh, use a command line like this:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -V
"C:\temp\Report.rpt" "Auto_Refresh:600" "Auto_Refresh_Use_Saved_Data:True"
```

Specifying Parameters When Using Saved Data Auto Refresh

Some parameters don't participate in data selection. Such Non-Fetching parameters are typically used to control how the data is displayed on the report (for example, grouping, sorting, and section suppressions). DataLink Viewer allows you to specify values for such parameters when using saved data. For example:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -V
"C:\temp\Report.rpt" "Auto_Refresh:600" "Auto_Refresh_Use_Saved_Data:True" "Parm1:Crew"
```

Auto_Page_and_Refresh

Using this command line argument, you can request the viewer to automatically advance to the next page every N seconds. After getting to the last page, the viewer will next move to the first page and also refresh the report data. The cycle then continues. Here's how you would trigger the process with 20 seconds as the time increment:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v
"C:\temp\Report.rpt" "Auto_Page_and_Refresh:20"
```

Note: to pause the auto-page & refresh process, double-click on the report -- Double-click again to resume.

ViewMode (Remove Toolbar/Status bar/TitleBar)

When you trigger a report from a command line using a –v (View Only window), you can also elect to remove the toolbar/status bar/title bar in order to maximize the space available for the report itself.

The command line argument for controlling this behavior is "ViewMode" and it has these possible values:
…"ViewMode:**NoStatusBar**" - only the status bar at the bottom of the window is removed
…"ViewMode:**NoToolBar** - only the toolbar at the top of the window is removed
…"ViewMode:**NoBars**" - both the toolbar and the status bar are removed
…"ViewMode:**NoBarsNoTitle**" - toolbar, status bar, and window title are all removed

A typical scenario for using this option is in combination with the Auto_Refresh command line argument. For example:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v
"C:\temp\Report.rpt" "Auto_Refresh:300" "ViewMode:NoBars"
```

Cycling Through Several Auto-Refreshed Reports

Assume you want your monitor to cycle through 2 different auto-refreshed reports every 15 seconds. You can take advantage of the fact that as a report gets auto-refreshed its window becomes the active one. So, you can trigger auto-refresh every 30 seconds for both reports, but separate the start times by 15 seconds.

Here's how you can automate the whole process:

Step 1: Use notepad to create a batch file that can be called from within another batch file to delay processing by a given number of second. Call it **WAIT.bat**
(if you'd like to understand the logic, see: http://malektips.com/dos0017.html):

```
@ping 127.0.0.1 -n 2 -w 1000 > nul
@ping 127.0.0.1 -n %1% -w 1000> nul
```

Step 2: Use notepad to create the following text file. Call it **invis.vbs**
(this allows us to call 1 report and progress to the next line in a batch file (no blocking) as well as avoid the ugly DOS window):

```
CreateObject("Wscript.Shell").Run """" & WScript.Arguments(0) & """", 0, False
```

Step 3: Use notepad to create one batch file for each report to trigger its viewing and auto-refreshing. Here are two batch files, one for a report with a parameter and one for a report without one:

Report_1.bat

```
 "C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v "C:\DLV\Report_1.rpt" "Parm1:2004"
"Auto_Refresh:30"
```

Report_2.bat

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v "C:\DLV\Report_2.rpt" "Auto_Refresh:30"
```

Step 4: Use notepad to create a batch file, which silently calls the two reports, inserting a 15 seconds wait between the calls. Double-click or schedule that batch file to start the processing:

```
wscript.exe "C:\DLV\invis.vbs" "C:\DLV\Report_1.bat"
CALL WAIT 15
wscript.exe "C:\DLV\invis.vbs" "C:\DLV\Report_2.bat"
```

Click to Set Formula Value (video demo)

DataLink Viewer reacts to user clicks on specially named formulas by setting the value of another formula.

Click to Set Another Formula to Clicked Formula Value

For example, if a user clicks on a formula called `{@DLVSet_1:Sort1}` that has as its string value the text "Region" it will attempt to locate the {@Sort1} formula and set its string value to "Region". If, the user clicks on another formula called `{@DLVSet_2:Sort1}` that has as its string value the text "Country" it will attempt to locate the {@Sort1} formula and set its string value to "Country".

The name of the clicked formula has 4 parts:
1. **DLVSet_** this is a constant that identifies the formula to DataLink Viewer as a click source.
2. Any number (not limited to a single digit) (1 or 2 in samples above). This allows for multiple formulas, each with a different string value, to set the string value of the same target formula
3. a colon (**:**)
4. The name of the target formula (Sort1 in the examples above) whose string value would be set to the string value of the clicked formula.

Note: avoid spaces and special characters (e.g. underscores) in the target formula names.

Click to Set Another Formula to Clicked Formula Name

Following the scenario in the section above, if the target formula name contains "**ClickedFormulaName**" its value gets set to the name (rather than value) of the clicked formula.

If it contains "**ClickedFormulaNameDrillDown**", the click also triggers a DrillDown. This allows initiating a drill-down while dynamically controlling visibility of elements in the drill-down. Make sure the group name you are drilling on is not blank ("").

Click Column Headers to Re-Sort The Report

As a demonstration of what can be achieved with the "Click to Set a Formula Value" functionality, the sample report (DLV_Column_Header_Sort_2011.rpt) reacts to clicks on column headers by resorting the report based on the clicked column header. A short video demonstration is available at: https://youtu.be/QwyPQfQeY40

The four column headers are clickable formulas:

1. **{@DLVSet_1:Sort1}** (with a string value of "Customer Name")
2. **{@DLVSet_2:Sort1}** (with a string value of "Region")
3. **{@DLVSet_3:Sort1}** (with a string value of "Country")
4. **{@DLVSet_4:Sort1}** (with a string value of "Postal Code")

The target formula {@Sort1} starts with a design-time value of "Customer Name" and as its value gets changed due to user clicks, the {@SortBy1}formula reacts by returning one of the 4 database columns (Customer Name, Region, Country or Postal Code) . This in turn changes how the report groups are sorted.

Note: **group** rather than **record** sorting is used in this sample report because the Crystal runtime components don't re-sort records unless the report data is refreshed from the database. The Group re-sort occurs all on the client-side without hitting the database again.

Click to Show HTML Tooltip (video demo)

If the tooltip of a formula (**or any other object!**) begins with <HTML>, DLV assumes the tooltip contains rich content that should be displayed in an independent window.

Crystal allows you to set the Tooltip property of any object to a complex expression, so you can easily accumulate a lot of detail into nicely formatted HTML pages, including HTML tables. To see how Crystal formulas can build an HTML table from report data, visit this video demo.

The key advantage of this technique is that in some cases, you want to display detail data side by side with the main report. That is something that On-Demand Subreports or Drill-Downs typically can't provide. You can even click on several objects to open multiple HTML tooltip windows and arrange them side by side.

Notes:

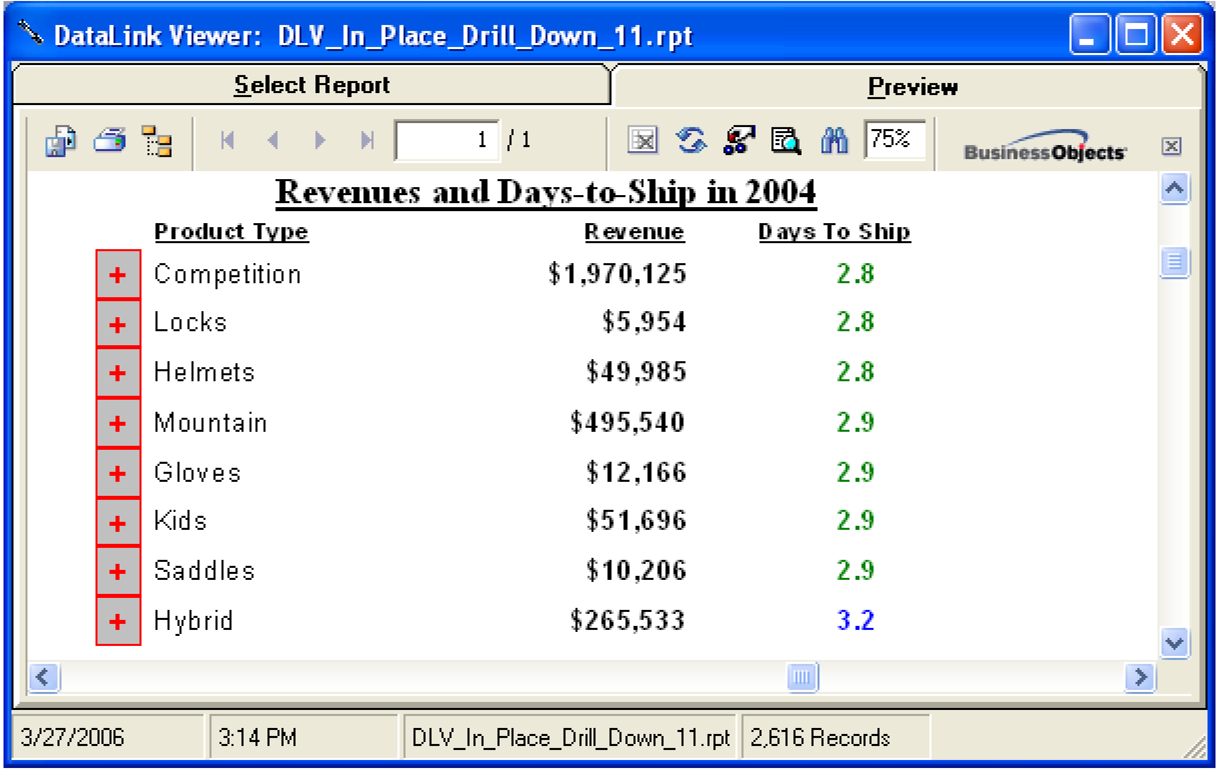
- You can press Ctrl-P to print the content of any HTML tooltip window.
- DLV remembers the location & size of the last opened HTML tooltip window.
- If the tooltip HTML syntax includes a <Title>… </Title> tag, the tooltip window reflects that title.
- HTML Tooltip windows are automatically closed when you refresh or navigate away from the report preview window. To automatically close the tooltip windows also on events such as drill-down, paging, and parameter panel refresh, set the following entry in the DataLink_Viewer.ini file to TRUE:

  ```
  [Options]
  Close_HTML_Tooltips_On_Page_Events=True
  ```

In-Place Drill-Down (video demo)

Crystal's Drill-Down functionality is limited to opening the detail in a new tab. However, in many cases users prefer to expand/collapse detail within the main report tab. By adding to the report a few formulas and using them in the suppress expression of detail sections, DataLink Viewer allows you to achieve In-Place Drill-Down functionality.

A report may initially preview with all details collapsed, like this:

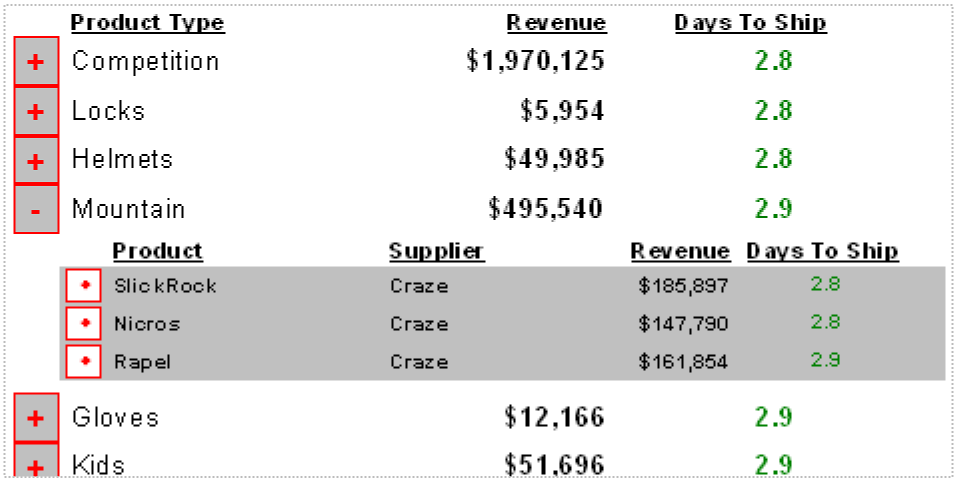


Revenues and Days-to-Ship in 2004

	Product Type	Revenue	Days To Ship
+	Competition	$1,970,125	2.8
+	Locks	$5,954	2.8
+	Helmets	$49,985	2.8
+	Mountain	$495,540	2.9
+	Gloves	$12,166	2.9
+	Kids	$51,696	2.9
+	Saddles	$10,206	2.9
+	Hybrid	$265,533	3.2

3/27/2006	3:14 PM	DLV_In_Place_Drill_Down_11.rpt	2,616 Records

The + "buttons" are actually a formula that return a plus or a minus sign. When the user clicks on the these "buttons" the level-2 detail is revealed:

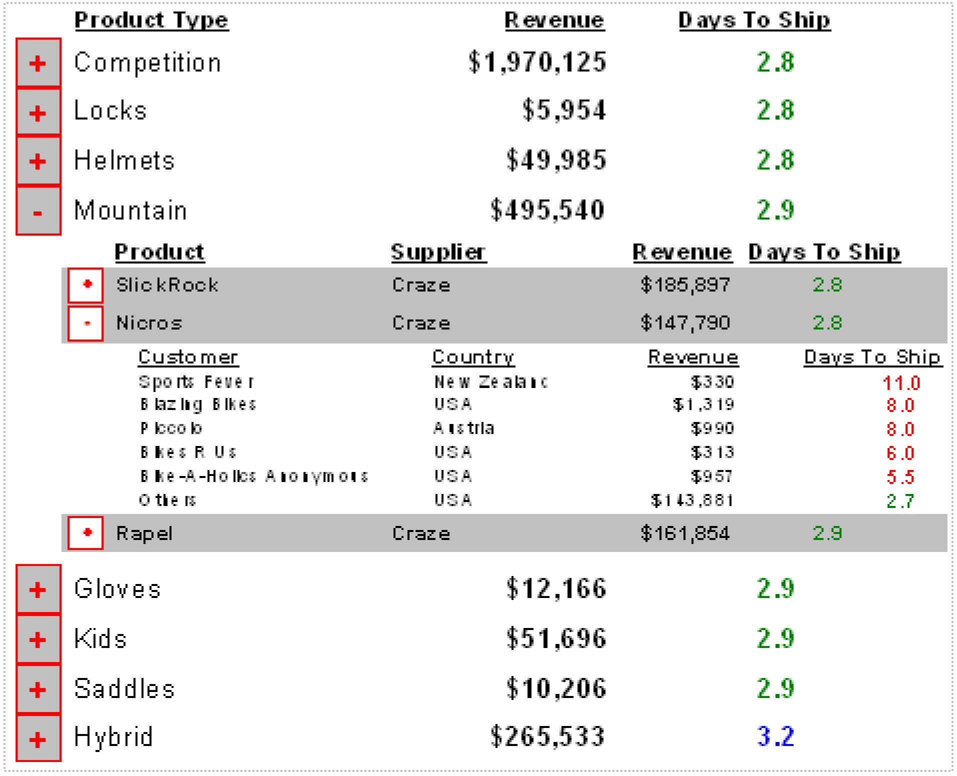


	Product Type	Revenue	Days To Ship
+	Competition	$1,970,125	2.8
+	Locks	$5,954	2.8
+	Helmets	$49,985	2.8
-	Mountain	$495,540	2.9

	Product	Supplier	Revenue	Days To Ship
+	SlickRock	Craze	$185,897	2.8
+	Nicros	Craze	$147,790	2.8
+	Rapel	Craze	$161,854	2.9

+	Gloves	$12,166	2.9
+	Kids	$51,696	2.9

And when a + "button" (another formula) in level-2 is clicked, level-3 detail is revealed:



	Product Type		Revenue	Days To Ship
+	Competition		$1,970,125	2.8
+	Locks		$5,954	2.8
+	Helmets		$49,985	2.8
-	Mountain		$495,540	2.9
	Product	Supplier	Revenue	Days To Ship
+	SlickRock	Craze	$185,897	2.8
-	Nicros	Craze	$147,790	2.8
	Customer	Country	Revenue	Days To Ship
	Sports Fever	New Zealand	$330	11.0
	Blazing Bikes	USA	$1,319	8.0
	Piccolo	Austria	$990	8.0
	Bikes R Us	USA	$313	6.0
	Bike-A-Holics Anonymous	USA	$957	5.5
	Others	USA	$143,881	2.7
+	Rapel	Craze	$161,854	2.9
+	Gloves		$12,166	2.9
+	Kids		$51,696	2.9
+	Saddles		$10,206	2.9
+	Hybrid		$265,533	3.2

You are not limited to 1 drill-down path -- several branches can be expanded at the same time.

see video demo at: https://youtu.be/3CmayJMAImE

To learn how to create your own report with this functionality, open the sample report **DLV_Demonstration_12B.rpt** and look at the comments and expressions in:

1. @DLV_Expand_Button_1 and @DLV_Expand_Button_2 formulas
2. **@DLV_Current_Group_1** and **@DLV_Current_Group_2** formulas
3. **@DLV_Expanded_Group_List** formula
4. Suppress expressions for the sections:
    a. **GH1b** (acts as column headers for level 2) and **GH2a**
    b. **GH2b** (acts as column headers for level 3) and **GH3**

The same approach can be extended to any number of group levels.

This functionality is enabled only in the main report view (not in Crystal's drill-down tabs).

Note: using my CUT Light UFL, you can "persist" to an ini file the information in **@DLV_Expanded_Group_List** so that the report "remembers" its collapse/expanded state.

Converting Section Double-Click to In-Place Drill-Down

When you implement In-Place Drill-Down, as discussed above, you may wish to allow the user to trigger this behavior by double-clicking anywhere in the section (rather than just by clicking the ⊞ / ⊟ **@DLV_Expand_Button_N** formula placed in that section.

To override the default double-click behavior in Crystal (drill-down to a new tab) and divert the double-click action to an In-Place Drill-Down, simply use all Upper Case when naming the button formula: for example instead of
@DLV_Expand_Button_1
use
@DLV_EXPAND_BUTTON_1 .

Note: Verify that if you move the mouse cursor over the formula placed in the report section, the correct upper/lower case is shown. If you already created the formula and you wish to change it to upper case, you may need to propagate that change to the actual formula object in the report section by copying the formula (Ctrl-drag) and then deleting the old clone.

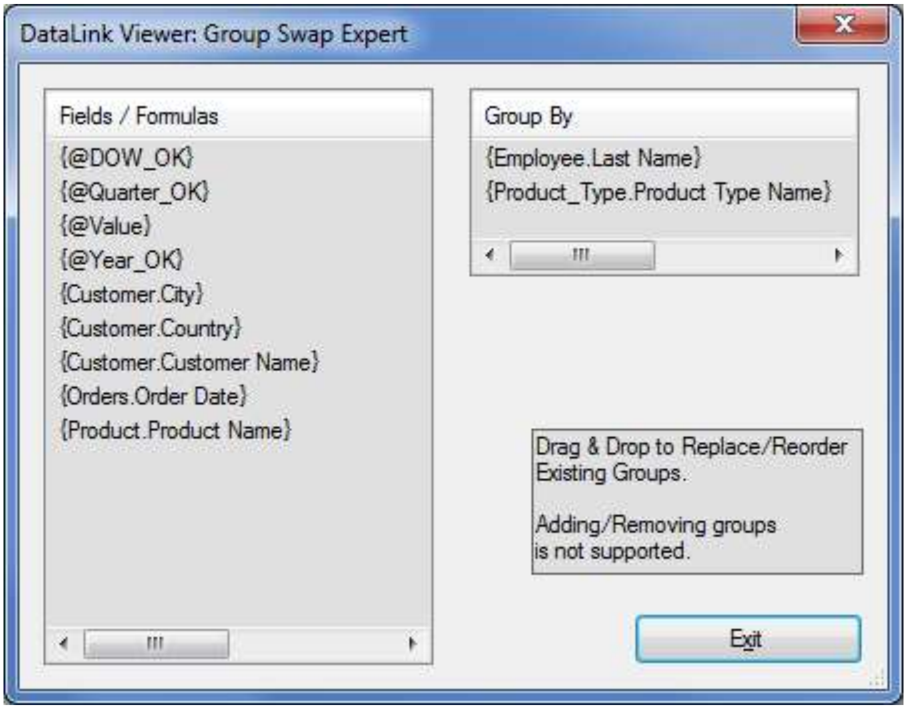
Note 2: if only the 2nd click on the button is recognized, you can correct that problem using the same procedure as above: copy the button formula (using Ctrl-drag) and then delete the old clone.

Hiding the ⊞ / ⊟ Buttons

If you use an upper case formula name for any of your **@DLV_Expand_Button_N** formulas, you can hide the formula by using the section background color as the font color. This would allow you to use double-clicks exclusively for In-Place Drill-Down actions (the user will not see the ⊞ / ⊟ Buttons).

Dynamic Grouping (Group Swap Expert) (video demo)

When previewing a Grouped report, if you click or press **Ctrl-G**, the Group Swap Expert dialog open up. Using Drag & Drop, **you can change and reorder the fields/formulas used to group the report**. For example, instead of Grouping the report by Employee and by Product Type, you may group the report by Country and Year.



{@DOW_OK}
{@Quarter_OK}
{@Value}
{@Year_OK}
{Customer.City}
{Customer.Country}
{Customer.Customer Name}
{Orders.Order Date}
{Product.Product Name}

{Employee.Last Name}
{Product_Type.Product Type Name}

Drag & Drop to Replace/Reorder Existing Groups.

Adding/Removing groups is not supported.

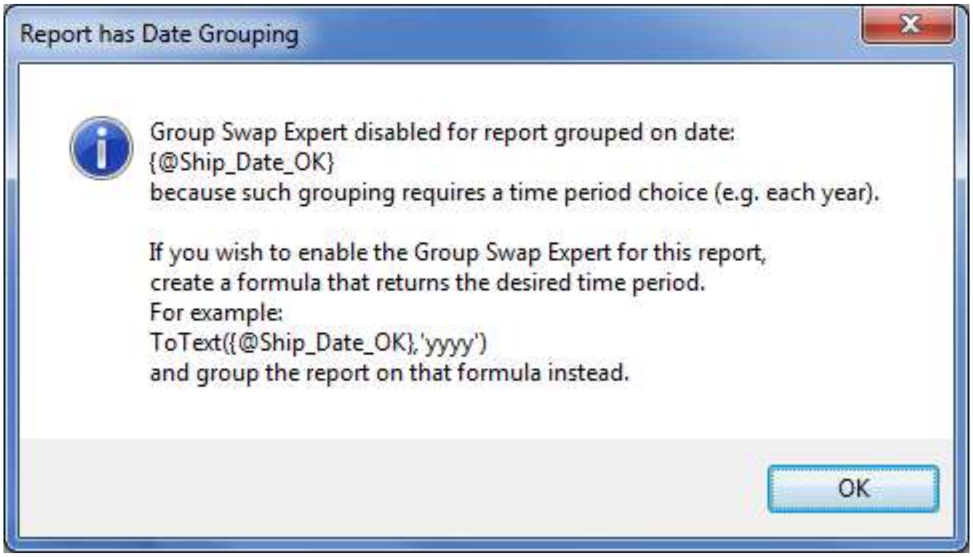
The grouping change **doesn't require hitting the database again, so it is very quick**.

DataLink Viewer also adjusts all formulas using group summaries, as well as the Group Selection formula, to reflect the new grouping.

This feature avoids the need to create parameters and formulas in cases where you wish to provide dynamic grouping functionality. A video demonstration is available.

Notes:

1. If you try to invoke the Group Swap expert for a **report grouped on a date** you get a detailed message box like this:

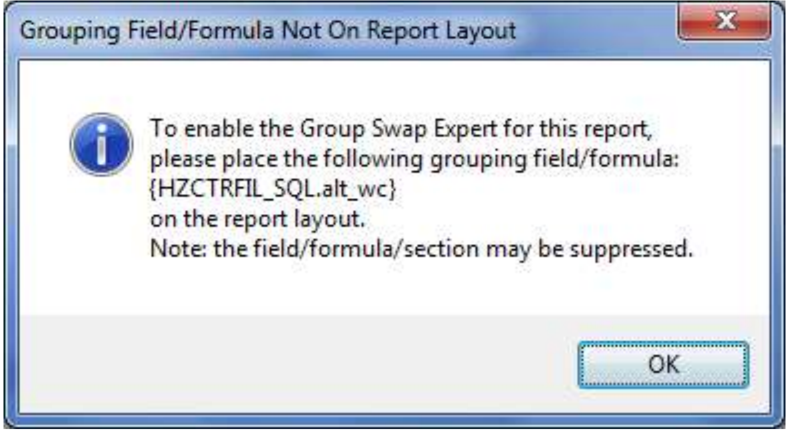


Group Swap Expert disabled for report grouped on date:
{@Ship_Date_OK}
because such grouping requires a time period choice (e.g. each year).

If you wish to enable the Group Swap Expert for this report,
create a formula that returns the desired time period.
For example:
ToText({@Ship_Date_OK},'yyyy')
and group the report on that formula instead.

2. For the same reason, **date fields/formulas are not listed as candidates for change of grouping**.

3. If you try to invoke the Group Swap expert for a **report grouped on a field/formula that is not on the report layout** you get a detailed message box like this:



To enable the Group Swap Expert for this report,
please place the following grouping field/formula:
{HZCTRFIL_SQL.alt_wc}
on the report layout.
Note: the field/formula/section may be suppressed.

4. To make a field/formula participate in this dialog, it must be placed on the report layout.
   Its name must not end with "**_NOK**" (an indication it's Not OK to include it)
   If the field/formula is suppressed or is placed in a suppressed section, it gets loaded into the list of candidate Fields/Formulas only if it's name ends with "**_OK**".
   This approach is designed to avoid exposing suppressed information.

5. Conditional formatting formulas using group summaries are not adjusted.

6. Groups sorted Descending by total field may become sorted Ascending.
   To avoid that behavior, use a TopN sort (with a large N) instead.

7. You may disable this functionality by adding this to the master DataLink_Viewer.ini

```
[Options]
Disable_Group_Swap=True
```

Optional Technique for Gaining Formula Access to the Dynamic Grouping:

If the report contains formulas names as: **DLV_Group_L1**, **DLV_Group_L2**, etc. DataLink Viewer will set the expression of each of these formulas to return the grouping Field/Formula at that level after applying group swaps. For example, you can design the report to have **{Employee.Last Name}** as the formula expression for **DLV_Group_L1** (reflecting the initial design of the report). If the user swaps **{Customer.Country}** for the level 1 grouping, DLV changes the expression in the **DLV_Group_L1 from {Employee.Last Name} to {Customer.Country}**. **This allows you to build Advanced Charts (not limited to the Grouping Hierarchy) and CrossTabs that reflect the dynamic grouping**. The sample report (DLV_2011_Change_Group_Demo.rpt) demonstrates this feature.

Change Layout & Content when Printing the Report

In some cases you may wish to use different layout & content when printing a report.

Here is a video demo demonstrating this technique.

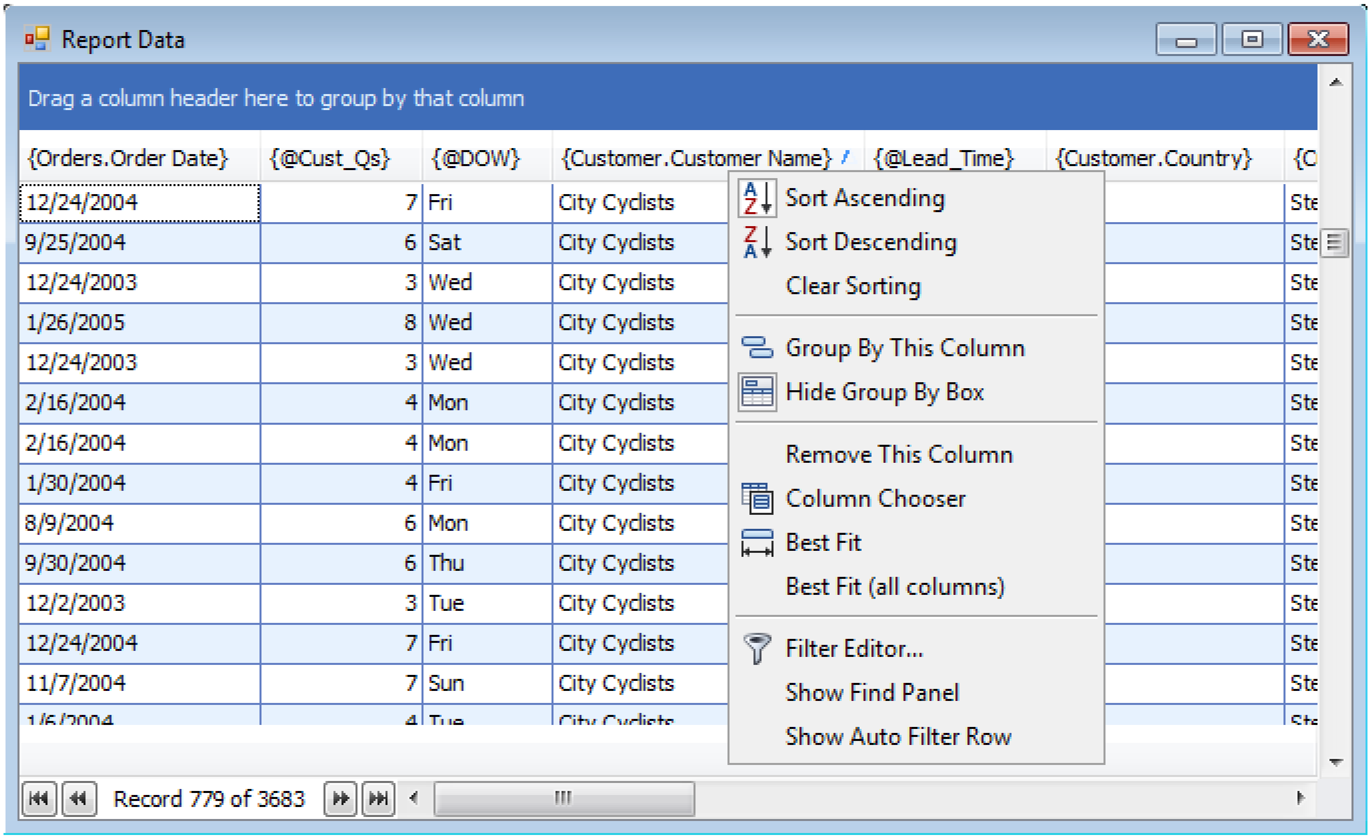
This requires that you add a formula called ***Print_Mode*** to your report and set its value to “Preview”. DataLink Viewer temporarily toggles the value of that formula to “Print” before printing, and restores its value to “Preview” after printing. You just need to control the layout and content of the report using the value of that formula.

Data Grid

You can click this toolbar icon to load the report data into an interactive data grid for ad-hoc grouping, sorting, totaling, filtering, and exporting of the data.

Example

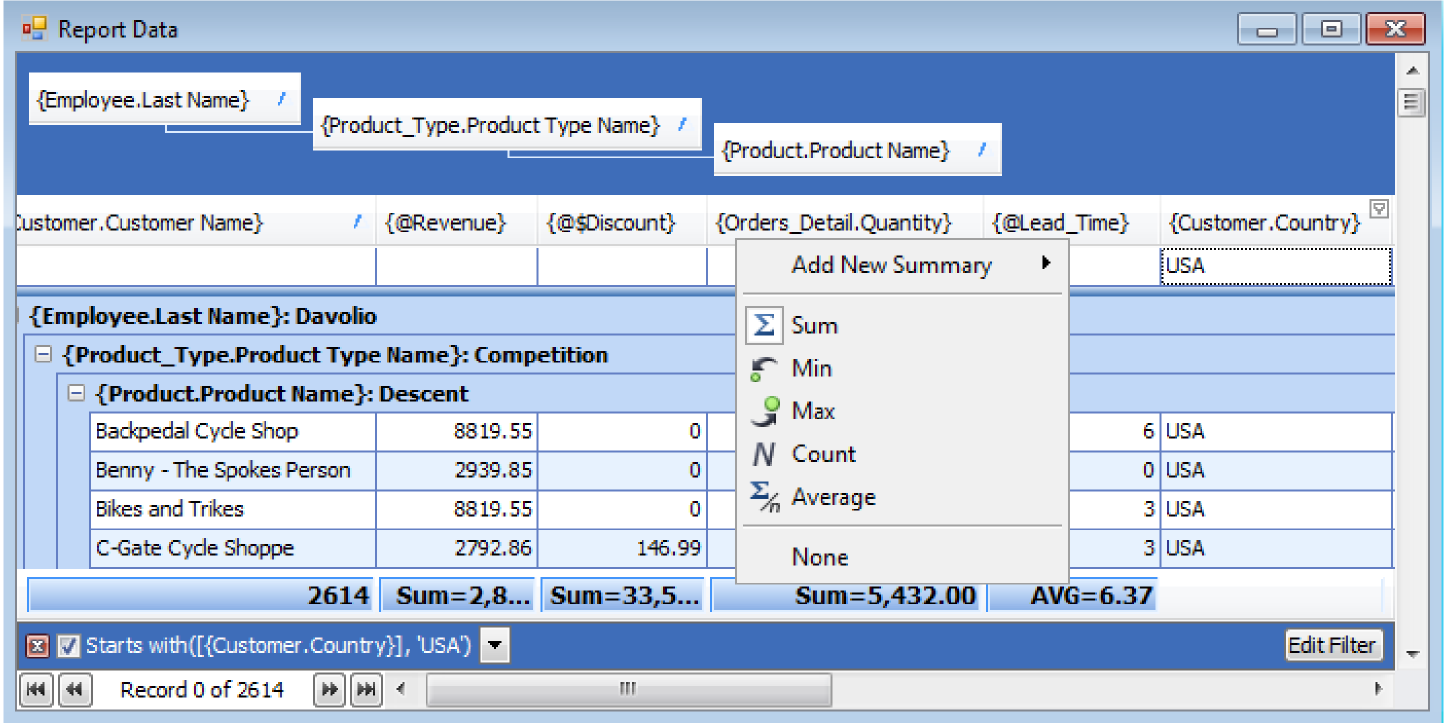
The sample report DLV_2011_Visualization_Demo.rpz was saved with data, so launch it and elect to not refresh the data. Click the Data Grid toolbar icon to load the report data into the interactive grid:



{Orders.Order Date}	{@Cust_Qs}	{@DOW}	{Customer.Customer Name}	{@Lead_Time}	{Customer.Country}	{C
12/24/2004	7	Fri	City Cyclists			Ste
9/25/2004	6	Sat	City Cyclists			Ste
12/24/2003	3	Wed	City Cyclists			Ste
1/26/2005	8	Wed	City Cyclists			Ste
12/24/2003	3	Wed	City Cyclists			Ste
2/16/2004	4	Mon	City Cyclists			Ste
2/16/2004	4	Mon	City Cyclists			Ste
1/30/2004	4	Fri	City Cyclists			Ste
8/9/2004	6	Mon	City Cyclists			Ste
9/30/2004	6	Thu	City Cyclists			Ste
12/2/2003	3	Tue	City Cyclists			Ste
12/24/2004	7	Fri	City Cyclists			Ste
11/7/2004	7	Sun	City Cyclists			Ste
1/6/2004	4	Tue	City Cyclists			Ste

As shown in the image above, the grid allows you to sort, group, size/move/remove/reinsert columns, auto-fit column widths, filter, and search the grid.

As shown by the image below, you can drag column headers to the grouping area to group the grid by Employee, Sales Rep, Product Type, and product.
You can also drag column headers sideways to change the order of the columns.
As shown in this image, summaries are added by right-clicking the area below a column and selecting the desired summary type.



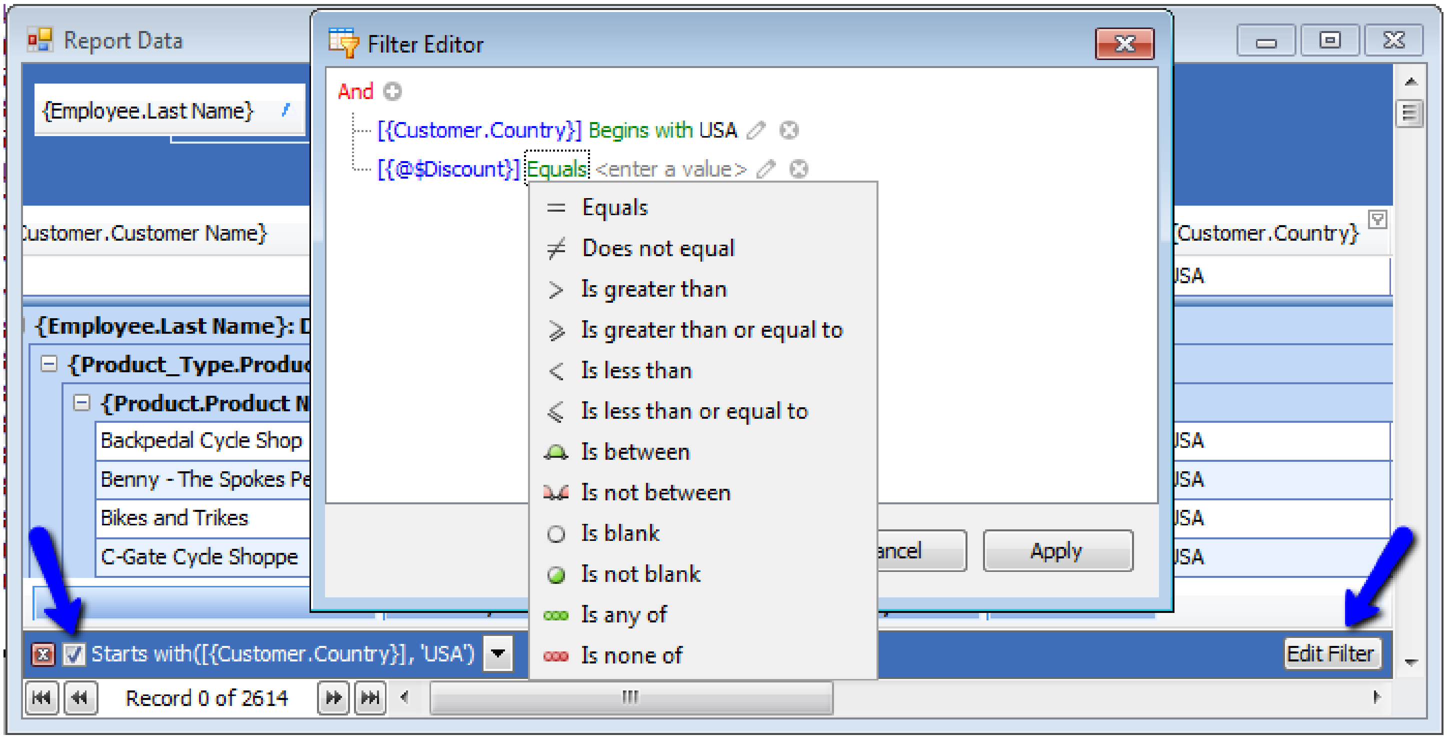
{Employee.Last Name}: Davolio
{Product_Type.Product Type Name}: Competition
{Product.Product Name}: Descent

ustomer.Customer Name}	{@Revenue}	{@$Discount}	{Orders_Detail.Quantity}	{@Lead_Time}	{Customer.Country}
					USA
Backpedal Cycle Shop	8819.55	0		6	USA
Benny - The Spokes Person	2939.85	0		0	USA
Bikes and Trikes	8819.55	0		3	USA
C-Gate Cycle Shoppe	2792.86	146.99		3	USA
2614	Sum=2,8...	Sum=33,5...	Sum=5,432.00	AVG=6.37	

☒ ☑ Starts with([{Customer.Country}], 'USA')

Record 0 of 2614

Filter conditions are displayed at the bottom of the grid and can be edited/suspended/reactivated via a checkbox:



And
[{Customer.Country}] Begins with USA
[{@$Discount}] Equals <enter a value>

{Employee.Last Name}: D
{Product_Type.Produc
{Product.Product N
Backpedal Cycle Shop
Benny - The Spokes Pe
Bikes and Trikes
C-Gate Cycle Shoppe

☒ ☑ Starts with([{Customer.Country}], 'USA')

Record 0 of 2614

What Data is Included?

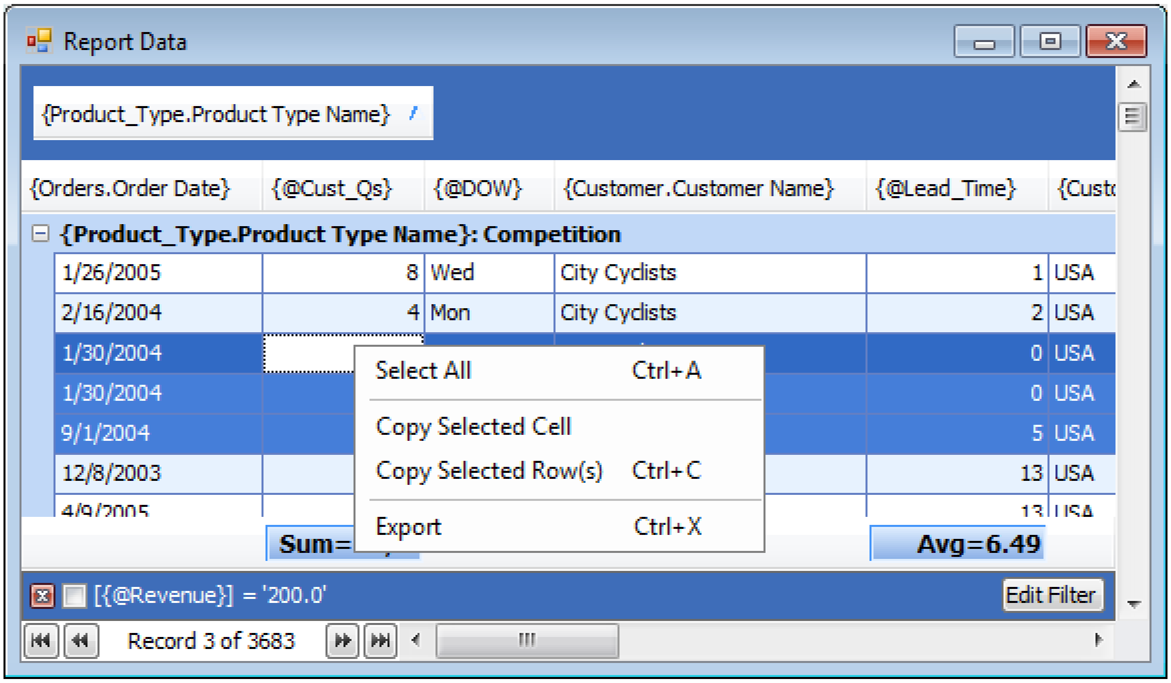
To get loaded into the data grid, a field/formula must be placed on the report layout. Its name must not end with "**_NOK**" (an indication it's Not OK to include it). If the field/formula is suppressed or is placed in a suppressed section, it gets loaded into the grid only if its name ends with "**_OK**". This is designed to avoid exposing sensitive suppressed information.

Disabling the Data Grid functionality

To disable this option set the Disable_Data_Grid option to 'True' in DataLink_Viewer.ini.

Exporting/Copying the Data

Right-clicking the grid, provides a menu with options for selecting, copying, and exporting the data. Export formats include Excel (xls or xlsx), HTML, PDF, Text, etc.



{Product_Type.Product Type Name}: Competition

{Orders.Order Date}	{@Cust_Qs}	{@DOW}	{Customer.Customer Name}	{@Lead_Time}	{Custo
1/26/2005	8	Wed	City Cyclists	1	USA
2/16/2004	4	Mon	City Cyclists	2	USA
1/30/2004				0	USA
1/30/2004				0	USA
9/1/2004				5	USA
12/8/2003				13	USA
4/9/2005				13	USA
	Sum=			Avg=6.49	

☒ □ [{@Revenue}] = '200.0'

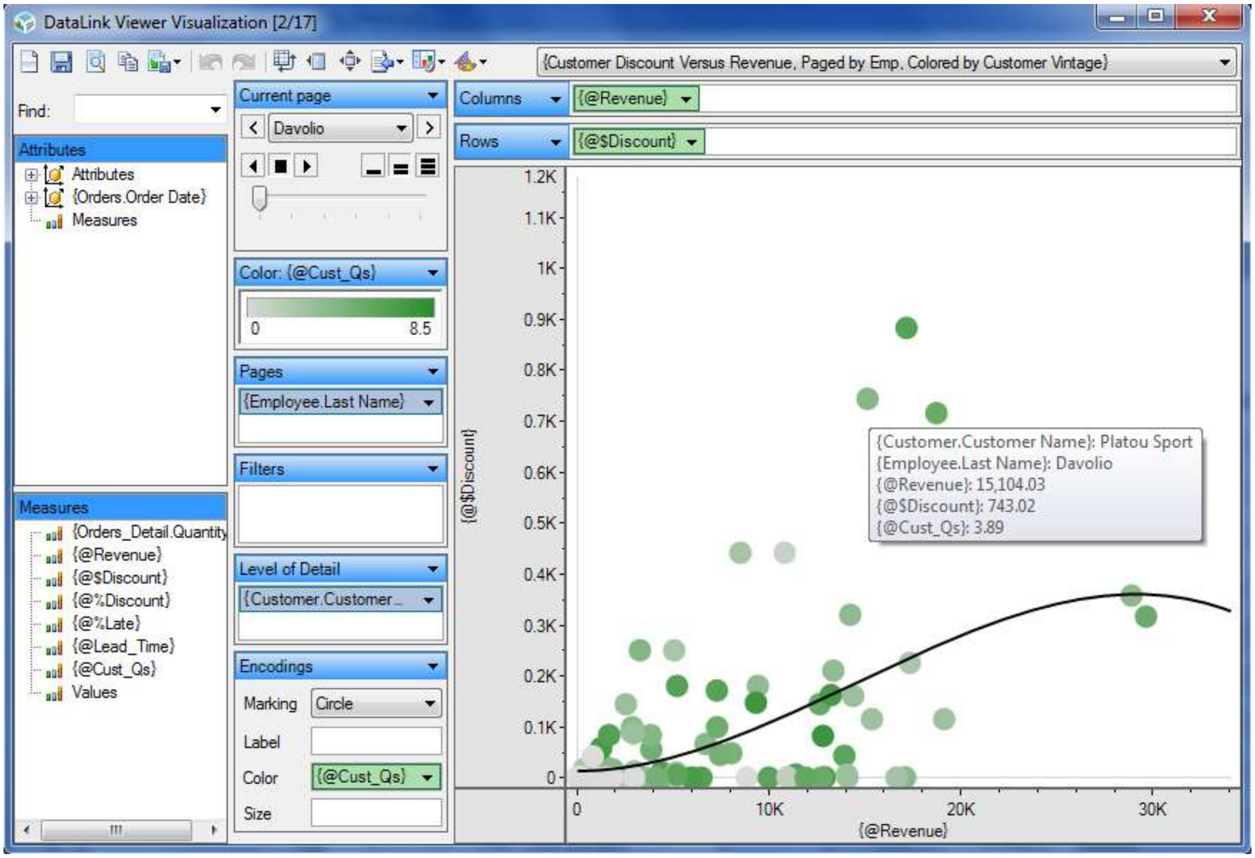
Saving/Restoring Grid Layouts

If the user has modify permissions on the report folder, when the grid is closed, the layout is saved to a .grd file with the same name as the report. This allows the grid to remember its layout for each report. If the File Locations options specified a path to visualization layouts folder, that folder is used for storing these .grd files.

Data Visualizer

When previewing a report, clicking the toolbar button loads the report data into a powerful data visualization tool. The idea is to go beyond regular pivot tables or charts. The user can drag-and-drop to display and drill-down into data patterns using effects such as multiple data panels, animation, filtering, sorting, coloring, sizing, shapes, trend lines, and filters.

DataLink Viewer takes care of loading the report data into the visualizer, and mapping it into Measures (numeric columns), Attributes, and Dates. Dates are treated as special attributes with Year, Quarter, Month, and day hierarchy. Users can then create, save, and reuse visualization layouts. Please watch a 25-minute video demo for more detail.



DataLink Viewer Visualization [2/17]

{Customer Discount Versus Revenue, Paged by Emp, Colored by Customer Vintage}

Columns: {@Revenue}

Rows: {@$Discount}

Current page: Davolio

Color: {@Cust_Qs}

Pages: {Employee.Last Name}

Level of Detail: {Customer.Customer_

Encodings: Marking: Circle; Label: ; Color: {@Cust_Qs}; Size:

{Customer.Customer Name}: Platou Sport
{Employee.Last Name}: Davolio
{@Revenue}: 15,104.03
{@$Discount}: 743.02
{@Cust_Qs}: 3.89

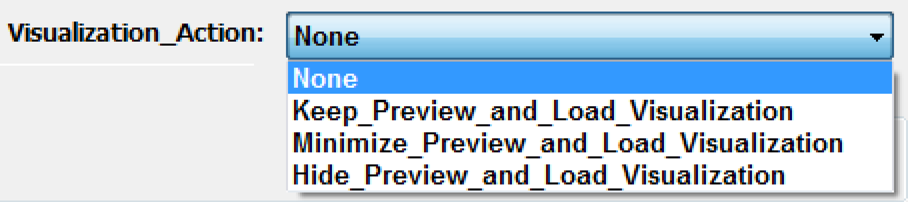
Notes:

- You may disable this functionality by adding this to the master DataLink_Viewer.ini
```
[Options]
Disable_Visualization=True
```

- Since the visualizer takes care of generating summaries from the data, it is best to use it with detail reports.

- To get loaded into the visualizer, a field/formula must be placed on the report layout. Its name must not end with "**_NOK**" (an indication it's Not OK to include it). If the field/formula is suppressed or is placed in a suppressed section, it gets loaded into the list of candidate Fields/Formulas only if its name ends with "**_OK**". This is designed to avoid exposing sensitive suppressed information.

- When a user launches a report that has save visualization layouts, you may want DataLink Viewer to immediately launch the visualization, instead of the report preview. You can achieve that behavior by going into the DataLink Viewer Options dialog, Launch tab, and selecting a Visualization Action:



Visualization_Action: None

None
Keep_Preview_and_Load_Visualization
Minimize_Preview_and_Load_Visualization
Hide_Preview_and_Load_Visualization

- After creating a Visualization layout you can name and save it. What gets saved is only the layout, not the data. So each time you load report data, the layout applies to the new data.

- Visualizations get saved into a.dlvv file, in the report folder (if the user has write permissions on that folder). This allows you to easily distribute the visualizations with your reports.

- Using the Options dialog, you can specify a folder location for visualization files. You can **give users Read-Only, Centralized, or Distributed access to visualization files**.
The logic is as follows:

   1. If the dlvv file for the rpt is found in the rpt folder, it is used there.

   2. If the user has no write permissions to that folder, the layouts get loaded as Read-Only/Embedded layouts (surrounded by {…} to indicate the user won't be able to change/move those layouts. In such Read-Only case, if matching dlvv file is also found where ReportList.txt is managed for the user or under the Visualization Path folder (specified under the File Locations tab in the option dialog), the layouts from that file are appended as regular layouts after the Read-Only layouts from the dlvv file in the report folder.

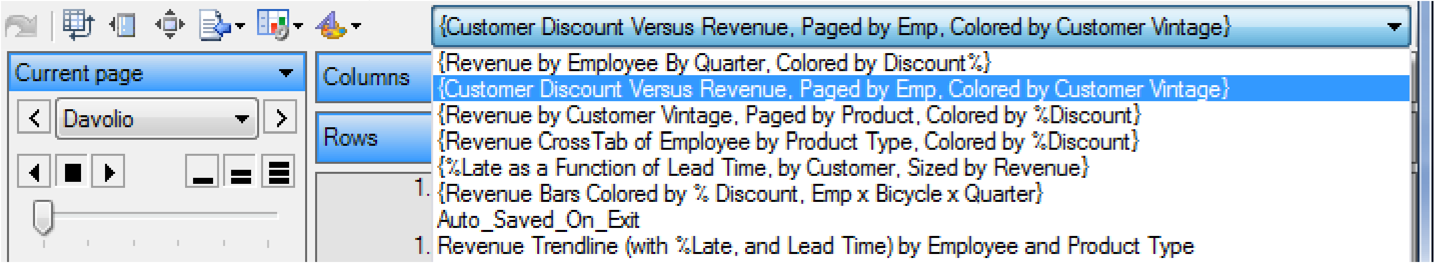
   3. If no dlvv file is found in the report folder, if it is found in the **ReportList folder** (the folder where the ReportList.txt is located), it is used there. Again, if the user has no write permissions to that folder, the user won't be able to save new Visualization Layouts.

   4. Otherwise, if a location was specified in the Options dialog for the visualization layouts folder, the visualization layouts for the report would be loaded from and saved to that folder. Again, if the user has no write permissions to that folder, the user won't be able to save new Visualization Layouts.

5. So **if you use Citrix or Terminal Services server and you wish to give each user their own visualization files, you can specify the visualizations folder as something like H:\... (where H:\ is the user's Home folder.).** If you wish to also include in the layouts for all users a set of protected layouts, place them in the same folder as the RPT files and make sure users don't have write permissions on that folder.

- When packaging an **rpz file**, a new checkbox option allows you to **embed the .dlvv file inside the rpz file**. This makes it easy for professional report writers to develop, protect, and deliver not only reports but also data visualizations to their clients.

- When loading the visualizer for a report that has saved visualization layouts, the 1st layout gets applied to the current data automatically. A drop-down provides access to all the other named visualizations:

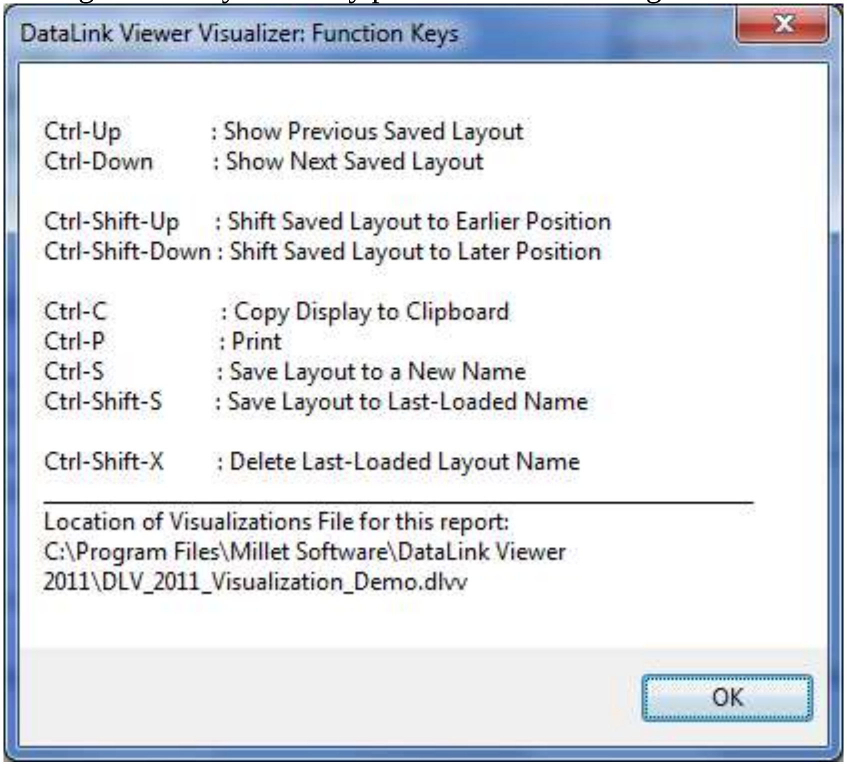


{Customer Discount Versus Revenue, Paged by Emp, Colored by Customer Vintage}

{Revenue by Employee By Quarter, Colored by Discount%}
{Customer Discount Versus Revenue, Paged by Emp, Colored by Customer Vintage}
{Revenue by Customer Vintage, Paged by Product, Colored by %Discount}
{Revenue CrossTab of Employee by Product Type, Colored by %Discount}
{%Late as a Function of Lead Time, by Customer, Sized by Revenue}
{Revenue Bars Colored by % Discount, Emp x Bicycle x Quarter}
Auto_Saved_On_Exit
Revenue Trendline (with %Late, and Lead Time) by Employee and Product Type

In the example above, the top 6 layouts are surrounded with curly brackets {…}, indicating these visualizations were embedded inside the rpz file. The next 2 items were added by the user and are managed in a local .dlvv file. Only non-embedded entries can be added, deleted, renamed, and sorted by the user.

- Hitting the F1 keyboard key provides the following reminders about useful function keys:



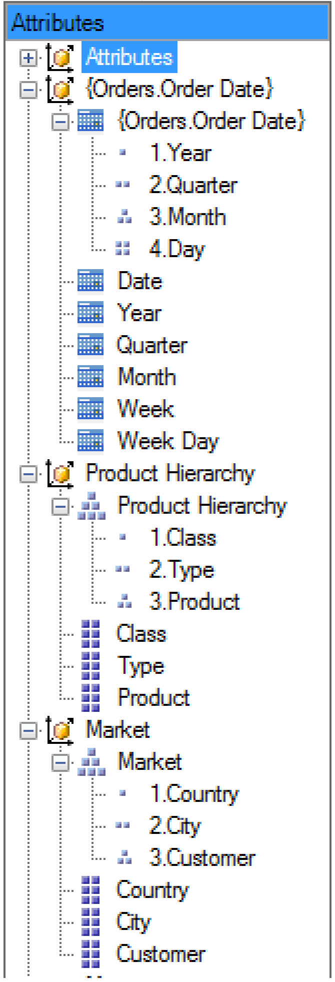
DataLink Viewer Visualizer: Function Keys

Ctrl-Up	: Show Previous Saved Layout
Ctrl-Down	: Show Next Saved Layout
Ctrl-Shift-Up	: Shift Saved Layout to Earlier Position
Ctrl-Shift-Down	: Shift Saved Layout to Later Position
Ctrl-C	: Copy Display to Clipboard
Ctrl-P	: Print
Ctrl-S	: Save Layout to a New Name
Ctrl-Shift-S	: Save Layout to Last-Loaded Name
Ctrl-Shift-X	: Delete Last-Loaded Layout Name

Location of Visualizations File for this report:
C:\Program Files\Millet Software\DataLink Viewer 2011\DLV_2011_Visualization_Demo.dlvv

Adding Hierarchies

As shown for {Orders.Order Date} below, each date column automatically generates a dimension node with a date hierarchy of Year, Quarter, Month, and Day. The dimension node also hosts these elements (plus Week and Week Day) as separate attributes, in case the user wishes to use them independently (e.g. Revenue by Quarter regardless of the Year).



Attributes

- Attributes
- {Orders.Order Date}
  - {Orders.Order Date}
    - 1.Year
    - 2.Quarter
    - 3.Month
    - 4.Day
  - Date
  - Year
  - Quarter
  - Month
  - Week
  - Week Day
- Product Hierarchy
  - Product Hierarchy
    - 1.Class
    - 2.Type
    - 3.Product
  - Class
  - Type
  - Product
- Market
  - Market
    - 1.Country
    - 2.City
    - 3.Customer
  - Country
  - City
  - Customer

However, you may want to add your own custom hierarchies. The **Product** and **Market** hierarchies shown to the right, demonstrate how you can package attributes into a hierarchy node so that a user can drag the whole hierarchy to a shelf and proceed to expand/collapse its branches.

Each custom hierarchy is located under its own dimension node. The dimension node also hosts the hierarchy attributes as independent elements. By applying user-friendly names to all these nodes, the user can find these attributes more easily.

You can add custom hierarchies for your visualizations by adding a **[Visualization_Hierarchies]** section to DataLink_Viewer.ini. See example below.

The **Top_Nodes** entry in that section specifies what columns, if found in the report data, should be used as top nodes in custom hierarchies. The column names are separated by **:::** **.**

Each top node, such as **{Product.Product Class}** has an entry defining the following elements:

- Hierarchy Label followed by ^^^. For example: Product Hierarchy^^^
  This label applies also to the dimension node that hosts the hierarchy and its components.
- This is followed by the sequence of attributes making up the levels of the hierarchy from top, separated by >>> delimiters.
- Each level is specified as the column name and its friendly name, separated by **:::**

```
[Visualization_Hierarchies]
Top_Nodes={Product.Product Class}:::{Customer.Country}

{Product.Product Class}=Product Hierarchy^^^{Product.Product Class}:::Class>>>{Product_Type.Product Type Name}:::Type>>>{Product.Product Name}:::Product

{Customer.Country}=Market^^^{Customer.Country}:::Country>>>{Customer.City}:::City>>>{Customer.Customer Name}:::Customer
```

Automated Exporting

See the user manual section on '***Fully-Automated Exporting of Data Visualizations***' for detail

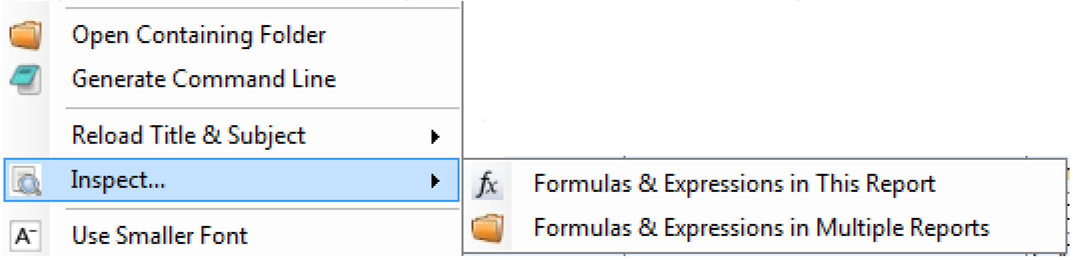
Report Inspection & Documentation Tools

Note: Visual CUT extends this functionality to allow mass updates of formulas, expressions, text, and data sources.

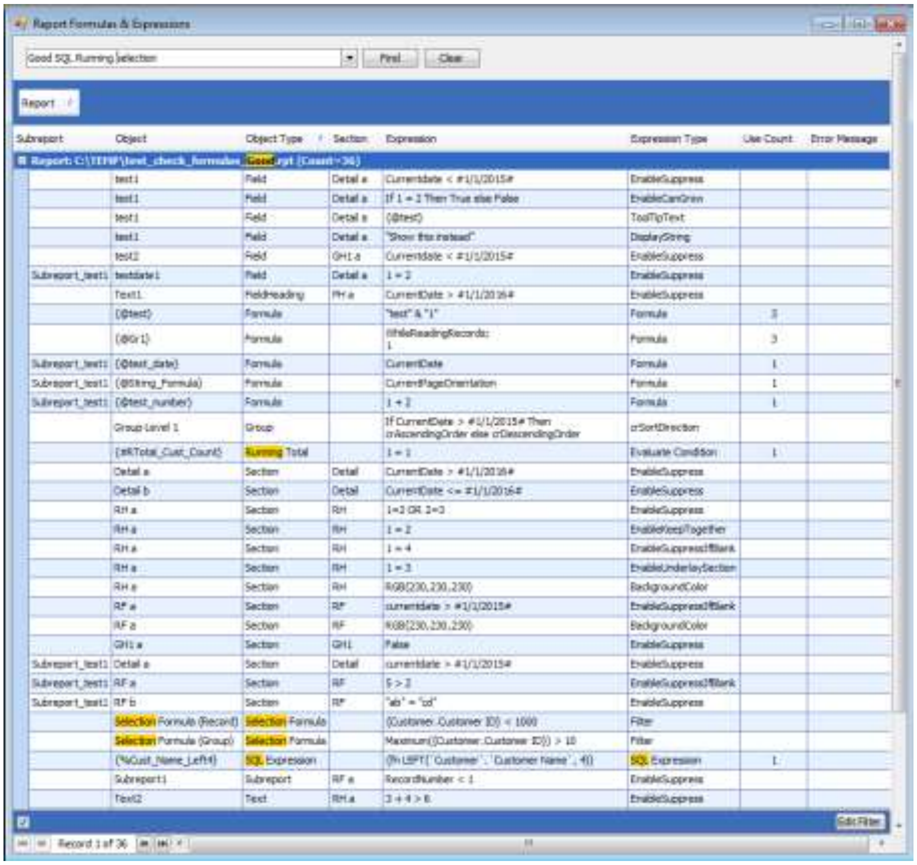
Report Inspector

DataLink Viewer allows you to **inspect report formulas, data connections, database tables, parameters, text objects, field objects, sections, SQL expressions, running totals, selection formulas, and conditional formatting expressions for one or multiple reports**.

A right-click menu on a report grid row provides the following menu options:



The results are presented in a grid allowing grouping, sorting, searching, exporting, and filtering. Formulas that fail to compile are presented with an error message.



Good SQL Running Selection

Report: C:\TEMP\test_check_formulas_Good.rpt (Count=36)

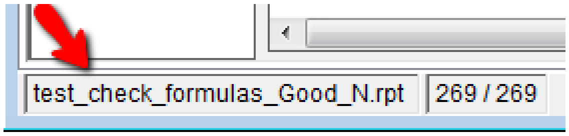
Subreport	Object	Object Type	Section	Expression	Expression Type	Use Count	Error Message
	test1	Field	Detail a	Currentdate < #1/1/2015#	EnableSuppress		
	test1	Field	Detail a	If 1 = 2 Then True else False	EnableCanGrow		
	test1	Field	Detail a	{@test}	ToolTipText		
	test1	Field	Detail a	"Show this instead"	DisplayString		
	test2	Field	GH1 a	Currentdate < #1/1/2015#	EnableSuppress		
Subreport_test1	testdate1	Field	Detail a	1 = 2	EnableSuppress		
	Text1	FieldHeading	PH a	CurrentDate > #1/1/2016#	EnableSuppress		
	{@test}	Formula		"test" & "1"	Formula	3	
	{@Gr1}	Formula		WhileReadingRecords; 1	Formula	3	
Subreport_test1	{@test_date}	Formula		CurrentDate	Formula	1	
Subreport_test1	{@String_Formula}	Formula		CurrentPageOrientation	Formula	1	
Subreport_test1	{@test_number}	Formula		1 + 2	Formula	1	
	Group Level 1	Group		If CurrentDate > #1/1/2015# Then crAscendingOrder else crDescendingOrder	crSortDirection		
	{#RTotal_Cust_Count}	Running Total		1 = 1	Evaluate Condition	1	
	Detail a	Section	Detail	CurrentDate > #1/1/2016#	EnableSuppress		
	Detail b	Section	Detail	CurrentDate <= #1/1/2016#	EnableSuppress		
	RH a	Section	RH	1=2 OR 2=3	EnableSuppress		
	RH a	Section	RH	1 = 2	EnableKeepTogether		
	RH a	Section	RH	1 = 4	EnableSuppressIfBlank		
	RH a	Section	RH	1 = 3	EnableUnderlaySection		
	RH a	Section	RH	RGB(230,230,230)	BackgroundColor		
	RF a	Section	RF	currentdate > #1/1/2015#	EnableSuppressIfBlank		
	RF a	Section	RF	RGB(230,230,230)	BackgroundColor		
	GH1 a	Section	GH1	False	EnableSuppress		
Subreport_test1	Detail a	Section	Detail	currentdate > #1/1/2015#	EnableSuppress		
Subreport_test1	RF a	Section	RF	5 > 2	EnableSuppressIfBlank		
Subreport_test1	RF b	Section	RF	"ab" = "cd"	EnableSuppress		
	Selection Formula (Record)	Selection Formula		{Customer.Customer ID} < 1000	Filter		
	Selection Formula (Group)	Selection Formula		Maximum({Customer.Customer ID}) > 10	Filter		
	{%Cust_Name_Left4}	SQL Expression		{fn LEFT("Customer"."Customer Name", 4)}	SQL Expression	1	
	Subreport1	Subreport	RF a	RecordNumber < 1	EnableSuppress		
	Text2	Text	RH a	3 + 4 > 6	EnableSuppress		

See a full-sized sample image here: http://screencast.com/t/74ux1XgWRms

Note: to disable this functionality, set `Disable_Inspect_Reports=True` in the DataLink_Viewer.ini [Options] section.

Report Documentation

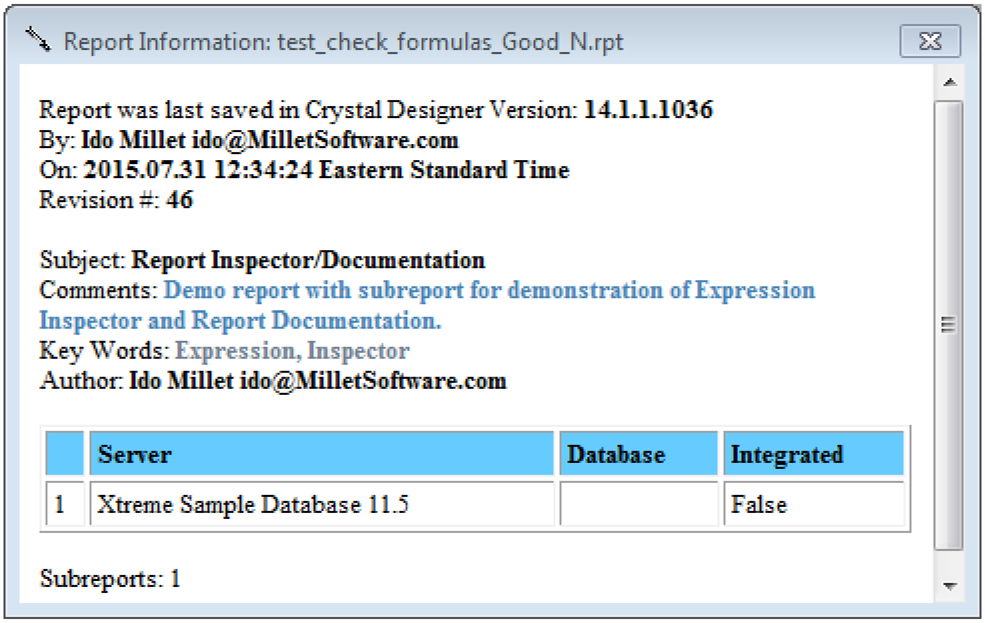
After previewing a report, a click on the status bar panel displaying the report name:



test_check_formulas_Good_N.rpt

269 / 269

provides a report documentation window such as this:



Report was last saved in Crystal Designer Version: **14.1.1.1036**
By: **Ido Millet ido@MilletSoftware.com**
On: **2015.07.31 12:34:24 Eastern Standard Time**
Revision #: **46**

Subject: **Report Inspector/Documentation**
Comments: **Demo report with subreport for demonstration of Expression Inspector and Report Documentation.**
Key Words: **Expression, Inspector**
Author: **Ido Millet ido@MilletSoftware.com**

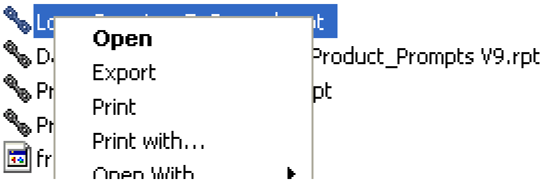
	Server	Database	Integrated
1	Xtreme Sample Database 11.5		False

Subreports: 1

Launching Reports & Command Line API

Launch Reports from File Explorer

DataLink Viewer allows you to launch a report from the Windows File Explorer by Right-Clicking a **.rpt** or **.rpz** file. The typical File Explorer menu provides the following extra options:



Open: launches a report to a Preview window.
Export: exports the report to a user selected export format and disk file.
Print: prints the report to the Default printer.
Print with…: prints the report to a user-selected printer.

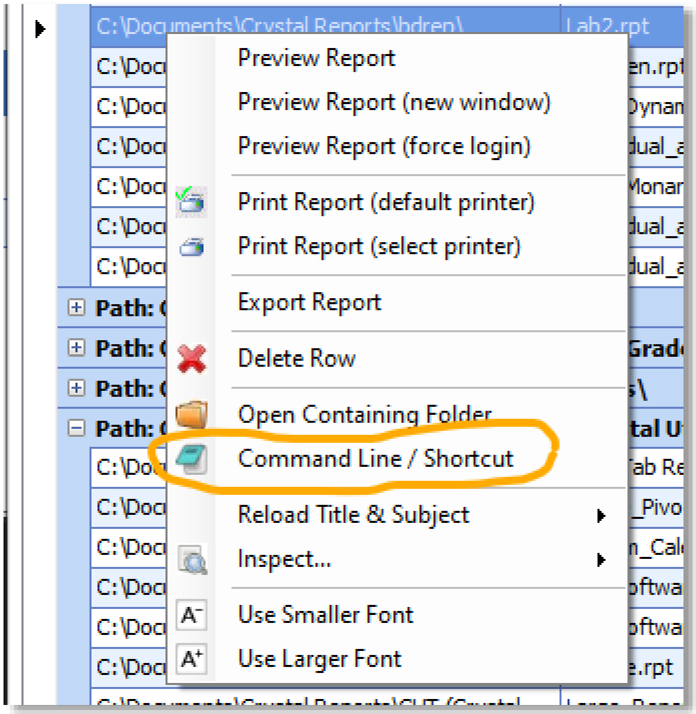
These options allow users to invoke exporting or printing of a report without previewing it. This means users don't have to wait for the preview to complete before providing exporting or printing choices. Similar choices are available from the full user interface in DataLink Viewer (by right-clicking a report row in the 1st-tab grid). However, some users may prefer to use File Explorer as a launch mechanism without starting DataLink Viewer.

Note: DataLink Viewer associates these file explorer actions with **.rpt** and **.rpz** files only on PCs where these extensions are not already associated with other applications. This means that on a machine where Crystal Reports is already installed (where **.rpt** files are already associated with the Crystal application) you will not see these right-click menu options in File Explorer.

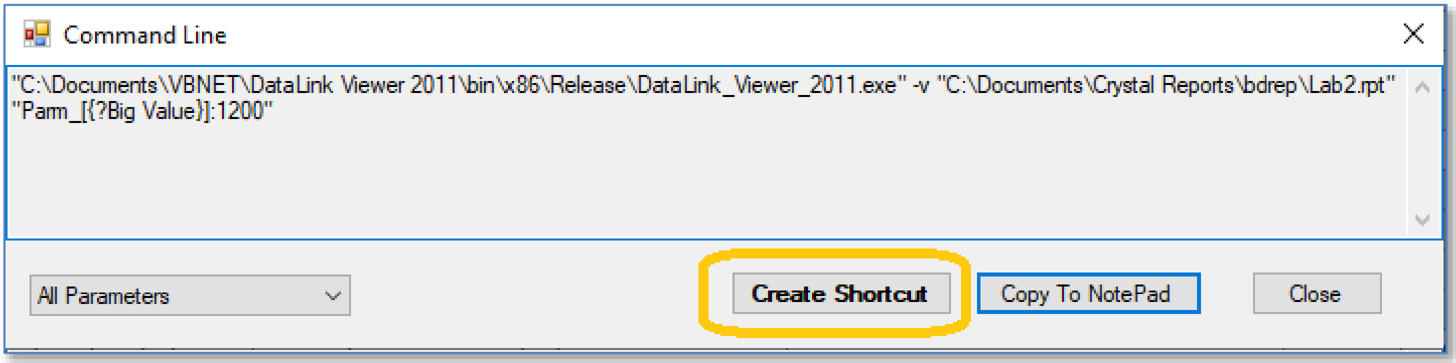
Generate Desktop Shortcuts to Launch Reports

Using the right-click menu on the report list grid, you can easily generate a desktop shortcut to launch a report. See video demo.

Select the ***Command Line / Shortcut*** option:



And use the resulting dialog to 'Create Shortcut':



```
"C:\Documents\VBNET\DataLink Viewer 2011\bin\x86\Release\DataLink_Viewer_2011.exe" -v "C:\Documents\Crystal Reports\bdrep\Lab2.rpt"
"Parm_[{?Big Value}]:1200"
```

This creates a desktop shortcut that launches the report.

DataLink Viewer remembers the size, location, zoom level, and Group Tree panel status last used for each report previewed from its desktop shortcut.

You can right-click the shortcut to edit its properties. For example, remove some parameter arguments (from the *Target* property) to prompt the user for their values.

Launch Reports from Command Lines

DataLink Viewer allows you to launch a report from another application, from batch files, or from a shortcut using a command line.

The general structure of the command line is:
1) the full path and name of the **DataLink Viewer executable**

2) **–S** or **–V** as a processing flag indicating we are requesting a report to be **s**hown/**v**iewed
-S shows the report and ***allows selection of other reports*** via the Report Selection Tab
-V is a ***View Only*** option that ***allows only viewing of the specified report***
(the Report Selection Tab is not available to the user)

3) the **report path and file name**
4) Optional **Parameter value arguments** supplied as **"ParmN:Value"**
(where N is the position of the parameter in the parameter list within the Crystal report)
5) Optional **User ID** and **Password arguments**
6) Other optional arguments: Export, Printer, Print_Copies, ODBC_DSN**,** ODBC_DSN_From_To, Oracle_Server, Connect_To_SQLOLEDB, Auto_Refresh, ViewMode, Disable_Print_Button, Disable_Print_ThisPage_Button, Disable_Print_Quick_Button, Disable_Export_Button, Disable_Search_Button, Disable_Refresh_Button, DB_Path_Use_Default, Disable_Group_Swap

Examples**:**

1. Invoke viewing of a sample report while **passing 1997 as the 1st parameter value:**

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe"
-s "C:\Temp\DataLink_Viewer_Year_and_Product_Prompts.rpt"  "Parm1:1997"
```

2. Invoke viewing of a secure report while **passing User_ID and Passord:**

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe"
-s "C:\temp\Some Secure Report.rpt" "user_id:dba" "password:sql"
```

3. Invoke viewing of a report with only Preview tab (no Select Report tab) and specify an ODBC data source. This is useful in cases where you have multiple database with the same structure. You create several ODBC DSNs and can control via a command line which database is used:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe"
-v "C:\temp\MyReport.rpt" "ODBC_DSN:Company1"
```

Handling Saved Data

You can force or avoid the use of saved data using a command line argument.
You can also use the Options dialog to set the default launch option (Refresh/Prompt/Display) for saved data.

Call DataLink Viewer from Another Application

Here's a code example of invoking DLV from a visual basic application with only a Preview tab (no Select Report tab) and specifying a parameter value. Note that double quotes are "escaped" by using
""
instead of
"

```
Dim RetVal
ls_temp = "C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe " &
_
"-v ""c:\temp\Lab2_Chase.rpt"" ""Parm1:800"""

RetVal = Shell(ls_temp)
```

Here's a code example for invoking DLV from a vba event and dynamically setting the report path, name, and parameter value:

```
Private Sub Combo0_AfterUpdate()
Dim rs As Object
Set rs = Me.Recordset.Clone
rs.FindFirst "[txtReportName] = '" & Me![Combo0] & "'"
If Not rs.EOF Then Me.Bookmark = rs.Bookmark

Dim myreport As String
Dim stAppName As String
Dim myvalret As String
' me.fullrep is a field that concatenates the report path and name
myreport = Me.fullrep
myvalret = Str(MyCaseno)
stAppName = "C:\Program Files\Millet Software\DataLink Viewer
2011\DataLink_Viewer_2011.exe" & _
               " -s """ & myreport & """ ""Parm1:" & myvalret & """"
DoCmd.Close
Call Shell(stAppName, 1)
End Sub
```

ViewMode (Remove Toolbar/Status bar/TitleBar)

When you trigger a report from a command line using a –v (View Only window), you can also elect to remove the toolbar/status bar/title bar in order to maximize the space available for the report itself.

The command line argument for controlling this behavior is "ViewMode" and it has these possible values:
…"ViewMode:**NoStatusBar**" - only the status bar at the bottom of the window is removed
…"ViewMode:**NoToolBar** **-** only the toolbar at the top of the window is removed
…"ViewMode:**NoBars**" - both the toolbar and the status bar are removed
…"ViewMode:**NoBarsNoTitle**" - toolbar, status bar, and window title are all removed

A typical scenario for using this option is in combination with the Auto_Refresh command line argument. For example:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v
"C:\temp\Report.rpt" "Auto_Refresh:300" "ViewMode:NoBars"
```

Referring to Saved Encrypted Passwords

This section describes how to centralize and protect passwords by avoiding specifying them directly inside command line argument. Instead, you can name, encrypt and store the passwords inside DataLink_Viewer.ini. Besides protecting your passwords, this also allows you to change the passwords in one location, instead of in multiple command line arguments.

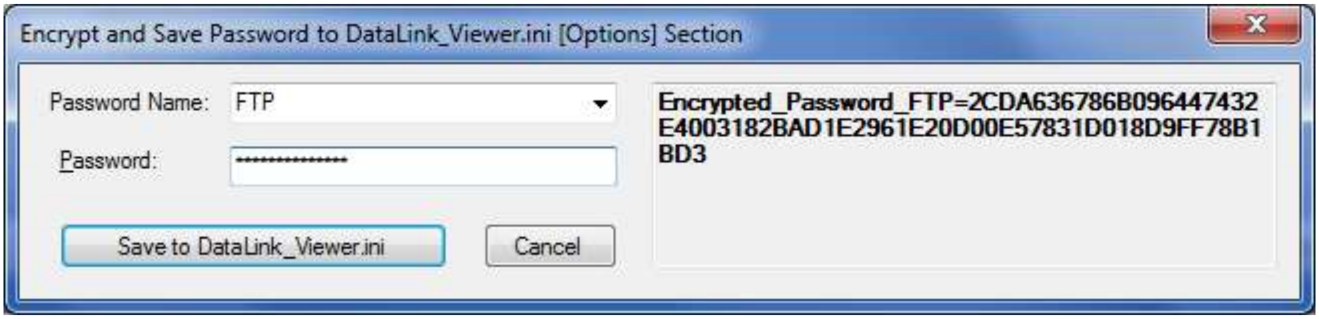
Instead of specifying a plain password in a command line such as:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v "C:\temp\my.rpt" "user_id:dba" "password:sesame"
```

You can refer to a saved and encrypted password like this:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v "C:\temp\my.rpt" "user_id:dba" "password:Encrypted_Password_FTP"
```

To save the encrypted password, go to the Launch tab in the Options dialog and click on the '***Encrypt & Save Password***' button. This provides the following dialog:



Encrypt and Save Password to DataLink_Viewer.ini [Options] Section
Save to DataLink_Viewer.ini
Cancel

Password Name: FTP

Password: ****************

```
Encrypted_Password_FTP=2CDA636786B096447432
E4003182BAD1E2961E20D00E57831D018D9FF78B1
BD3
```

The ini file entry is always named as "**Encrypted_Password_**" followed by the password name you specify. So in my case, the full name is **Encrypted_Password_FTP**. From that point on, I can refer to that password inside my command line arguments as ***Encrypted_Password_FTP*** and DataLink Viewer would make the appropriate substitution.

If you need to change a previously saved password, use the drop-down to select the previously saved password name and enter a new password.

Command Line Arguments for Parameter Values (old approach)

Since parameter values can have different data types and structures (discrete, multi-value, range, mixed), this section explains how you can specify parameter values via command lines.
All arguments must be **enclosed in double quotes** and **separated by a single space**.

A numeric or string parameter would be specified as:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v
"C:\temp\MyReport.rpt" "Parm1:1998"
```

A date parameter would be specified as:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v
"C:\temp\MyReport.rpt" "Parm1:3/10/2003"
```

DataLink Viewer handles the data type conversion to match the parameter data type.
The syntax is constructed as the word "Parm", followed by the number of the parameter (according to the order of parameters shown in Crystal), followed by a colon and the value.

Here's how you would specify the 1st and 3rd parameter values:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v "C:\Program
Files\DataLink Viewer 12\MyReport.rpt" "Parm1:1998" "Parm3:Ido Millet"
```

Range and Multi-Value Parameters

DataLink Viewer supports all parameter types including multi-value, range, and mixed parameters. A multi-value discrete parameter value is specified as follows:

```
...  "Parm1:Competition:::Gloves:::Helmets"
```

A range parameter (in this case a date range) is specified as follows:

```
...  "Parm1:7/15/1996>>>7/15/2003>>>3"
```

The **3** at the end indicates the start and end points are included.
A **0** at the end would indicate the start and end points are NOT included.
A **2** at the end would indicate the start point is included and the end point is not.
A **1** at the end would indicate the start point is not included and the end point is.
Add 4 to these values if there is no Upper Bound.
Add 8 to these values if there is no Lower Bound.

For example, this would indicate all dates up to, and including 7/15/2003:

```
--------------------------------------------------
...  "Parm1:12:00:00 AM>>>7/15/2003>>>9"
--------------------------------------------------
```

The 12:00:00 AM value is just a place-holder. Any date value would work (will be ignored).

Command Line Arguments for Parameter Values (New Approach)

A more user friendly way to specify parameter values was added in July 2016. Instead of referring to the position of a parameter in the parameter list, you can now refer to it by its name.
For example, instead of
`"Parm1:3/16/2010"`
you can use
`"Parm_[{?Start}]:3/16/2010"`

The arguments starts with Parm_[followed by the parameter name. Then, after a]: separator, the parameter value is provided.

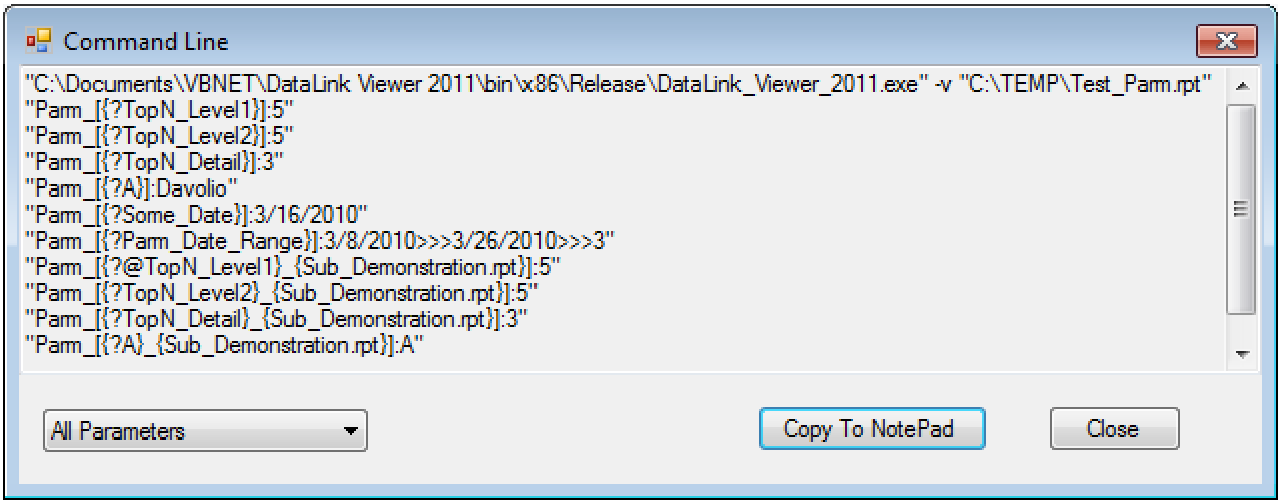
Specifying Subreport Parameter Values

To specify subreport parameter value, you structure the argument to include the subreport name:
`"Parm_[{?Start}_{Sales.rpt}]:3/16/2010"`

GENERATING A COMMAND LINE WITH PARAMETERS

No need to study the structure of the arguments above. Instead, simply right click the report row in the report grid and select 'Command Line / Shortcut'. You would then get a dialog with the full command line elements. Then, click on the button to 'Copy to NotePad' and the command line would be copied into a NotePad window.

Note: the parameter arguments are populated from previously saved parameter values (or from the report's saved data). So, preview the report in DataLink Viewer at least once to establish saved parameter values.



```
"C:\Documents\VBNET\DataLink Viewer 2011\bin\x86\Release\DataLink_Viewer_2011.exe" -v "C:\TEMP\Test_Parm.rpt"
"Parm_[{?TopN_Level1}]:5"
"Parm_[{?TopN_Level2}]:5"
"Parm_[{?TopN_Detail}]:3"
"Parm_[{?A}]:Davolio"
"Parm_[{?Some_Date}]:3/16/2010"
"Parm_[{?Parm_Date_Range}]:3/8/2010>>>3/26/2010>>>3"
"Parm_[{?@TopN_Level1}_{Sub_Demonstration.rpt}]:5"
"Parm_[{?TopN_Level2}_{Sub_Demonstration.rpt}]:5"
"Parm_[{?TopN_Detail}_{Sub_Demonstration.rpt}]:3"
"Parm_[{?A}_{Sub_Demonstration.rpt}]:A"
```

OPTIONAL PARAMETERS WITH NO VALUE

To specify no value for an optional parameter, provide a blank value (e.g., "**Parm2:"**). **HasValue()** function, within the Crystal report, would then return False, as if the user didn't specify any value for the optional parameter.

NULL VALUES

Null parameter values (for stored procedures) are specified in command lines by using the constant **[VC_NULL]**. For example, to specify that the first parameter value is null, use:
"Parm1:**[VC_NULL]**"

IGNORING SAVED PARAMETER VALUES

In order to ignore saved parameter values, use the following command line argument:
"Ignore_Saved_Parameter_Values:[ALL]"
The user would then get prompted for unspecified parameter values, skipping the saved parameter values dialog.

DATE CONSTANTS

When setting parameters via command line arguments, you can use the following special expressions to set Date or DateTime values. DLV can do this for **discrete** or **range** date parameters. The supported constants are:

1. TODAY -or- YESTERDAY
2. TODAY_PLUS_**N** -or- TODAY_MINUS_**N** -or-
   TODAY_MINUS_**N**_MINUS_**M** -or-
   TODAY_MINUS_**N**_MINUS_**M_EOM** -or-
   TODAY_MINUS_**N**_MINUS_**M_SOM**

3. START_MONTH_PLUS_**M** -or- START_MONTH_MINUS_**M**
4. END_MONTH_PLUS_**M** -or- END_MONTH_MINUS_**M**

5. START_YEAR_PLUS_**Y** -or- START_YEAR_MINUS_**Y**
6. END_YEAR_PLUS_**Y** -or- END_YEAR_MINUS_**Y**
7. Nth_**N**_PLUS_**M** –or- Nth_**N**_MINUS_**M**
8. LAST_MM_DD –or- NEXT_MM_DD

9. Now_Plus_**S** -or- Now_Minus_**S**
10. YMD=+Y/Month/Day_of_Month or YMD=-Y/Month/EOM

Where N=days, M=Months, Y=Years, and S=seconds to be added or subtracted.
For example, if the current date is **March 6, 2004** then:

Today = 3/6/04
Nth_16_MINUS_1 = 2/16/04 (the 16th of the previous month)
Today_Minus_3 = 3/3/04
Last_04_01 = April 1, 2003
End_Month_Plus_0 = 3/31/04
End_Month_Minus_1 = 2/29/04
Start_Year_Plus_0 = 1/1/04
Start_Year_Minus_1>>>Today>>>3 = Inclusive **range** of [**1/1/03** to **3/6/04**]
YMD=-1/6/15 = 6/15/2003 (-1 indicates 1 year prior).
YMD=+0/6/EOM = 6/30/2004 (must use + or – after the = sign). EOM = End of Month.

In the case of Today_Minus_**N**_Minus_**M**, **N** is the Days and **M** is the Months, so:

Today_Minus_**1**_Minus_**2** = 1/5/2004 (one day and two months earlier)

Adding _EOM or _SOM to the end of a Today_Minus_**N**_Minus_**M** constant returns the End-of-Month or Start-of-Month, so:
Today_Minus_**1**_Minus_**2_SOM** = 1/1/2004 (Start of Month for 1/5/2004)
Today_Minus_**1**_Minus_**2_EOM** = 1/31/2004 (End of Month for 1/5/2004)

For DateTime parameters, **Now_Plus_S** or **Now_Minus_S**, returns the current datetime adjusted by the number of specified seconds. For Time parameters, this argument returns just the current time adjusted by the number of specified seconds. For example, if the current datetime is
June 17, 2008, 5:22:38 PM then **Now_Minus_3600** returns
June 17, 2008, 4:22:38 PM for a **DateTime** parameter and **4:22:38 PM** for a **Time** parameter.

You can specify a Date Constant as the parameter value in a command line invocation of DataLink Viewer. For example:

"…\DataLink_Viewer_2011.exe" -v "C:\Test\Report.rpt" "Parm1:Today"

or, for a range parameter:

… -v "C:\Test\Report.rpt" "Parm1:Start_Month_Minus_1>>>Yesterday>>>3"

Benefits: these date constants allow you to **use the same report interactively (specifying any date as the parameter value) as well as in scheduled mode**. This can also lead to **faster report execution** since using date functions in the record selection formula within the report can force record selection to be performed by Crystal instead of by the DBMS.

Note: for DateTime parameter, the Time portion of the parameter value is set by these constants to 12:00:00 AM (start of the day). **To set a DateTime parameter to the end of the day (11:59:59 PM)**, you must include the parameter name in a DataLink_Viewer.ini entry
under the [Options] section like this (the parameter names are separated by ||):

```
--------------
[Options]

Date_Constants_EndofDay_Parameters={?To_Date}||{?EndDate}
-------------
```

Custom Calendars

If you need to set ***Date*** or ***DateTime*** parameters to the start or end date of custom periods (for example, Fiscal Weeks or Quarters) relative to a current or shifted date, you specify just the start dates of the periods in the DataLink_Viewer.ini as follows:

```
[Custom_Calendars]
FiscalQ =1/1/2013>>4/1/2013>>7/1/2013>>10/1/2013>>1/1/2014
```

For this **FiscalQ** custom calendar example, you can specify parameter values like this:
"Parm1:**FiscalQ_Start_RelativeTo_Yesterday**"
FiscalQ is the name of the custom calendar, **Start** requests the start date of the period within which the relative date falls. If you specify **End**, the parameter is set to **1 day before the next start period** (at 11:59:59 if DateTime parameter).
RelativeTo is a fixed word. The **date constant** can be any date constants as described in the Date Constants section above. Assuming today is 6/7/2013:
"Parm1:**FiscalQ_Start_RelativeTo_Today**" **would return** 4/1/2013
"Parm1:**FiscalQ_End_RelativeTo_Today_Minus_5**" **would return** 6/30/2013
"Parm1:**FiscalQ_End_RelativeTo_Start_Year_Minus_1**" **would return** 3/31/201**2**

If the relative date falls outside the boundaries of the calendar, the custom calendar years are shifted until the relative date is within the calendar. This **allows you to set the custom calendar and not worry about updating it again** (if the dates remain the same across years).

Adjusting Data Constants for Day of Week

Visual CUT allows you to set a date parameter to the first day of week (DOW) before or after a specified date constant. For example, the first Monday in the previous month.

The syntax options are as follows:

`DayOfWeek[>]Date_Constant`   for first target DOW after the date constant.
`DayOfWeek[<]Date_Constant`   for first target DOW before the date constant.

Or, same as above except that date returned from date constant is used if it falls on target DOW:
`DayOfWeek[>=]Date_Constant`
`DayOfWeek[<=]Date_Constant`

Examples, assuming today is Tuesday, March 10, 2015

"Parm1:Wednesday[>]Today"   => March 11, 2015
"Parm1:Wednesday[<]Today"   => March 04, 2015
"Parm1:Tuesday[>]Yesterday"   => March 10, 2015
"Parm1:Tuesday[>=]Today"   => March 10, 2015

Number Constants

When triggering viewing, printing, or exporting via a command line for a report that has a Numeric parameter, you may want to set the parameter to a constant reflecting a year or a month relative to the current year or the current month. DLV can do this for **discrete** or **range** **number** (not currency) parameters.

The supported constants are:

1. MONTH_PLUS_**N** -or- MONTH_MINUS_**N**
2. YEAR_PLUS_**N** -or- YEAR_MINUS_**N**
3. YEAR_AT_PLUS_MONTHS_**N** -or- YEAR_AT_MINUS_MONTHS_**N**
4. YearMonth_AT_PLUS_MONTHS_N –or- YearMonth_AT_MINUS_MONTHS_N

Where N is the number of months/years to be added/subtracted from the current month/year.

For example, if the current date is **January 6, 2005** then:
Month_Plus_0 = **1**
Month_Minus_1 = **12**
Year_Plus_0 = **2005**
Year_Minus_2 = **2003**
Year_AT_Minus_Months_1 = **2004**
YearMonth_AT_MINUS_MONTHS_3 = **200410** (year=**2004** and month = **10**)

You can specify a Number constant as the parameter value in a command line invocation of DataLink Viewer. For example:

```
… -v "C:\Test\Report.rpt" "Parm1:Year_Plus_0"
```

Benefits: these constants allow you to use the same report interactively as well as in scheduled mode. This can also lead to faster report execution since using formulas within the report can force record selection to be performed by Crystal instead of by the DBMS.

Argument for Using Saved Data

In cases where another process (for example, Visual CUT) generates the rpt file with saved data, you can launch a report and include a "**Use_Saved_Data**:True" command line argument to indicate the saved data should be used (instead of retrieving the data from the database).

Specifying Parameters When Using Saved Data

Some parameters don't participate in data selection. Such Non-Fetching parameters are typically used to control how the data is displayed on the report (for example, grouping, sorting, and section suppressions). DataLink Viewer allows you to specify values for such parameters when using saved data. For example:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v
"C:\temp\Report.rpt" "Use_Saved_Data:True" "Parm1:Detail"
```

Argument for Setting Formula Expressions

You can set formula expressions via a command line argument provided that:

- Any double-quotes are specified as [dblq]
- Only main report formulas are targeted

The command line argument starts with **Set_Formulas1:** followed by pairs of **Formula Names** and **Formula Expressions**. The name is separated from the expression by >>>. Each pair is separated from the following one by ||| like this:

```
…  "Set_Formulas1:Name1>>>Expression1|||Name2>>>Expression2"
```

For example, the following command line argument would set the first specified formula expression to the string "Ido" and the second formula to the numeric expression of 2 + 2:

```
…  "Set_Formulas1:{@MyName}>>>[dblq]Ido[dblq]|||{@TwoAndTwo}>>>2+2"
```

Argument to Set Extra Record Selection Logic

You can use the **Xtra_Record_Selection** command line argument to append an extra expression to the main report record selection formula via a command line argument. This provides flexibility in filtering the report beyond parameter logic. The change applies only to the process triggered by the command line.

If the report already has a record selection formula the logic becomes:
(old expression) AND **(extra expression)**.
Otherwise, the extra expression simply becomes the temporary record selection formula.

Here is an example:
…"**Xtra_Record_Selection**:{Product.Product Name} <> **[dblq]**Triumph Vertigo Helmet**[dblq]**"

Notes:

- any double-quotes in the expression must be specified as **[dblq]**

Command Line Arguments for Triggering/Scheduling Exporting

Using the "**Export**" command line argument you can trigger, or even schedule, exporting for a report so the user doesn't need to preview the report or see the DataLink Viewer user interface.

Interactive Use

If you want the user to be prompted for the export format and file name, the syntax is constructed as the word "**Export**", followed by a colon and the word "**Dialog**". For example:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -V
"C:\temp\Report.rpt" "user_id:dba" "password:sql" "Parm1:Gloves" "Export:Dialog"
```

Fully-Automated Exporting

If you want to export the report with no user interaction, you can specify **Default** in the command line argument to use the export format and file name last used for the report when a user clicked on the Export button from the GUI. For example:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -V
"C:\temp\Report.rpt" "user_id:dba" "password:sql" "Parm1:Gloves" "Export:Default"
```

Alternatively, you can specify the export file name and export format like this:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -V
"C:\temp\Report.rpt" "user_id:dba" "password:sql" "Parm1:Gloves"
"Export:c:\temp\Labels.pdf||PDF"
```

Note that the export file name and export formats are separated by `‘||’`

Valid export formats include: `XLS, XLSX, XLS Data Only, XLSX Data Only, PDF, CSV, HTML 32, HTML 40, TTX, DOC, DOC - Editable, RTF, TXT, XML, RPZ, RPTR, and RPT`

Notes:

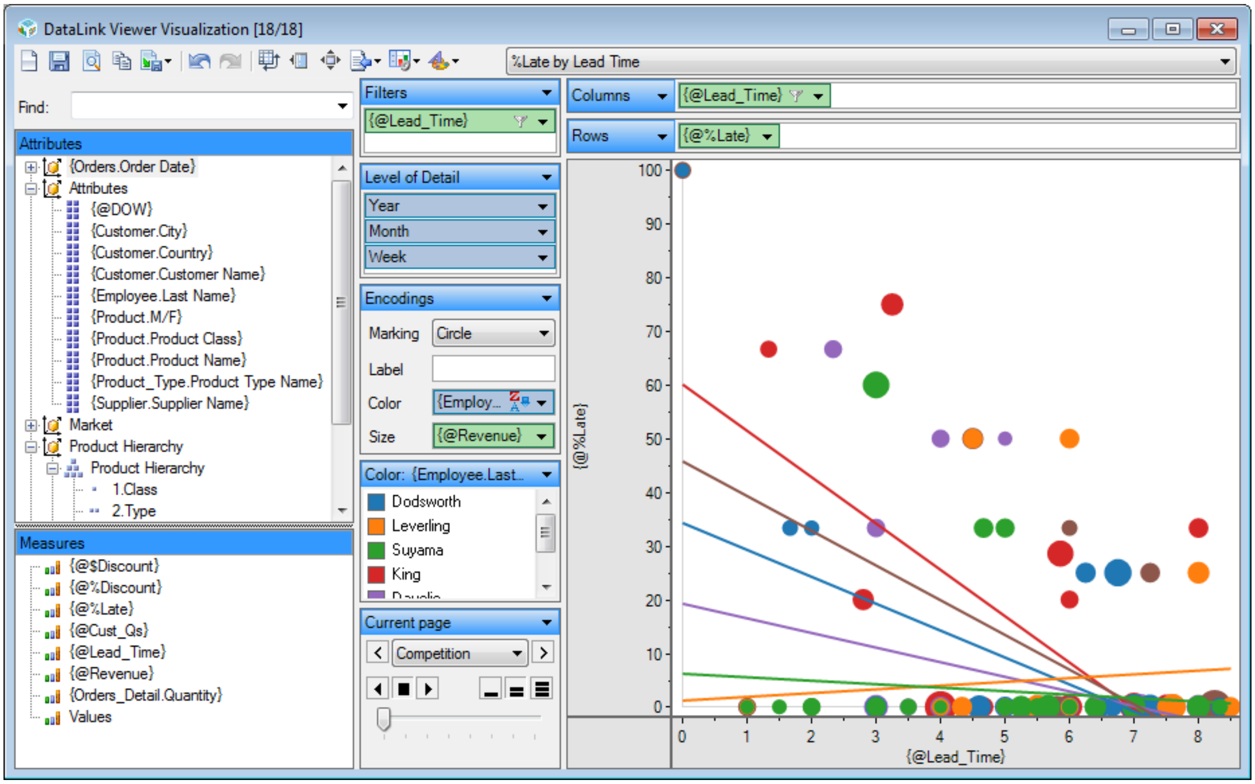
- RPT exports the report to a Crystal Report format with saved data.
  A user can then open that report without needing access to the database.
- TTX provides export to Tab Separated Values.

Scheduling Exporting

Since you can trigger exporting using the Export command line argument, you can use the Windows Task Scheduler (or any other scheduler/application) to trigger exporting of the report. For detailed instructions on how to use the free windows task scheduler, see the section on "Scheduling" in my **Visual CUT User Manual** (Visual CUT provides much more powerful report scheduling options) at:
www.milletsoftware.com/visualcutManual.htm

Fully-Automated Exporting of Data Visualizations

Imagine you need to schedule a data refresh and export of this data visualization created for a Crystal report inside the DataLink Viewer **data visualizer**:



%Late by Lead Time

Filters: {@Lead_Time}

Level of Detail: Year, Month, Week

Marking: Circle

Label:

Color: {Employ...

Size: {@Revenue}

Color: {Employee.Last...

- 🟦 Dodsworth
- 🟧 Leverling
- 🟩 Suyama
- 🟥 King
- 🟪 Davolio

Current page: Competition

Columns: {@Lead_Time}

Rows: {@%Late}

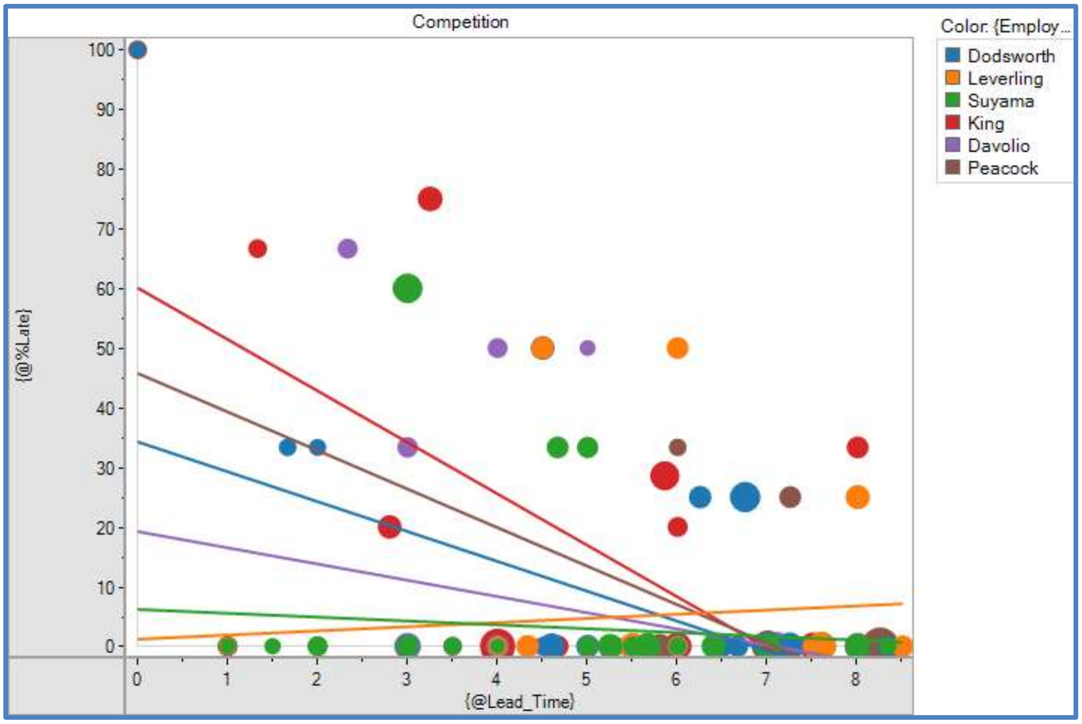
Or perhaps you wish to generate a CrossTab where columns are sorted or TopN-filtered by total values. That's easy to do in the DLV visualizer (and quite difficult in Crystal). Here's a link to an image showing what such a CrossTab looks like in the visualizer.

To an Image File

You can use a command line argument to specify the visualization layout name and export file:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -V
"C:\temp\Report.rpt" "Export_Viz:%Late by Lead Time||c:\temp\Viz7.png"
```

The resulting png file:



For image file export types, valid export file extensions are: **.png**, **.jpeg**, and **.bmp**

To Excel File

For a CrossTab display of the data in Excel (even if it's displayed as a chart rather than as a CrossTab in the visualization), **you may specify .xlsx as the export file type**. For example:

```
"C:\Program Files (x86)\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v
"C:\Documents\Crystal Reports\bdrep\DLV_2011_Visualization_Demo.rpt"
" Export_Viz:CrossTab_Rev_Emp_Product||c:\temp\CrossTab_Revenue.xlsx"
```

The resulting Excel file content (columns get auto-fitted) is shown in this image.
https://www.screencast.com/t/GjdkiYVPgIf

Follow-Up Processing in Visual CUT

Using Visual CUT, you can use a batch file to first export to an image file from DLV 2011 and then **embed the image inside an email message, report, or an auto-refreshing web dashboard**. Alternatively, you can attach the exported xlsx file to an email. Or embed the Excel tab in a bigger workbook.

Command Line Arguments for Triggering/Scheduling Printing

Using the "**Printer**" command line argument you can trigger printing for a given report in an unattended mode (the user doesn't need to preview the report or see the DataLink Viewer user interface).

The syntax is constructed as the word "**Printer**", followed by a colon and:

- the word "**Default**" if the report should be sent to the default printer, or
- the word "**Dialog**" if the user should be prompted to select a printer, or
- the **printer name**, if the report should be sent to a specific printer

Here’s how you would send a report to the **default printer**:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v
"C:\temp\Report.rpt" "user_id:dba" "password:sql" "Parm1:Gloves" "Printer:Default"
```

Here’s how you would send a report to a **printer selected by the user**:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v
"C:\temp\Report.rpt" "user_id:dba" "password:sql" "Parm1:Gloves" "Printer:Dialog"
```

Here’s how you would send a report to a **specified printer**:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v
"C:\temp\Report.rpt" "user_id:dba" "password:sql" "Parm1:Gloves" "Printer:\\Srv1\Laser1"
```

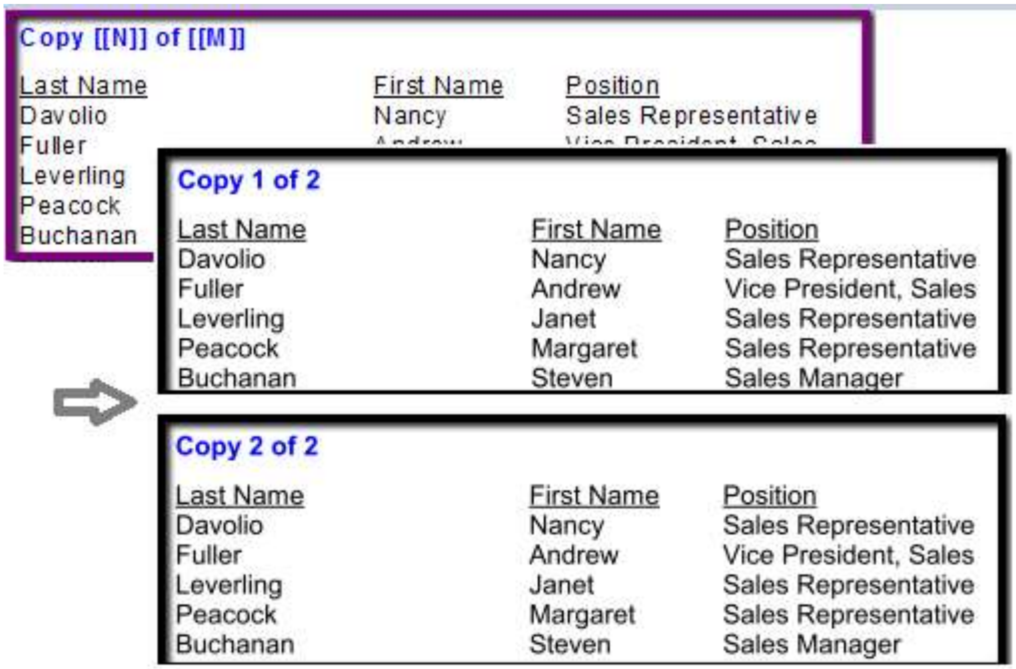
Specifying Number of Copies

To control the number of printed copies, you can use a "**Print_Copies**" argument. The syntax is constructed as the word "**Print_Copies**", followed by a colon and the number of desired copies. For example:

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v
"C:\temp\Report.rpt" "Printer:\\Srv1\Laser1" "Print_Copies:3"
```

Setting Custom Text for Each Print Copy

In cases where **Print_Copies** is specified, each print copy can have custom text (such as 'Copy 1 of 2', 'Copy 2 of 2'). Simply place a Crystal formula called **{@Print_Copy_Template}** on the report canvas. For each printed copy, DataLink Viewer first updates the text in that formula by replacing **[[N]]** with the copy number, and **[[M]]** with the total number of copies:



Copy [[N]] of [[M]]

Last Name	First Name	Position
Davolio	Nancy	Sales Representative
Fuller	Andrew	Vice President, Sales
Leverling		
Peacock		
Buchanan		

Copy 1 of 2

Last Name	First Name	Position
Davolio	Nancy	Sales Representative
Fuller	Andrew	Vice President, Sales
Leverling	Janet	Sales Representative
Peacock	Margaret	Sales Representative
Buchanan	Steven	Sales Manager

Copy 2 of 2

Last Name	First Name	Position
Davolio	Nancy	Sales Representative
Fuller	Andrew	Vice President, Sales
Leverling	Janet	Sales Representative
Peacock	Margaret	Sales Representative
Buchanan	Steven	Sales Manager

SCHEDULING PRINTING

Since you can trigger printing using the Printer command line argument, you can use the Windows Task Scheduler (or any other scheduler/application) to trigger printing of the report. For detailed instructions on how to use the free windows task scheduler, see the section on "Scheduling" in my **Visual CUT User Manual** (Visual CUT provides much more powerful report scheduling options) at:
www.milletsoftware.com/visualcutManual.htm

SCHEDULING PRINTING FOR MULTIPLE REPORTS

If you need to schedule printing of multiple reports at the same time, the best approach is to place all command lines into a single batch file. Then, schedule the batch file in the free Windows Task Scheduler as described above.

Argument for Printer Setup

The **Printer_Setup** command line argument allows you control:

1. The ***Printer Name*** (Note: only if the 'No Printer' option is tuned off for the report)
2. The ***Dissociate Formatting Page Size and Printer Page Size*** property

This argument is designed to address use scenarios where, during automated export, the page size and margins for a specified printer should be used.

The syntax is constructed as the word "**Printer_Setup**", followed by a colon and the following "||" separated elements:

- Printer Name , "Default", or leave blank if you don't want to change the printer name)
- ***True*** or ***False*** if you want to control the ***Dissociate Formatting Page Size and Printer Page Size*** property. You may skip that property if you only need to control the Printer Name.

Here are some examples:

… **"Printer_Setup:MyPrinterName"**

Or

… **"Printer_Setup:MyPrinterName||True"**

Or

… **"Printer_Setup:||True"**

Argument for Documenting File Locations and Report Parameters

The **Document2INI** command line argument allows other applications to request information from DataLink Viewer about:

- key file locations (DataLink_Viewer.ini, ReportList.txt)
- design of parameters for a given report

The command line call looks like this (all in 1 line):
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe"
"**Document2ini**:c:\My_Reports\my_Report.rpt>>c:\temp\MyFile.ini"

The two elements after the Document2ini argument name and the colon are:

1. the rpt file containing the parameters to document. If the rpt file doesn't exist, only the key file locations get updated in the ini file.
2. The ini file that should be created/updated with the documentation

If the specified rpt file doesn't exist, only file locations are set in the ini file. For example:

```
[File_Locations]
Master_Ini_File=C:\ProgramData\MilletSoftware\DLV_2011\DataLink_Viewer.ini Slave_Ini_File=
C:\ProgramData\MilletSoftware\DLV_2011\DataLink_Viewer.ini
Report_List= C:\ProgramData\MilletSoftware\DLV_2011\ReportList.txt
```

If the specified report does exist, information about report parameter gets added to the ini file, providing summary info as well as dedicated section for each parameter based on its position in the report:

```
[Parameters]
c:\temp\test.rpt=1||{?City}||String||False||False-----2||{?Country}||String||False||False

[1]
Name={?City}
InUse=True
Type=String
PromptText=Enter City:
SingleValue=False
RangeValue=False
AllowEditing=False
Optional=False

[2]
Name={?Country}
InUse=True
Type=String
PromptText=Enter Country:
SingleValue=False
RangeValue=False
AllowEditing=False
Optional=False
```

Launch a Report while Viewing another Report

See video demo [▶]   DataLink Viewer allows you to view a report and launch another report by:
single-clicking a report object with a tooltip expression returning a string as per the instructions below
OR
double-clicking a report formula returning a string as per the instructions below.

The string should have the following components:
1) **DLV_Run:-v** (launch specified report in a **new Preview Only window**) or
DLV_Run:-s (launch specified report in a **new DataLink Viewer window)** or
DLV_Run_Here:-s (launch the second report **within the current Preview Tab**)
2) the **report path and file name**
3) **Optional command line arguments** (parameter values, login information, etc.) as discussed in the "Launch Reports from Command Lines" section of this user manual.

Notes:

- The **User ID & Password values from the current report are automatically passed to the new report**. Specify these arguments only if you need to override these values.

- **-v** should be the **preferred option** because it removes the Select Report tab from the new window.

Here are some examples of such String formulas:

// **invoke a second report** and load it into the **Current Preview Tab**
'DLV_Run_Here:-s "c:\directory\subdirectory\Report.rpt"'

// launch into a Preview Only (**-v**) window and specify some **parameter values**:
**'DLV_Run:-v ""c:\CR\My_Report.rpt"" ""Parm1:" + {Cust.CUST_N} +
""" ""Parm2:" + {Prod.PROD_Code} +""""**

// full DLV window (**-s**) and specify both **login as well as Parameter information**:
'DLV_Run:-s "Some_Report.rpt" "user_id:dba" "password:sql" "Parm1:1997"'

Note:

- The **single-click** option with a tooltip directive was added in 2023 as a better alternative.
  You should prefer that approach over the double-click option.

- With the double-click option, to hide the formula you can use font colors, not the Suppress attribute.

- When you need to embed double quotes into the result of a string formula, you must "escape" the double quotes with another double quote. Here are some variations on that theme:
  …+ """" + add.   """"…" start with.   "…"""" end with. "…"""…" include.

  Or use Chr(34) to avoid the need to escape the " character:

```
  "DLV_Run:-v " + Chr(34) + "Report2.rpt" + Chr(34) + " " +
                  Chr(34) + "Parm1:" + {Emp.ID} + Chr(34)
```

Current Report Path Token

If you wish to launch another report in the **same folder as the current report file** without knowing the absolute path to these reports, either **specify just the report name** (without a path) or you may use a #{DLV_RPT_PATH}# token and DataLink Viewer will replace it with the path for the currently viewed report. For example:

```
"DLV_Run:-v " + Chr(34) + "#{DLV_RPT_PATH}#" +
  "\Product Type Catalog V12.rpt" + Chr(34) + " " +
  Chr(34) + "Parm1:" + {Product_Type.Product Type Name} + Chr(34)
```

Create a User Interface for Selecting and Launching Reports

The ability described above (launching one report from another) allows you to very easily create a user interface that lets your users select and launch reports. The key steps are:

1. Create a REPORT Table with one record for each report. Typical columns would include: a) the path and report file name, b) a description of the report, c) report subject (Profit, Product Returns, Orders), d) report frequency (Daily, Weekly, Monthly), etc.

2. Create a "Report Selection" report listing these available reports with a formula in the detail section for launching the selected report. Note: you can design the main report with Parameters for listing only reports of certain subjects or certain frequencies. Of course, the REPORT table must store these classifications.

Let the user run the Report Selection report and launch the selected report by double-clicking it.

Embed Input from The User in the Command Line Call for Another Report

When launching another report by double-clicking a report section (as described above) you may wish to prompt the user for some input and embed that input into the command line. One scenario is a case where you wish to prompt the user to provide the value for a parameter. Another scenario may be a case where you wish to print labels for the product you are double-clicking but you want the user to be prompted for the number of copies to print.

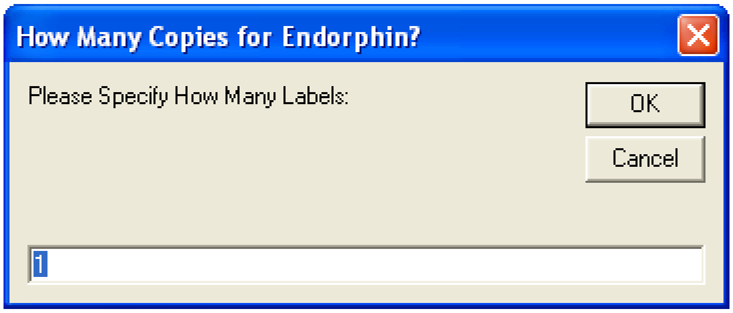
You can achieve this functionality by embedding within the command line a call to an InputBox function. DataLink Viewer would then replace the InputBox Call with the input from the user.

For example, the following formula would prompt the user for number of copies and then print the Product.rpt report for the double-clicked Product Name to the default printer with the number of copies specified by the user:

```
"DLV_Run:-v ""C:\temp\Product.rpt"" ""Parm1:" +
{Product.Product Name} + """" +
" ""Printer:Default""" +
" ""Print_Copies:#{InputBox||Please Specify How Many Labels:" & "||" & "How Many
Copies for " & {Product.Product Name} & "?" &
"||" & "1}#"""
```

The bold text is the InputBox call. This call must be enclosed by **#{… }#** and has 4 parts separated by "||":

1. **InputBox** (a keyword indicating this is a request for an InputBox dialog
2. The **Prompt** (the text shown within the InputBox dialog. If you need to specify line breaks within the prompt text, be sure to use **"vbCrLf"** (case sensitive), rather than Chr(10).
3. The **Title** (the text shown as the title of the InputBox dialog.
4. The **Default** value (**1** in the example above).


How Many Copies for Endorphin?

Please Specify How Many Labels:

1

Notes:

1. With double-click formula approach, the formula **must be displayed on a single line**, so **use small font** (that requirement does not apply to the preferred single-click object with tooltip approach)
2. to hide the formula you should use font colors, not the Suppress attribute

Launch another Application and Pass Parameters to It

DataLink Viewer lets you launch any other application and pass parameters to it by:
single-clicking a report object with a tooltip expression returning a string as per the instructions below
OR
double-clicking a report formula returning a string as per the instructions below.

The string should have the following structure:

'EXE_Run:Any_Program.exe:command line arguments'

Note:

- The **single-click** option with a tooltip directive was added in 2023 as a better alternative.
  You should prefer that approach over the double-click option.

- With the double-click option, to hide the formula you should use font colors, not the Suppress attribute.

- When you need to embed double quotes into the result of a string formula, you must "escape" the double quotes with another double quote. Here are some variations on that theme:

…+ """" +	add a double quote.
"""…"	start the resulting string with a double quote
"…"""	end the resulting string with a double quote
"…""…"	insert a double quote into the middle of the resulting string

Launch an Application Before Report Runs

When loading a report, before data is retrieved, if a formula called **Call_EXE_Before_Load** is detected, DataLink Viewer assumes the text in that formula specified the path and name of an executable to launch. Data Retrieval into the report is delayed until the executable process is completed. The status bar notifies the user that a pre-load process is in progress.

The path to the executable can use environment variables. For example, if the **Call_EXE_Before_Load** formula contains the following: **`"%windir%\system32\notepad.exe"`**
DataLink Viewer would launch NotePad and wait until the NotePad window is closed before actually running the report.

The executable file may be any file that can launch a process, including exe (.exe) file, batch file (.cmd, .bat), and shortcuts (.lnk). For example:

```
"C:\Users\ixm7\Desktop\Notepad Shortcut.lnk"
```

Optional Arguments and Working Directory Elements

The formula text may include 2 additional elements to specify ***Arguments*** and/or a ***Working Directory*** for the process. To specify only Arguments, use a structure like this example:

```
"%windir%\system32\notepad.exe||c:\temp\MyFile.txt"
```

To specify only Working Directory, use a structure like this example:

```
"%windir%\system32\notepad.exe||||c:\temp"
```

To specify both Arguments and Working Directory, use a structure like this example:

```
"%windir%\system32\notepad.exe||c:\temp\MyFile.txt||c:\temp"
```

can include includes '||' the text before that delimiter is treated as the executable file to launch, and the text after the '||" is used to set the **Working Directory** for the process. For example:

```
"%windir%\system32\notepad.exe||c:\temp"
```

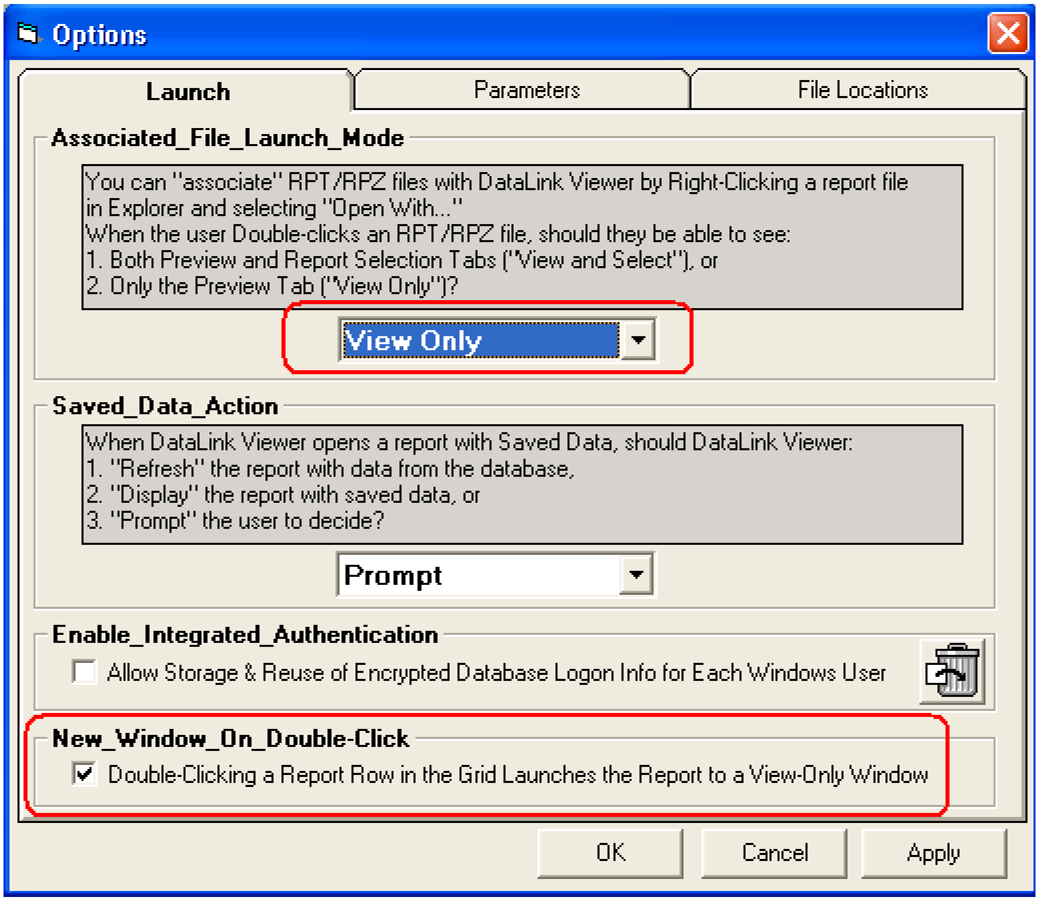
Launching Reports in a New Window

By default, the initial DataLink Viewer (DLV) window displays two tabs: ‘Select Reports’ and ‘Preview.’ You select a report from the first tab, and view it in the second tab. However, in many cases you may wish to **launch a report from the initial window into a new preview only window**. You may also wish to **remove the Preview tab from the initial window**. This section describes the various options for achieving this:

As described in the sections dealing with the command line api of DLV, you can launch reports in a Preview Only window by using –v instead of –s within the command line. However, this section deals with user interaction options for achieving the same thing. There are several ways to achieve this.

New Window On File Launch and/or On Double Click

The Launch tab in the DLV Options dialog allows you to direct DLV to launch reports into a View Only window when double-clicking an rpt file in File Explorer or when double-clicking a report row in the Select Report tab:



Associated_File_Launch_Mode

You can "associate" RPT/RPZ files with DataLink Viewer by Right-Clicking a report file in Explorer and selecting "Open With..."
When the user Double-clicks an RPT/RPZ file, should they be able to see:
1. Both Preview and Report Selection Tabs ("View and Select"), or
2. Only the Preview Tab ("View Only")?

View Only

Saved_Data_Action

When DataLink Viewer opens a report with Saved Data, should DataLink Viewer:
1. "Refresh" the report with data from the database,
2. "Display" the report with saved data, or
3. "Prompt" the user to decide?

Prompt

Enable_Integrated_Authentication

☐ Allow Storage & Reuse of Encrypted Database Logon Info for Each Windows User

New_Window_On_Double-Click

☑ Double-Clicking a Report Row in the Grid Launches the Report to a View-Only Window

Right-Click the Grid and Select Preview Report (new Window)

When you righ-click a report row in the Select Report tab, a popup menu provides you an option of **Preview Report (new window)**. If you click on that option, the report would launch in a new window.

Remove the Preview Tab from the Initial Window

If you wish to always use the initial DLV window to launch reports into new preview only windows, you may want to completely remove the Preview tab from the initial DLV window. You can achieve that by setting the following options in the **DataLink_Viewer.ini** file:

```
[Options]
Show_Preview_Tab=FALSE
```

Note: **this option takes effect only if you also use the Options dialog to turn on the option for Double-Clicking a Report Row in the Grid Launches the Report to a View Only Window**.

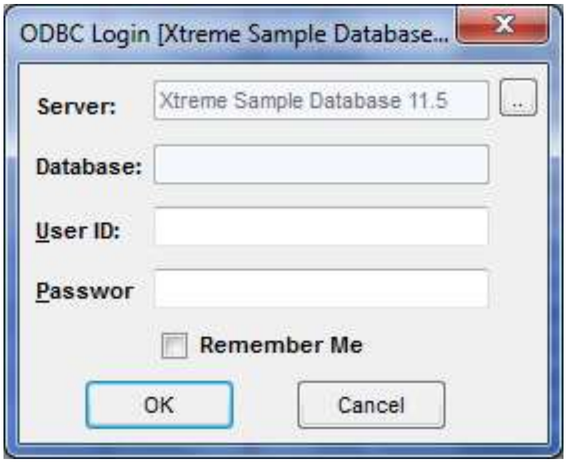
When these two options are set, DLV changes several things:

1. The initial DLV window shows only a Select Report tab
2. The right-click menu option of **Preview Report** is not shown. Instead, only the **Preview Report (new window)** option is visible.
3. The right-click menu option of **Preview Report (force login)** launches the report to a new window instead of to the Preview tab (which is not available).

The end result is that the initial DLV window becomes just a launch pad to report previews.

Database Choice Functionality

DataLink Viewer provides login dialogs to support any number of secure data sources in the main report as well as the subreports. Here is what the login dialog looks like:



Server: Xtreme Sample Database 11.5

Changing Data Source (Server/Database)

… "DataSource:Server>>Database>>IntegratedSecurity>>Options"

The parameters (after the ":") are separated by a ">>" and are as follows:
1. **Server** is the Server Name or IP address the report should connect to. **Leave it blank for no change**.
2. **Database** is the target Database Name within the given server. **Leave it blank for no change**.
3. **IntegratedSecurity** : **True** or **False**. If False, **Leave it blank**.
4. **Options** : not yet in use. **Leave it blank**.

Notes:
If IntegratedSecurity is set to False, remember to include "**User_ID:**…" and "**Password:**…" arguments in the command line if your wish to avoid a login dialog.

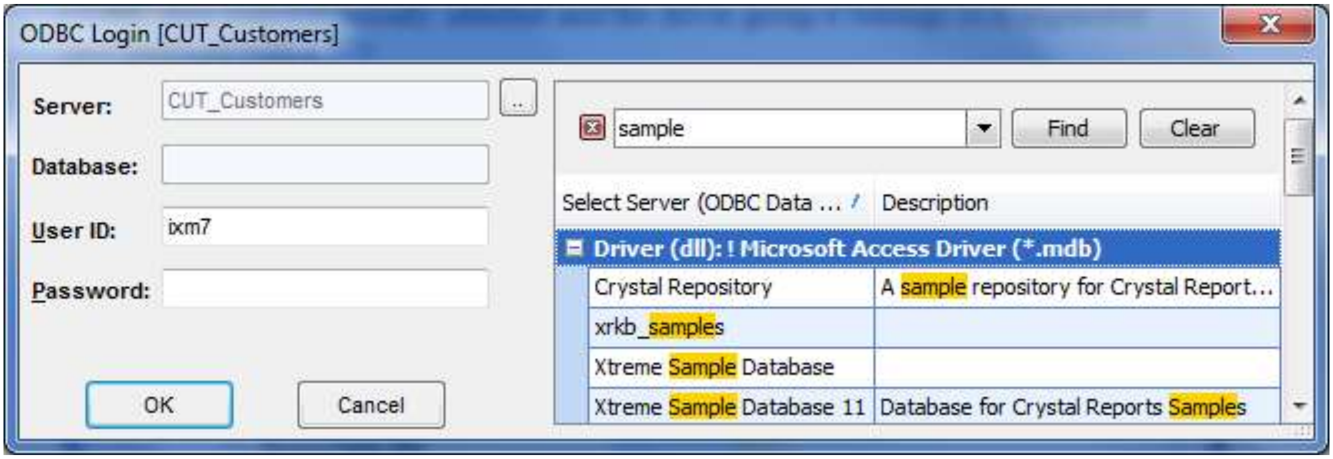
Examples:

This changes only the target **Server** because the **Database** element is left blank.
"DataSource:sqlServer1>>>>True>>"

This changes only the target **Database** because the **Server** element is left blank.
"DataSource:>>CompanyA>>False>>" "User_ID:AliBaba" "Password:sesame"

Select Alternative ODBC Data Sources for the Same Report

When running reports that use ODBC data sources, you can **select which ODBC data source should be used**. Clicking a button to the right of the Server name, expands the display to include a listing of all available ODBC data sources (grouped by ODBC driver type). The original ODBC data source is initially selected and the driver group it belongs to is expanded
(and prefixed with a "!"):



Server: CUT_Customers
Database:
User ID: ixm7
Password:

sample

Select Server (ODBC Data ...	Description
Driver (dll): ! Microsoft Access Driver (*.mdb)	
Crystal Repository	A sample repository for Crystal Report...
xrkb_samples	
Xtreme Sample Database	
Xtreme Sample Database 11	Database for Crystal Reports Samples

To force the list of ODBC DSNs to display by default, set the following option in the DataLink_Viewer.ini:

```
---------------------------
[Options]
Display_DSN_List_in_ODBC_Login=True
```

Restricting ODBC DSN Choices (DSN Groups)

The default ODBC DSN used by a report may belong to what you may consider to be a group of alternative ODBC DSNs. You may wish to restrict the list of ODBC DSNs options shown for such a report to only those that belong to that group. This can be accomplished by specifying an **ODBC_Groups** entry under a **[Login_Window]** section in the **DataLink_Viewer.ini** file.   Here is an example of such an entry:

```
[Login_Window]
ODBC_Groups={||Xtreme 9||Xtreme 11||} {||Northwind_2||NorthWind_6||Xtreme 9||}
```

Each ODBC Group is enclosed in { } brackets. A single space separates the groups.
Each ODBC DSN is enclosed in a || delimiter (including at the start and end of the group.

A report that by default uses an ODBC DSN that is NOT in any of the specified groups will experience no restrictions in the choice of alternative ODBC DSNs. A report that uses an ODBC DSN that is in only one of the specified groups will be restricted to a choice among the DSNs of that group. A report that uses an ODBC DSN that is in several groups will be restricted to the combined list of DSNs from all matching groups.

DSN Groups with Wildcards

If an element in a DSN Group uses a wildcard expression, all DSNs that match that expression would be included. For example, the following ini enry:

```
ODBC_Groups={||Xtreme Sample Database 2008||Xtreme*||}
```

would cause a report that uses the DSN of *Xtreme Sample Database 2008* to also display all DSNs that start with "Xtreme…" as alternative DSN targets.

Forcing Login

To delay automatic connection and give the user a choice of data sources, you can force a login dialog with a list of ODBC DSNs to select from. There are several ways to force such dialogs:

for DSN Group Members

In the scenario above, where a DSN can be a member of an ODBC "Group" you probably want to force a login dialog with a restricted DSN list to be displayed so the user can select the desired DSN. This is true even if the report can connect to the data source without login information. To achieve this behavior, the following entry in the DataLink_Viewer.ini (Options section) is set to TRUE be default:
Always_Force_Login_If_In_DSN_Group=**TRUE**

In the case above, if the report requires no User ID & Password to login, you can ensure a simplified DSN choice dialog is used by adding the following entry to the same section:
Simple_Choice_If_In_DSN_Group=True

For All Reports

In a similar manner, if you wish to force a DSN choice dialog for all reports, regardless of membership in ODBC groups, you can set the following entry to True:
Always_Force_Login=**TRUE**

For Specified DSNs

If you wish to force a DSN choice dialog only for reports that use certain ODBC DSNs, set the following entry in the ini file under [Options]:
ODBC_DSN_Force_Login=||Northwind||Sage||MB7||

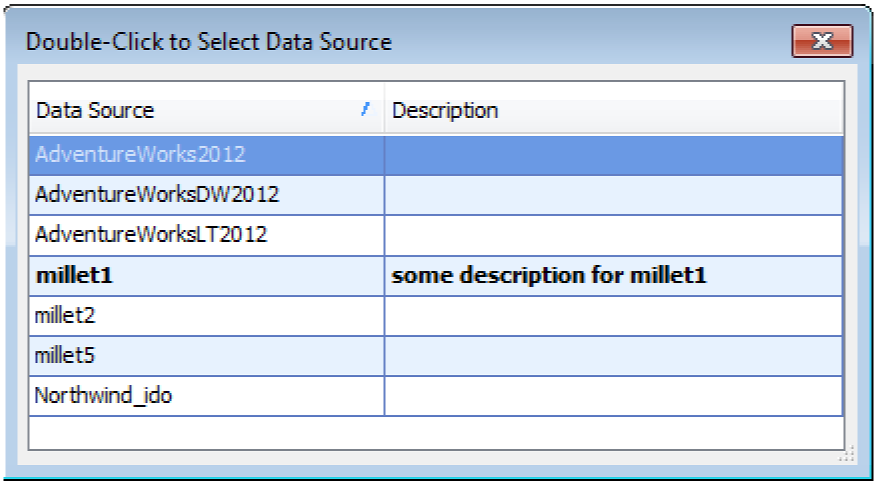
In the example above, reports that use one of the specified DSNs would trigger a DSN choice in a login dialog.

Restricting ODBC DSN Choices (Databases within Server)

In some cases, users need to select a Database target for a report as one of the databases under a single server. For example, Sage 100 (Master Builder) users manage multiple companies as separate databases under a single MS SQL Server instance. To address such use scenario, add a section to the **DataLink_Viewer.ini** file:

```
[ODBC_DSN_Force_Database_Choice]
millet1 =Auto_Generate_DSNs
MB Data=RightClick_Generate_DSNs
```

In the example above, the Auto_Generate_DSNs means that when running a report that uses the **millet1** ODBC DSN, DataLink Viewer will automatically generate an ODBC DSN for each database (in the same server) that doesn't yet have an ODBC DSN. It then displays a restricted list of only DSNs for databases within the same server:



Data Source	Description
AdventureWorks2012	
AdventureWorksDW2012	
AdventureWorksLT2012	
millet1	**some description for millet1**
millet2	
millet5	
Northwind_ido	

As demonstrated by the image above, if the original ODBC DSN uses NT Authentication (no user id & password), the options are displayed in a simplified list without a User ID & Password options. The user can select a database target by double-clicking the desired row.
Getting the simplified dialog above also requires that in the DataLink_Viewer.ini:
a) Always_Force_Login=FALSE (in the [Options] section)
b) Always_Force_Login_If_In_DSN_Group=True (in the [Options] section)
c) Report's DSN is a member of ODBC_Group (in the [Login_Window] section)

If RightClick_Generate_DSNs is specified, the user can request generation of missing ODBC DSNs using a right-click menu option from the grid of alternative ODBC DSNs.

FACILITATING DEPLOYMENT

If the report uses a DSN called **DLV_AutoGen_DSN** there is **no need to set ini entries**.
Such a report would automatically trigger generation of DSNs. And **DLV_AutoGen_DSN** will not show up in the list of DSN choices. You just need to create that DSN on the user machine and point it at the right server, and a non-user database (e.g. SQL Server's "master" database). Since generating DSNs requires MODIFY permissions on the Registry, you may need to (temporarily) set the DLV exe file to **Run As Administrator**.

Dynamic parameter reports that use **DLV_AutoGen_DSN** as their DSN also "follow" the DSN selected for the main report even if the ini file option of Set_Parameter_Rpt_to_Main_Rpt_DSN is set to False.

Specify the ODBC DSN

In some cases, you may want to use the same report to connect to different data sources, such as a **testing** or **production** server. While each report stores connection properties for only one default ODBC Data Source Name (DSN), DataLink Viewer allows you to use **command line arguments** or the **DataLink_Viewer.ini** to specify a different ODBC DSN.

The command line argument structure is as follows:

… "ODBC_DSN:Data Source Name"
or
… "ODBC_DSN_From_To:Old_DSN1>>New_DSN1||Old_DSN2>>New_DSN2"

The **ODBC_DSN** argument overrides all ODBC DSNs used in the report by the new DSN
The **ODBC_DSN_From_To** argument overrides only for tables that use the old DSN.

Note: **ODBC_DSN_From_To** support **multiple pairs** separated by "||" as shown in the example above. This addresses scenarios where a report uses multiple ODBC DSNs (e.g. when subreports use different DSNs).

Also, you may specify **ODBC_DSN_From_To** as a global entry in the **[Options]** section of **DataLink_Viewer.ini**.

Overriding the Database Specified in the Report or ODBC DSN

For ODBC data sources, you can enter a database name into the login dialog if you wish to override the database specified in the ODBC data source or in the report itself. This is useful for situations where the same database (e.g., MS SQL Server) contains multiple databases each with the same table structure. If the number of such databases is large, creating a dedicated ODBC DSN for each and using the select ODBC DSN functionality may be too tedious. Instead, you can directly type in the database name in the login dialog.

To enable database name input into the database field in the login dialog, you need to set the **Override_ODBC_DSN_Database** entry under the [Options] section in the DataLink_Viewer.ini file to TRUE, like this:

```
[Options]
Override_ODBC_DSN_Database=TRUE
```

Note that if that option is set to TRUE, the database specified in the ODBC DSN can no longer override the database specified in the report (if the user doesn't type in a Database, the specified Database remains the one used in the report.

Note: This functionality is not available in the Crystal 8.5 version of DataLink Viewer.

Overriding the Table Location (ODBC)

This functionality was added for a developer who needed to call DataLink Viewer from his application via a command line. The data source was Pervasive via ODBC and a command line argument was needed to control what year archive is used for the report. The database contained a table for 2010 (**GL-10JRL**) as well as a similar table for 2011 (**GL-11JRL**).
The report was already designed to reference the **GL-10JRL** table using a generic alias of **GL_JRNL**.

The command line argument to allow overriding the table used for the report looks like this:

```
… "Table_From_To:GL-10JRL>>GL-11JRL||AR-10JRL>>AR-11JRL"
```

Within each pair of From/To directives, the 'From' location is separated by a '>>' from the 'To' location. The pairs are separated by a "||" from each other.

Notes:

1. If any of the ***From*** tables is not found in the report, the report loading stops with a message indicating which From tables were unmatched with report tables.
2. This functionality is available only in DataLink Viewer 2008 and 2011.

Overriding the XML File Location

This functionality was added for a customer who needed to call DataLink Viewer from his application via a command line. The data source for the report was an XML file (ADO.NET XML connection), but on each call to DataLink Viewer, instead of using the original XML file as a data source, a different XML file (name and location) may be used.

The command line argument to allow overriding the XML file path looks like this:

```
… "XML_Path_From_To:C:\custprog\PICKLIST.xml>>C:\temp\B139.xml"
```

If you need more than one pair of **From**/**To** directives, separate them with a '||' delimiter. Within each pair of **From**/**To** directives, the 'From' location is separated by a '>>' from the 'To' location.

Notes:

1. If any of the **From** paths is not found in the report, the report loading stops with a message indicating which From paths were unmatched.
2. This functionality is available only in DataLink 2011.

Stripping Table Qualifiers when Connecting to a Different Database

The SQL statement generated by Crystal frequently contains not only table names, but also the database name used at the time the report was designed (Database.Table or Database.Owner.Table). Such table qualifiers can frustrate attempts to run the report against a different database.

DataLink Viewer supports selection of a new ODBC data source even when the database name is different from that used in the original ODBC DSN. To ensure this works even when the table names in your report are fully qualified, set the following line under the **[Options]** section in **DataLink_Viewer.ini** to True:

```
Strip_Table_Qualifiers=True
```

Overriding the Server in Native Oracle Connection

When a report uses a **native connection** to Oracle, you can **edit the Server name** in the login dialog and run the report against a different server (rather than the one the report was designed against).

Alternatively, if you are launching a report from a command line, you can override the Oracle server name by using the "Oracle_Server:" command line argument. For example:

"C:\Program Files\Millet Software\DataLink Viewer 2011**DataLink_Viewer_2011.exe**" **-v** "C:\temp\test.rpt" **"user_id:dba" "password:sql" "Oracle_Server:Server2"**

Note: This functionality is not available in the Crystal 8.5 version of DataLink Viewer.

Selecting an Alternative SQL Server – OLE DB Data Source

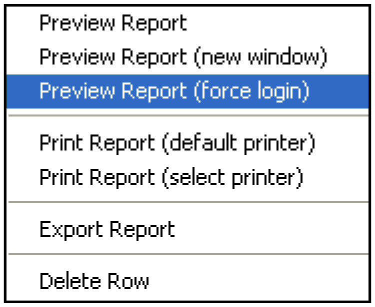
… "Connect_To_SQLOLEDB:DataSource>>InitialCatalog>>Integrated_Auth"

The parameters (after the ":") are separated by a ">>" and are as follows:
1. **DataSource** is the **Server Name** the report should connect to.
2. **InitialCatalog** is the **Database Name** within the given server.
3. **Integrated_Auth** is a **True** or **False** argument indicating if Microsoft SQL Server Integrated Authentication should be used (if TRUE, user_id & password are ignored).

Note: This method overrides the connection method of the report. For example, it can change the connection method from ODBC to OLE DB.

Forced Login

Right-clicking the report list provides a **Preview Report (force login)** popup menu option for forcing a login window before previewing the report:


Preview Report
Preview Report (new window)
Preview Report (force login)
Print Report (default printer)
Print Report (select printer)
Export Report
Delete Row

This is useful when:

- a previous report connected to one ODBC data source and you wish to run the same (or another) report against another ODBC data source.
- you wish to login to the same data source under a different user id, without restarting DataLink Viewer.
- You wish to avoid the default login information provided by Integrated Authentication (without bothering to go into the Options dialog and turning Integrated Authentication off)

Note: for some ODBC data sources (Crystal Commands), there are some scenarios where the only way to avoid connecting to a previously opened connection is to close and reopen DataLink Viewer.
When refreshing or reloading (U-turn button) a report, you can ensure connectivity is reset by turning on the options shown in this image.

Selecting Folder Location for FoxPro DBF Files (MasterBuilder)

DataLink Viewer 2011 supports dynamic selection of data folders for reports using the Visual FoxPro ODBC driver for a File DSN (using "Free Tables", which are dbf files under a given folder). IMPORTANT NOTES:

1. The File DSN must be present (and user should have modify permissions) at:
   C:\Program Files\Common Files\ODBC\Data Sources
   or, on a 64-bit machine, **C:\Program Files (x86)\Common Files\ODBC\Data Sources**
   (but not in both locations)
2. The folder choice actually changes the File DSN, so you may wish to create a dedicated File DSN just for your Crystal Reports.

This functionality was originally developed to support ***Intuit Master Builder*** company reports where each company's data is located in a different folder on the same PC.

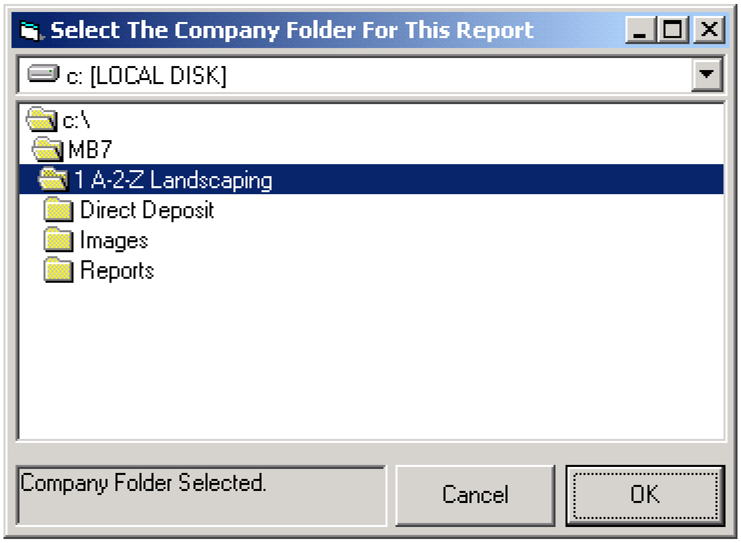
Two sections in the DataLink_Viewer.ini file control this functionality:

```
-------------------------------------------------------------------
[Folder_Selection_DSNs]
Visual_FoxPro_DBF=||MB7 Data.dsn||MB Data.dsn||

[MB7 Data.dsn]
Folder_Selection_Must_Contain=company.dbf
Enable_Folder_Selection=TRUE
-------------------------------------------------------------------
```

The 1st section specifies which File DSNs call for this new functionality. The File DSNs are specified exactly as they are named in the report itself. They must be enclosed in "||" as delimiters (even for the first, last, or only entry)

The 2nd section specifies, in the case of Master Builder data, that users should be allowed to select only folders that contain a **company.dbf** file. That section also allows users to Enable or Disable dynamic folder selection.



Company Folder Selected.

Changing Folder Location for Access/Excel/Pervasive/Paradox/ACT! Files

If your report uses the native connection to MS Access or Excel files, or if you are connecting to Act! (via **pad** files) or Pervasive (**ddf**) files, you can control the location of the database files using the following section in DataLink_Viewer.ini

```
---------------------------------------------------------------------
[Database_Path_Selection]
Paths = C:\Old\xtreme.mdb>>C:\New\xtreme.mdb||C:\a\test.mdb>>?
// for Pervasive ddf files: Paths = E:\Jobtrack\FILE.DDF>>?
// for ACT! .pad files: Paths = E:\DB1\DB1.pad>>E:\DB2\DB2.pad
// for Paradox specify only path to DB files: Path = C:\Old\>>c:\New\
---------------------------------------------------------------------
```

Note: you can also use a **"Database_Path_Selection:… " command line argument.**

As demonstrated above, the Paths entry may contain multiple pairs of old>>new paths.
Each pair specifies the **old path** followed by a "**>>**" separator, followed by the new path.
The pairs are separated by "||"

If the new path is blank, or if it contains just a question mark, DataLink Viewer will prompt the user to select a new path when a report using the old path is first used.

If the new path has one question mark (**?**) followed by a valid path, that path will be the default location in the dialog asking the user to select a path.

If instead of a single question mark, the new path starts with a double question mark (**??**), DataLink Viewer will always prompt the user to select a path each time a report using the old path runs. The user choice will be added after the **??** and will become the new default value in the path selection dialog.

If the report uses a database file that can't be found on the machine, DataLink Viewer prompts the user to select a valid location, creates the **[Database_Path_Selection]** section (if it doesn't already exist) and creates/adds the pair information to the **Paths** entry.

These options are designed to address typical deployment scenarios when a report developer sells reports to users who may have their data source location at a different folder than the one used when the reports were developed.

Using Command Line Argument to Avoid Path Prompt

By default, pairs with two question marks before the new default path (old_path>>**??**new_path) cause a prompt each time the old path is encountered in a report. You may wish to avoid such repeated prompts when launching one report from within another report or when scheduling printing. The following command line argument will cause DataLink Viewer to ignore the two question marks and simply use the new_path.

… "DB_Path_Use_Default:TRUE"

Changing Data Source in UDL Files

Crystal reports can use text files with .udl (Universal Data Link) extension as the source for OLE DB connection information. If you need to override the "Data Source" property stored in the UDL file, you can use the following section in DataLink_Viewer.ini

```
-------------------------------------------------------------------
[UDL_Data_Source]
Targets = CAMBISLLC||YOATCO||NESTOR
-------------------------------------------------------------------
```

If the report uses a UDL for a data source with a name matching one of the ||-delimited targets, the user would be prompted to enter a new Data Source name.

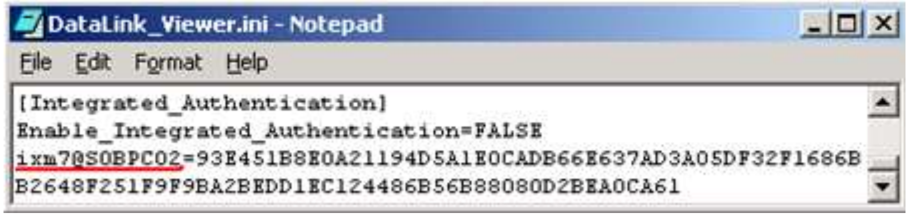
If you want any UDL source to be targeted for a data source change, set the Targets entry to ALL like this:

```
-------------------------------------------------------------------
[UDL_Data_Source]
Targets = ALL
-------------------------------------------------------------------
```

Integrated Authentication

Integrated Authentication ("Remember Me")

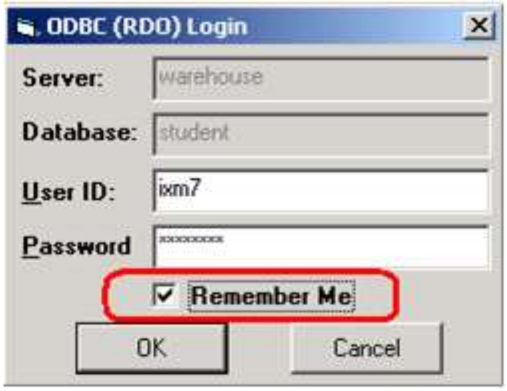
DataLink Viewer allows users to **avoid repeated login prompts to databases**. The database login information is stored, highly encrypted, inside **DataLink_Viewer.ini** as shown below:



```
[Integrated_Authentication]
Enable_Integrated_Authentication=FALSE
ixm7@SOBPC02=93E451B8E0A21194D5A1E0CADB66E637AD3A05DF32F1686B
B2648F251F9F9BA2BEDD1EC124486B56B88080D2BEA0CA61
```

The security of login information is maintained not only by storing it in **encrypted** format, but also by storing it with an internal identification of which **Windows User & PC** this login information belongs to. **DataLink Viewer uses this encrypted database login information only after checking that the same Windows user is running from the same PC.** In other words, users cannot break the login security by attempting to copy and paste the encrypted information to their own ini file entry).

For example, in the example shown above integrated authentication has been enabled. This can be done via a checkbox in the Option dialog (Launch Tab). The user (**ixm7**) then logged in to a secure database by providing a **database user id & password**. The user turned on the "**Rememebr Me**" option (visible only when integrated authentication is enabled):



Server: warehouse
Database: student
User ID: ixm7
Password: xxxxxxxx
☑ Remember Me

The information was then saved for the **ixm7** user, running on the **SOBPC02** PC as shown in the ini file above. **From that point on, the same user (ixm7), once logged to the same PC (SOBPC02), doesn't need to manually login to the same data source.**

The same user can turn on the "Remember Me" option for **unlimited number of secure data sources** and the information for all of them would be maintained inside the encrypted entry. The Options dialog allows each user to delete their own integrated authentication information by clicking a button.

Shared Machine Authentication

This section describes how one user can elect to share their integrated authentication information with any other user who successfully logged in to the same machine.

Step 1: First, add the entry in bold to the DataLink_Viewer.ini file:

```
-----------------------------------------------
[Integrated_Authentication]
Enable_Integrated_Authentication=TRUE
ixm7@SOBPC02=18CB9CAE3D8BF3484000123301DD155638EAD4AD6B4D622C04DF125B7404BCBC4717A5DA2FBCD94314A7CE63BBF7357E
Enable_Shared_Machine_Authentication=TRUE
-----------------------------------------------
```

Step 2: Then, as the "key" user who will share integrated authentication, run a report and get to a login dialog.
Note: if you already have integrated authentication for yourself, use Forced Login.
Alternatively, discard your integrated authentication (using the Trash Can button in the Options dialog). Make sure you turn on the Remember Me option in the login dialog, just like setting up integrated authentication for yourself.

Step 3: Because of the **Enable_Shared_Machine_Authentication=TRUE**
you would get a dialog asking you if you wish to share your integrated authentication functionality with other users who logged in to the same machine. This ensures a user can't be tricked into sharing integrated information without their knowledge and expressed consent.
Click YES.
If you then open the DataLink_Viewer.ini file you would notice this process generated a new entry (in bold):

```
-----------------------------------------------
[Integrated_Authentication]
Enable_Integrated_Authentication=TRUE
ixm7@SOBPC02=18CB9CAE3D8BF3484000123301DD155638EAD4AD6B4D622C04DF125B7404BCBC4717A5DA2FBCD94314A7CE63BBF7357E
Enable_Shared_Machine_Authentication=TRUE
Shared_Machine_Authentication=C8B6CD373D5D5ADDC6FE9F379521C7318FA297CB595B992C
-----------------------------------------------
```

That entry, in my particular case, points to the **ixm7@SOBPC02** integrated authentication entry.

Notes:

1. The **Enable_Integrated_Authentication** (True or False) setting is **always taken from the "user" ini file.** This allows the user to turn it off if they wish. For example, they may wish to switch between ODBC Data Sources by using the special option in the login dialog.

2. The **Enable_Shared_Machine_Authentication** and **Shared_Machine_Authentication** information is **always taken from the "master" ini file**. This allows an administrator to enable/disable and change the shared machine authentication for all users in one central file.

3. The regular integrated authentication information (for a **user@machine** entry that matches the logged in user id and the machine id) is always taken from the user ini file, if it exists.

4. **There can be only one shared machine authentication entry**. If you need to change to another administrator, delete the **Shared_Machine_Authentication** line and let the new administrator go through the Remember Me and dialog step.

5. If the administrator adds more data sources and login information to their integrated authentication information, all the machine users would have access to the new data sources.
This is because the entry is really a "pointer" to whatever that administrator has accumulated in their entry (ixm7@SOBPC02 in my case).

6. If you interactively switch between DSNs and you want Integrated Authentication functionality, set **Enable_Integrated_Authentication_For_DSN_Changes** to **True**
This is a rare scenario so, for more detail, contact Millet Software.

Shared Secret Password with Windows User IDs

DataLink Viewer has special functionality allowing an administrator to set/change a secret global password for all users who will then be authenticated to the database using their own windows user id and the secret global password.

If you are in the rare situation where you need to use this functionality, contact Millet Software and, if your use scenario matches this functionality, you will receive detailed instructions.

Integrated Authentication for Interactive ODBC DSN Changes

'Database Choice Functionality' can be combined with 'Integrated Authentication' by setting the ini entry of:
Enable_Integrated_Authentication_For_DSN_Changes=True
Clicking one of the ODBC DSNs listed in the login dialog then populate the user id & password automatically. See this image as an example.

To streamline the choice and the login steps, you can simplify the login dialog so it only shows the DSN choices (see image), locate the following ini entry under [Integrated Authentication], and set it to True:

```
[Integrated Authentication]
…
Simple_Choice_If_Enable_Integrated_Authentication_For_DSN_Changes=TRUE
```

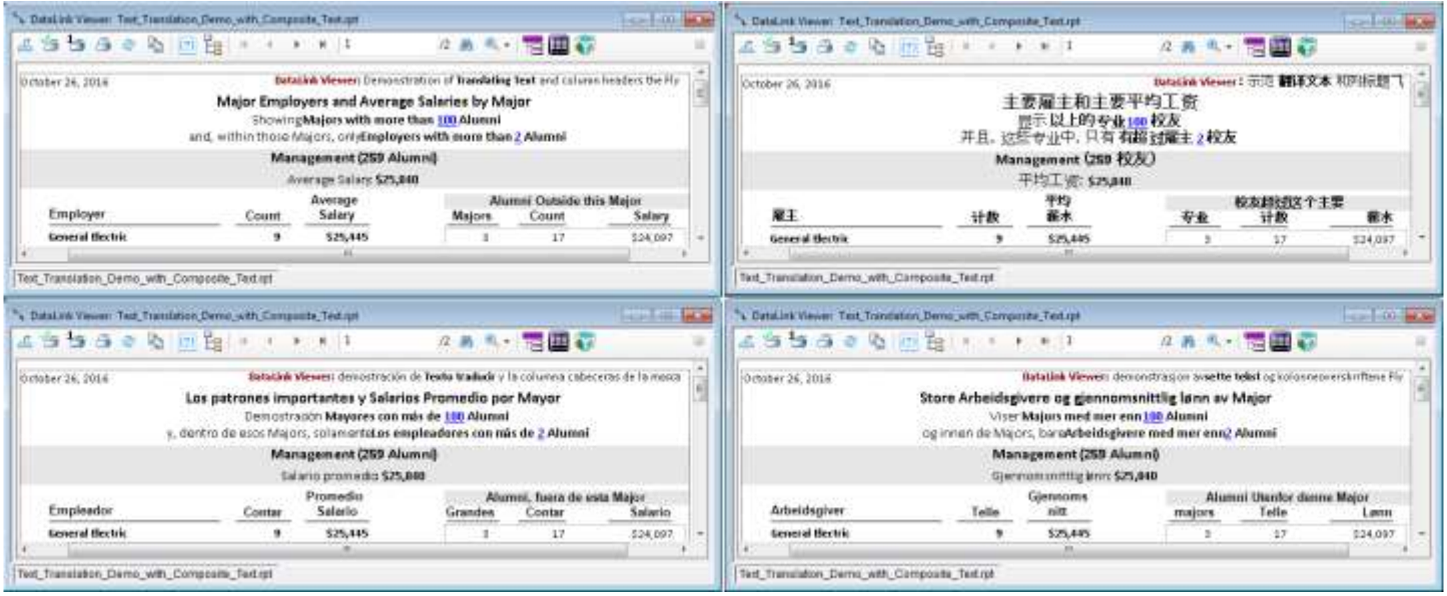
A **double-click** on the target DSN would then automatically log in to that data source.

Language Translation / Localization

DataLink Viewer provides options for translating all text object and column headers from one language to another. See 2-minute video demo.

See this picture for side-by-side images of DataLink Viewer showing the same report: a) with no translation, b) translation to **Spanish**, c) translation to **Chinese**, and d) translation to **Norwegian**.

Or click on the image below to see a larger version.



DataLink Viewer: Text_Translation_Demo_with_Composite_Text.rpt

October 26, 2016

DataLink Viewer: Demonstration of **Translating Text** and column headers the Fly

Major Employers and Average Salaries by Major

Showing **Majors with more than 100 Alumni**

and, within those Majors, only **Employers with more than 2 Alumni**

Management (259 Alumni)

Average Salary: **$25,840**

Employer	Count	Average Salary	Alumni Outside this Major		
			Majors	Count	Salary
General Electric	9	$25,445	3	17	$24,097

Text_Translation_Demo_with_Composite_Text.rpt

DataLink Viewer: Text_Translation_Demo_with_Composite_Text.rpt

October 26, 2016

DataLink Viewer：示范 **翻译文本** 和列标题飞

主要雇主和主要平均工资

显示 **以上的专业 100 校友**

并且，这些专业中，只有 **有超过雇主 2 校友**

Management (259 校友)

平均工资: **$25,840**

雇主	计数	平均 薪水	校友超出这个主要		
			专业	计数	薪水
General Electric	9	$25,445	3	17	$24,097

Text_Translation_Demo_with_Composite_Text.rpt

DataLink Viewer: Text_Translation_Demo_with_Composite_Text.rpt

October 26, 2016

DataLink Viewer: demostración de **Texto traducir** y la columna cabeceras de la mosca

Los patrones importantes y Salarios Promedio por Mayor

Demostración **Mayores con más de 100 Alumni**

y, dentro de esos Majors, solamente **Los empleadores con más de 2 Alumni**

Management (259 Alumni)

Salario promedio: **$25,840**

Empleador	Contar	Promedio Salario	Alumni, fuera de esta Major		
			Grandes	Contar	Salario
General Electric	9	$25,445	3	17	$24,097

Text_Translation_Demo_with_Composite_Text.rpt

DataLink Viewer: Text_Translation_Demo_with_Composite_Text.rpt

October 26, 2016

DataLink Viewer: demonstrasjon av **sette tekst** og kolonneoverskriftene Fly

Store Arbeidsgivere og gjennomsnittlig lønn av Major

Viser **Majors med mer enn 100 Alumni**

og innen de Majors, bare **Arbeidsgivere med mer enn 2 Alumni**

Management (259 Alumni)

Gjennomsnittlig lønn: **$25,840**

Arbeidsgiver	Telle	Gjennoms nitt	Alumni Utenfor denne Major		
			majors	Telle	Lønn
General Electric	9	$25,445	3	17	$24,097

Text_Translation_Demo_with_Composite_Text.rpt

This functionality uses Google Translate, which charges $20 for 1 million translated characters and supports more than 100 languages. To enable the service, you need to follow Google's Instructions to create a cloud project, enable billing, and get your API Key. You then need to set an entry in a [Translate] section ofDataLink_Viewer.ini similar to the example below:

```
--------------------------------
[Translation]
Enable_Translation=True
From_Language=English
To_Language=Chinese
GoogleAPI_TranslateKey=AIzaSyC4C22Af…
No_Change=DataLink Viewer||Millet Software
--------------------------------
```

The **No_Change** entry indicates what text elements should be exempt from translation.

To translate dynamic content in the report (database fields and formulas), you may use my CUT Light User Function Library, which adds a GoogleTranslate() function to the Crystal Reports formula editor.

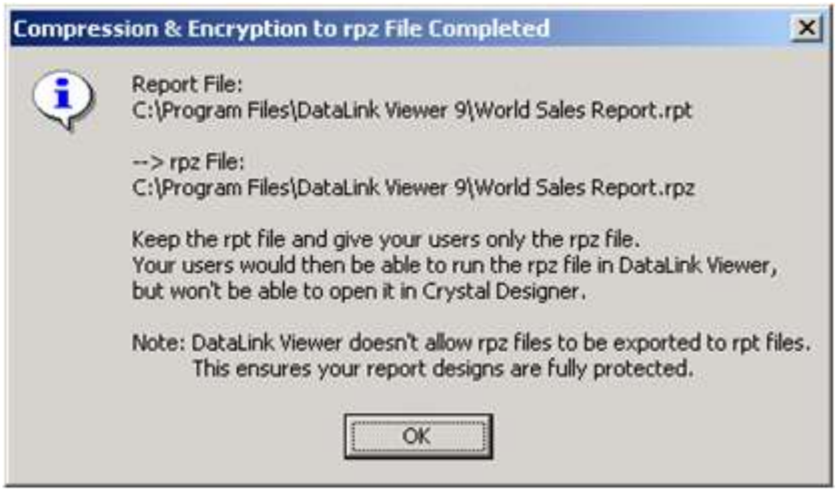
Translate Button in Preview

If the translation feature is turned on (Enable_Translation = True) then a Translate button becomes visible in the Preview window and allows you to change the target language without needing to run the report again. See demo image and 2-minute video demo.

Protect Report Designs with rpz Files

Compress & Encrypt Rpt to Rpz

The 'Compress & Encrypt Rpt to Rpz button' (on the 1st Tab of DataLink Viewer) allows you to select an rpt file and convert it to **rpz** file.



Compression & Encryption to rpz File Completed

Report File:
C:\Program Files\DataLink Viewer 9\World Sales Report.rpt

--> rpz File:
C:\Program Files\DataLink Viewer 9\World Sales Report.rpz

Keep the rpt file and give your users only the rpz file.
Your users would then be able to run the rpz file in DataLink Viewer,
but won't be able to open it in Crystal Designer.

Note: DataLink Viewer doesn't allow rpz files to be exported to rpt files.
This ensures your report designs are fully protected.

The resulting **rpz** file is a compressed and encrypted version of the rpt file that is recognizable only by DataLink Viewer & Visual CUT. Your users can run the resulting **rpz** files in DataLink Viewer or Visual CUT, but cannot view or modify them in Crystal.

This allows developers to protect and hide their reports designs (either as an intellectual property issue or as a tech support issue). They can simply keep the rpt files and distribute only the **rpz** files to their users. Note: .rpz files should not be renamed.

Within DataLink Viewer & Visual CUT, **rpz** files behave just like rpt files except that, in order to protect the report design, exporting **rpz** files to "rpt" format is not possible.

Note: DataLink Viewer provides a special export format of "**Protected Report (*.rpz)**". This allows users to export the report with saved data to another .rpz file.

Make_Rpz Command Line Argument

If you need to automate the conversion of rpt files to rpz files using scheduled or automated processes, DataLink Viewer provides a command line API.
Your command line call should look like this (all in one line):

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe"
"Make_RPZ:c:\test\*.rpt>c:\MyFolder>120"
```

After the Make_RPZ key word and the colon, the arguments are separated by ">" as a delimiter. The three arguments are:

1. The path to the rpt file(s) to be converted.
   - you may specify wild cards (as demonstrated in the example above)
   - you may specify multiple paths separated by a semi-colon. For example:
   "Make_RPZ**:c:\rptFolder1\*.rpt;c:\rptFolder2\*.rpt**>**c:\rpzFolder**>**120**"

2. The target folder where the rpz files should be deposited

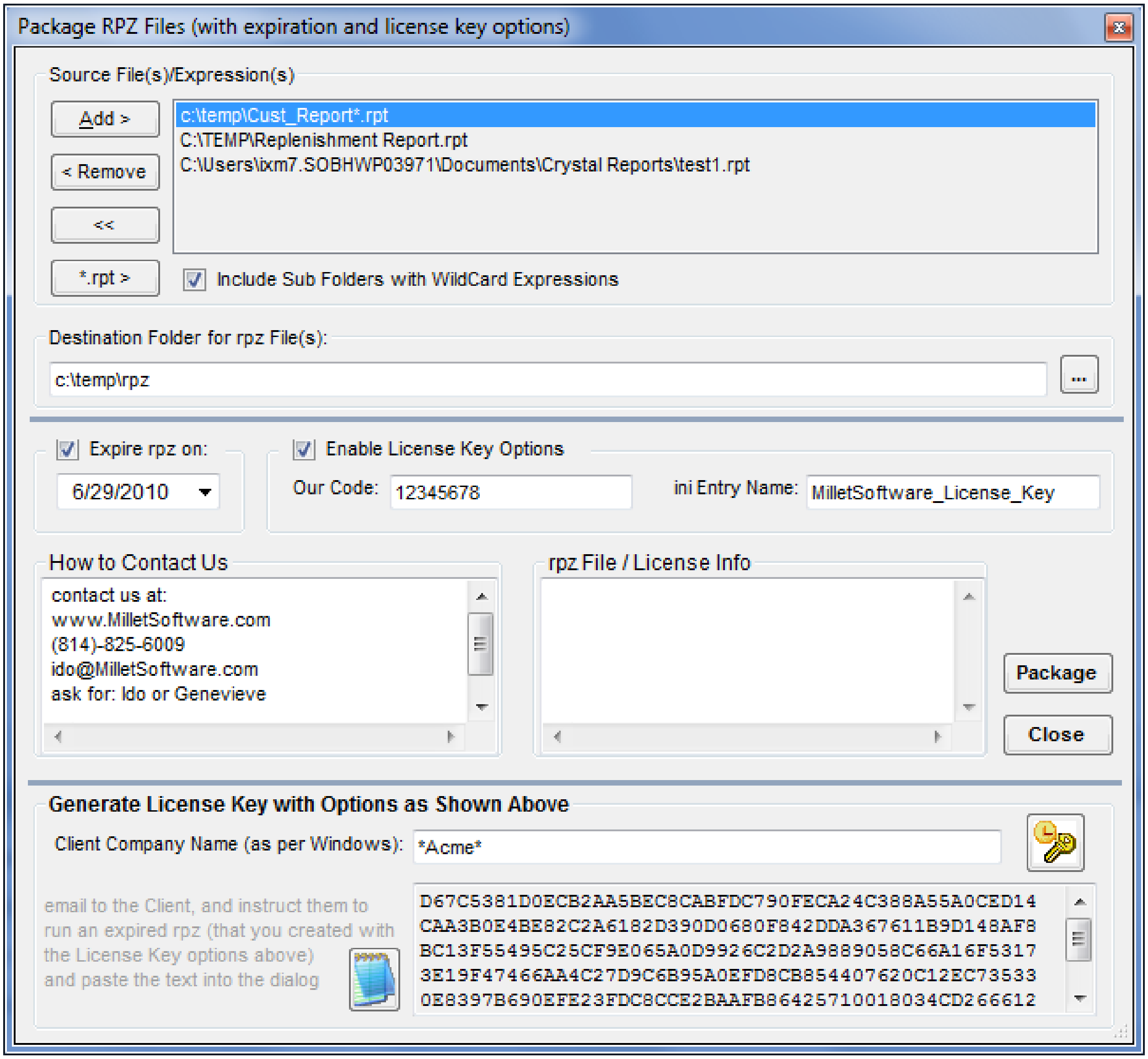
3. The maximum age, in minutes, of the rpt file in order to be included. Older files would be skipped.
   This allows the command line to be placed in a batch file and scheduled while avoiding the conversion of older files that have already been converted.
   Use a value of zero to convert all files regardless of age.

Create rpz Files with Expiration and License Keys

You can apply expiration date and/or license keys to rpz files by setting the following entry in the DataLink_Viewer.ini file:

```
[Options]
Enable_Advanced_RPZ_Options=True
```

When that option is enabled, the dialog you get when clicking on the 'Compress & Encrypt Rpt to Rpz' button looks like this:



Package RPZ Files (with expiration and license key options)

Source File(s)/Expression(s)

```
c:\temp\Cust_Report*.rpt
C:\TEMP\Replenishment Report.rpt
C:\Users\ixm7.SOBHWP03971\Documents\Crystal Reports\test1.rpt
```

☑ Include Sub Folders with WildCard Expressions

Destination Folder for rpz File(s): c:\temp\rpz

☑ Expire rpz on: 6/29/2010

☑ Enable License Key Options

Our Code: 12345678

ini Entry Name: MilletSoftware_License_Key

How to Contact Us

contact us at:
www.MilletSoftware.com
(814)-825-6009
ido@MilletSoftware.com
ask for: Ido or Genevieve

rpz File / License Info

Generate License Key with Options as Shown Above

Client Company Name (as per Windows): *Acme*

email to the Client, and instruct them to run an expired rpz (that you created with the License Key options above) and paste the text into the dialog

```
D67C5381D0ECB2AA5BEC8CABFDC790FECA24C388A55A0CED14
CAA3B0E4BE82C2A6182D390D0680F842DDA367611B9D148AF8
BC13F55495C25CF9E065A0D9926C2D2A9889058C66A16F5317
3E19F47466AA4C27D9C6B95A0EFD8CB854407620C12EC73533
0E8397B690EFE23FDC8CCE2BAAFB86425710018034CD266612
```

Please contact Millet Software for more detail about the various options and the use scenarios supported by this dialog.

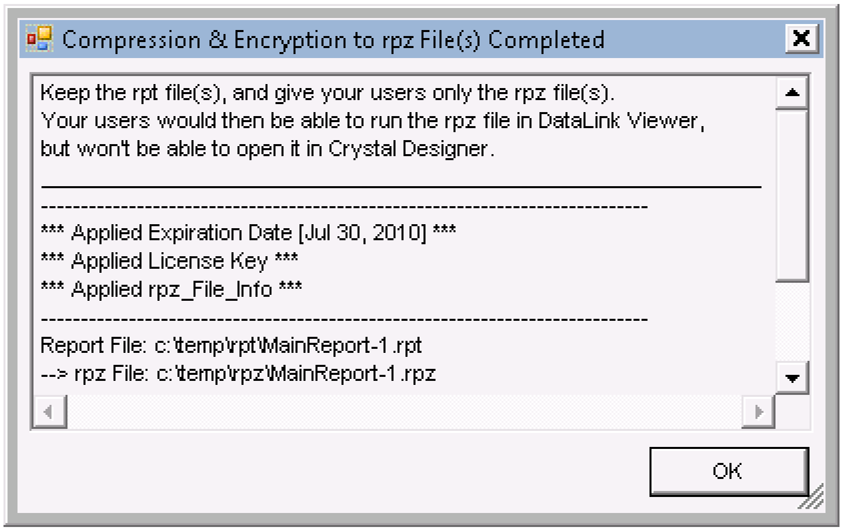
Make_Rpz2 Command Line Argument

If you need to automate the conversion of rpt files to rpz files with expiration dates and license keys, your command line call should look like this (all in one line):

```
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" "Make_RPZ2:c:\test\*.rpt>>>
c:\MyFolder>>>False>>>2221440>>>rpz file info line 1/////and line 2>>>30/07/2010>>>
MilletSoftware_License_Key1>>>12345678>>>Call us at (814) 825-6008/////ido@MilletSoftware.com>>>
True"
```

After the Make_RPZ2 key word and the colon, the arguments are separated by ">>>" as a delimiter. The 8 arguments are:

1. The **path to the rpt file(s) to be converted**.
   - you may specify wild cards (as demonstrated in the example above)
   - you may specify multiple paths separated by a semi-colon.
2. The **target folder** where the rpz files should be deposited
3. **Include subfolders** when wildcard expressions are used for source files (True/False)?
4. The **maximum age**, in minutes, of the rpt file(s) to be included. Older files would be skipped. This allows the command line to be placed in a batch file and scheduled while avoiding the conversion of older files that have already been converted.
   Use a value of zero to convert all files regardless of age.
5. **Text information to embed in the rpz file**. Separate lines with '/////'. This information can be accessed via a report parameter named DLV_Rpz_File_Info
6. **Rpz Expiration Date** (dd/mm/yyyy). The rpz file will not run beyond that date, unless a license key with a later expiration date is added to the machine.
7. **Contact Information** to embed in the rpz file. This information is provided to the user when trying to run an expired rpz or an rpz requiring a new license key.
8. **Show Conversion Results Dialog** (True/False). This controls whether the process will be "quiet" (typical for a scheduled process) or result in a dialog showing what files were converted and what options were applied:



```
Keep the rpt file(s), and give your users only the rpz file(s).
Your users would then be able to run the rpz file in DataLink Viewer,
but won't be able to open it in Crystal Designer.
__________________________________________________________________________
---------------------------------------------------------------------------
*** Applied Expiration Date [Jul 30, 2010] ***
*** Applied License Key ***
*** Applied rpz_File_Info ***
---------------------------------------------------------------------------
Report File: c:\temp\rpt\MainReport-1.rpt
--> rpz File: c:\temp\rpz\MainReport-1.rpz
```

Monitoring DataLink Viewer Use

DataLink Viewer allows you to monitor the use and performance of reports across the organization via logging to an ODBC table or to a simple text file. Logging to ODBC is a more secure and powerful approach and is described first.

Record Processing to an ODBC Database

To log processing to an ODBC database, you must create a table called DLV_Log in the target database. Email to me if you'd like to receive a sample MS Access database with the required DLV_Log table.

Below are example of data structures for MS Access and MS SQL Server. However, those are just examples. You can use such a table in any other ODBC aware database (Oracle, DB2, Sybase, etc.).

Typical Use

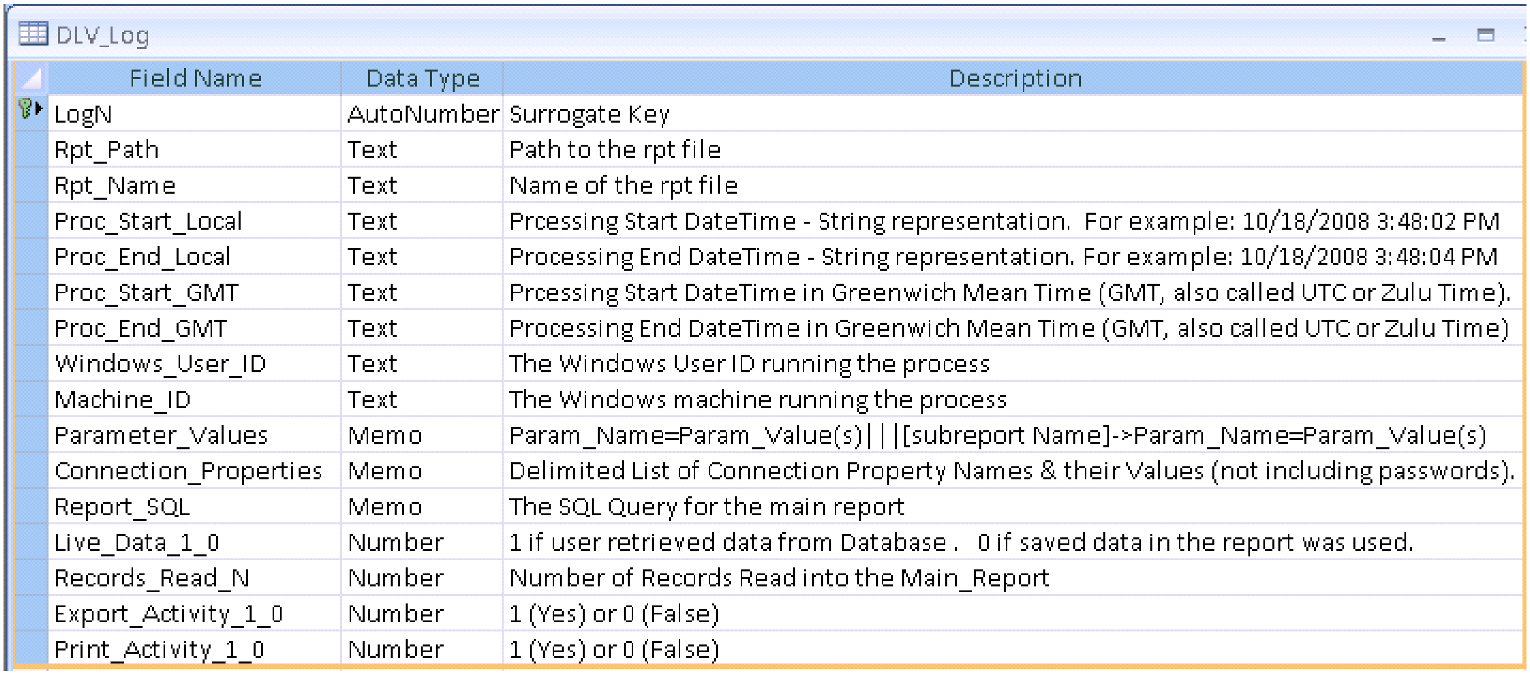
The DLV log table can be used to:
Monitor report use

1. Monitor report performance (using the start & end time information)
2. Monitor what employees access/print/export what data. This can be useful for addressing data privacy and protection concerns and requirements (e.g., HIPAA)

If there is a need to monitor this log for exception situations, you can use Visual CUT (another Millet Software tool) to schedule exception reports and email alerts against this table.

MS Access Data Structure

Here is the table structure required for this table, when implemented under MS Access (along with comments explaining what information is recorded):



Field Name	Data Type	Description
LogN	AutoNumber	Surrogate Key
Rpt_Path	Text	Path to the rpt file
Rpt_Name	Text	Name of the rpt file
Proc_Start_Local	Text	Prcessing Start DateTime - String representation. For example: 10/18/2008 3:48:02 PM
Proc_End_Local	Text	Processing End DateTime - String representation. For example: 10/18/2008 3:48:04 PM
Proc_Start_GMT	Text	Prcessing Start DateTime in Greenwich Mean Time (GMT, also called UTC or Zulu Time).
Proc_End_GMT	Text	Processing End DateTime in Greenwich Mean Time (GMT, also called UTC or Zulu Time)
Windows_User_ID	Text	The Windows User ID running the process
Machine_ID	Text	The Windows machine running the process
Parameter_Values	Memo	Param_Name=Param_Value(s)|||[subreport Name]->Param_Name=Param_Value(s)
Connection_Properties	Memo	Delimited List of Connection Property Names & their Values (not including passwords).
Report_SQL	Memo	The SQL Query for the main report
Live_Data_1_0	Number	1 if user retrieved data from Database . 0 if saved data in the report was used.
Records_Read_N	Number	Number of Records Read into the Main_Report
Export_Activity_1_0	Number	1 (Yes) or 0 (False)
Print_Activity_1_0	Number	1 (Yes) or 0 (False)

SQL Server Data Structure
Here is a script for creating the table in Microsoft **SQL Server**:

```
CREATE TABLE [dbo].[DLV_Log] (
[LogN] [int] IDENTITY (1, 1) NOT FOR REPLICATION  NOT NULL ,
[Rpt_Path] [nvarchar] (255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL ,
[Rpt_Name] [nvarchar] (255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL ,
[Proc_Start_Local] [nvarchar] (255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL ,
[Proc_End_Local] [nvarchar] (255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL ,
[Proc_Start_GMT] [nvarchar] (255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL ,
[Proc_End_GMT] [nvarchar] (255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL ,
[Windows_User_ID] [nvarchar] (255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL ,
[Machine_ID] [nvarchar] (255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL ,
[Parameter_Values] [nvarchar] (40000) COLLATE SQL_Latin1_General_CP1_CI_AS NULL ,
[Connection_Properties] [nvarchar] (40000) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
[Report_SQL] [nvarchar] (40000) COLLATE SQL_Latin1_General_CP1_CI_AS NULL ,
[Live_Data_1_0] [int] NULL ,
[Records_Read_N] [int] NULL ,
[Export_Activity_1_0] [int] NULL ,
[Print_Activity_1_0] [int] NULL
) ON [PRIMARY]
GO
```

Note: for recent versions of SQL Server, replace [nvarchar] (**40000**) with [nvarchar] (**MAX**)

ORACLE DATA STRUCTURE

The script below, contributed by Jonathan Klobucnik from A.H. Belo, also includes a definition of a Sequence and a Trigger to handle the Auto-Numbering requirement:

```
CREATE TABLE DLV_LOG
(
  LOGN NUMBER(*, 0) NOT NULL , RPT_PATH NVARCHAR2(255) , RPT_NAME NVARCHAR2(255)
, PROC_START_LOCAL NVARCHAR2(255) , PROC_END_LOCAL NVARCHAR2(255)
, PROC_START_GMT NVARCHAR2(255) , PROC_END_GMT NVARCHAR2(255)
, WINDOWS_USER_ID NVARCHAR2(255) , MACHINE_ID NVARCHAR2(255) , PARAMETER_VALUES CLOB
, CONNECTION_PROPERTIES CLOB , REPORT_SQL CLOB , LIVE_DATA_1_0 NUMBER(*, 0)
, RECORDS_READ_N NUMBER(*, 0) , EXPORT_ACTIVITY_1_0 NUMBER(*, 0)
, PRINT_ACTIVITY_1_0 NUMBER(*, 0) , CONSTRAINT DLV_LOG_PK PRIMARY KEY
  (
    LOGN
  )
ENABLE
)
LOGGING
PCTFREE 10
INITRANS 1
STORAGE
(
  BUFFER_POOL DEFAULT
)
LOB (PARAMETER_VALUES) STORE AS
(
  ENABLE STORAGE IN ROW
  CHUNK 8192
  RETENTION
  NOCACHE
  LOGGING
)
LOB (CONNECTION_PROPERTIES) STORE AS
(
  ENABLE STORAGE IN ROW
  CHUNK 8192
  RETENTION
  NOCACHE
  LOGGING
)
LOB (REPORT_SQL) STORE AS
(
  ENABLE STORAGE IN ROW
  CHUNK 8192
  RETENTION
  NOCACHE
  LOGGING
);
/
/*Sequence to allow the trigger to "auto number" the primary key*/
CREATE SEQUENCE DLV_LOG_SEQ;
/
/*Trigger to automatically generate the primary key values*/
CREATE OR REPLACE TRIGGER DLV_LOG_INS
BEFORE INSERT ON DLV_LOG
FOR EACH ROW
WHEN (new.LogN IS NULL)
BEGIN
  SELECT DLV_LOG_SEQ.NEXTVAL
  INTO   :new.LogN
  FROM   dual;
END;
```

"ORACLE" MODE (BIND VARIABLES)

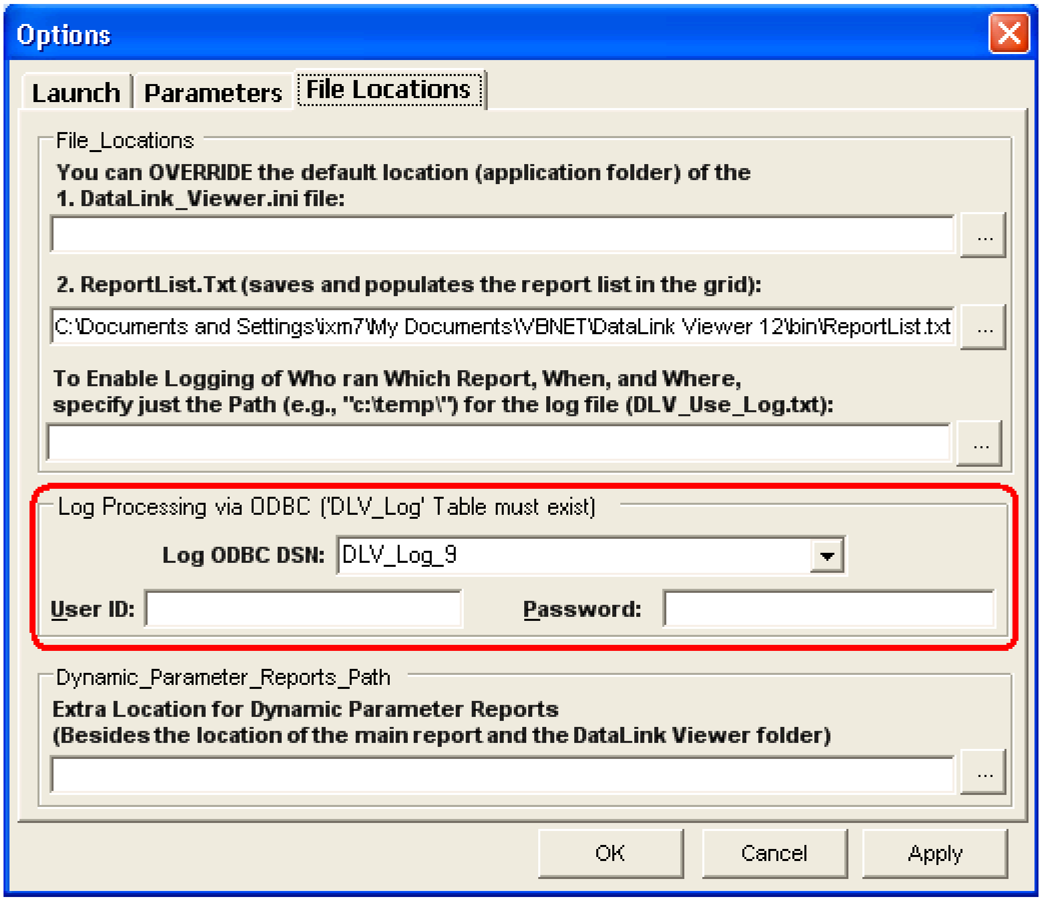
If you wish to log processing to an Oracle database, you should add the following entry to the [Options] section of DataLink_Viewer.ini:

```
Log_ODBC_Type=Oracle
```

That option sends Insert SQL statements using bind variables, an approach that avoids a 4K column size limitation.

HOW TO START LOGGING?

The following DataLink Viewer Options dialog allows you to specify the ODBC Data Source Name (DSN) where the DLV table resides and the User ID & Password (stored encrypted), if the data source requires a login.



File_Locations

You can OVERRIDE the default location (application folder) of the
1. DataLink_Viewer.ini file:

2. ReportList.Txt (saves and populates the report list in the grid):
C:\Documents and Settings\ixm7\My Documents\VBNET\DataLink Viewer 12\bin\ReportList.txt

To Enable Logging of Who ran Which Report, When, and Where,
specify just the Path (e.g., "c:\temp\") for the log file (DLV_Use_Log.txt):

Log Processing via ODBC ('DLV_Log' Table must exist)

Log ODBC DSN: DLV_Log_9

User ID:

Password:

Dynamic_Parameter_Reports_Path

Extra Location for Dynamic Parameter Reports
(Besides the location of the main report and the DataLink Viewer folder)

Record Report Use in a Text Log File

If you use the Options dialog to specify a folder location for a **DLV_Use_Log.txt** DLV creates that file (if it doesn't already exist) and appends to it use statistics after each report viewing. This log file contains one row with column headers followed by one row for each report viewing event. The columns are:

1) Report Path
2) Report Name
3) User_ID
4) PC
5) Start
6) Finish

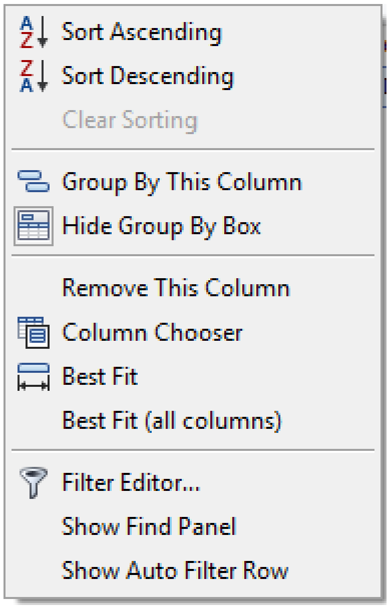
You can use that file (for example, using Crystal with a Text ODBC driver) to analyze what reports are popular, who runs what reports, and what reports take too long to run.

Settings & Options

Customizing the Grid Layout

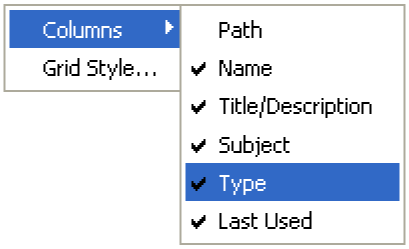
By dragging, clicking, or right-clicking the grid column headers you can apply various options such as grouping the report by any column(s), sorting the grid, hiding/showing columns, etc.

Here is the menu you get when you **right-click a column header**:



Most of these options are quite intuitive. The ‘Group By Box’ shows or hides the area at the top of the screen that allows you to control how the Grid is grouped by dragging & Dropping column headers to/from that area.

Here is the menu you get when you **right-click the top-left corner of the grid**:

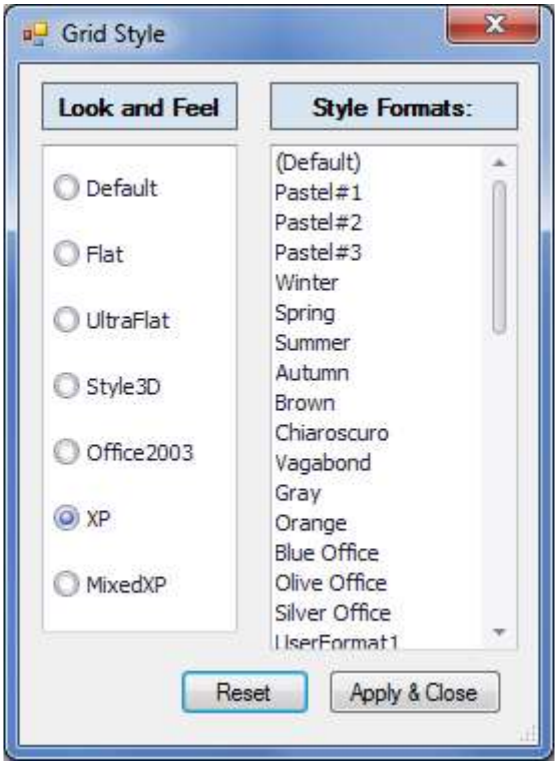


As shown above, the Columns menu cascades to the list of columns and allows you to directly set column visibility. You can do the same via a slightly longer process using the "Column Chooser" option in the previously shown menu.

Customizing the Grid Style

The "Grid Style" option in the menu you invoke by **right-clicking the top-left corner of the grid** bring up a dialog that allows you to customize the look & feel of the grid. Any choice you make in the Grid Style dialog shown below is immediately reflected in the style of the grid.

The style of the grid is maintained in **ReportList.grd**. You can always revert back to the default style of the application by closing DataLink Viewer, Deleting that file, and starting DataLink again.



○ Default
○ Flat
○ UltraFlat
○ Style3D
○ Office2003
● XP
○ MixedXP

Disabling Report Preview Buttons

In some scenarios you may wish to remove the Print, Export, Select Expert, or Search Expert buttons from the preview window of reports. This is useful, for example, in cases where your application launches reports in DataLink Viewer via a command line and you wish to restrict some users from printing and/or exporting the report.

You can globally remove buttons from the Preview window by setting the following options in the **DataLink_Viewer.ini** file:

```
[Options]
Disable_Print_Button=TRUE      (note: this disables all 3 print buttons)
Disable_Print_ThisPage_Button=TRUE
Disable_Print_Quick_Button=TRUE
Disable_Export_Button=TRUE
Disable_Search_Button=TRUE
Disable_Refresh_Button=TRUE
Disable_Parameter_Panel_Button=TRUE
```

Alternatively, you can control these options via **command line arguments**. For example (all in one line):
"C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe" -v "C:\temp\MyReport.rpt.rpt" "Parm1:1997" "**Disable_Print_Button**:TRUE" "**Disable_Export_Button**:TRUE"

Note: see "***Enforcing Settings in a Master DataLink_Viewer.ini File***" for information about enforcing these settings from the "master" ini file to all "user" ini files.

Disabling DataLink Viewer Buttons

In some scenarios you may wish to disable certain user interface buttons so that, for example, users can’t convert rpt files to rpz files, open the user manual, etc.

You can disable user interface buttons by setting the following options in the **DataLink_Viewer.ini** file:

```
[Options]
Disable_RPZ_Creation=TRUE
Disable_Check_for_Updates=TRUE
Disable_Options_Dialog=TRUE
Disable_Browse_Dialog=TRUE
Disable_User_Manual=TRUE
Disable_Version_Info=TRUE
```

Note: see "***Enforcing Settings in a Master DataLink_Viewer.ini File***" for information about enforcing these settings from the "master" ini file to all "user" ini files.

Disabling Login Dialog Memory of Last User ID

By default, DLV remembers and displays the last User ID specified in the login dialog.
To disable that behavior, set the following option in the **DataLink_Viewer.ini** file:

```
[Options]
Last_User_ID=DLV_DISABLED
```

Exclude Export Formats

To remove certain export formats from the export dialog, add an **Exclude_Export_Formats** entry to the [Export_Options] section in the **DataLink_Viewer.ini** file. Here is an example:

```
[Export_Options]
Exclude_Export_Formats =|Protected Report (*.rpz)|Read Only Report (*.rptr)|Crystal Report (*.rpt)|
```

The formats are listed exactly as they appear in the export format drop-down.

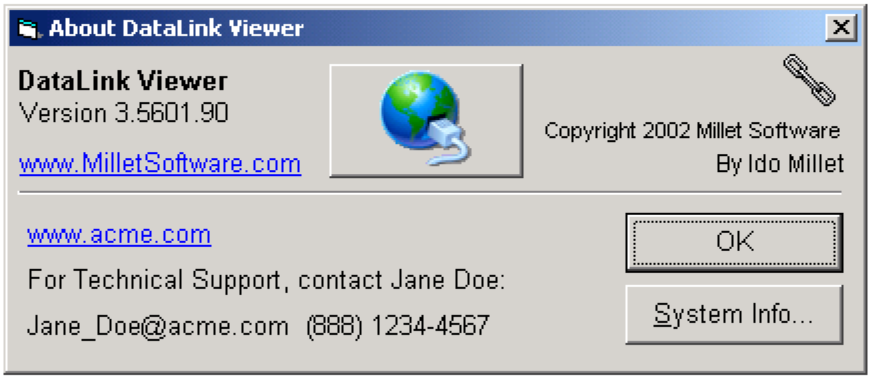
Add your Company Info to the About Dialog

In DataLink_Viewer.ini you can **set 3 lines in the About dialog to text of your choice.** This can be useful in a large company where you want users to know **who to contact with technical questions**. It can also be useful when you sell Crystal reports bundled with DataLink Viewer and you wish to specify your contact information for similar reasons.

For example, using the following settings in DataLink_Viewer.ini:

```
[Options]
About_Line1=www.acme.com
About_Line2=For Technical Support, contact Jane Doe:
About_Line3=Jane_Doe@acme.com  (888) 1234-4567
```

you would get the following About dialog:
Note: as demonstrated with the **www.acme.com** line, DataLink Viewer automatically assigns a web link to lines that contain only a url.



About DataLink Viewer

DataLink Viewer
Version 3.5601.90
www.MilletSoftware.com

Copyright 2002 Millet Software
By Ido Millet

www.acme.com
For Technical Support, contact Jane Doe:
Jane_Doe@acme.com (888) 1234-4567

File Location & Redirect Logic

Each time DataLink Viewer loads, the location of the Master DataLink_Viewer.ini is redirected by following these steps:

1. If the ini file in the application folder has a value specified for "ini_file" in the [File_Locations] section, that location is used for the DataLink_Viewer.ini
   note: this allows an administrator who has write permissions on the application folder to manually set the location.

2. More typically, the value in step 1 would be found as blank. DataLink Viewer then determines if a redirect is needed by testing to see if: a) ReportList.grd doesn't exists in the application folder **or** b) user doesn't have write permissions to DataLink_Viewer.ini in the application folder. If a redirect is needed, the application tries to locate and use DataLink_Viewer.ini in one of the following app data folder locations,
   under a **\MilletSoftware\DLV_2011\** folder:
    a. **Common App Data folder -** that location allows all users on that local machine to share the same ini file

    b. **User's Local App Data folder -** that location allows each user on that machine to have their own ini file

    c. **User's Roaming App Data folder -** that location allows each user to have the same ini file "follow them" to other machines.

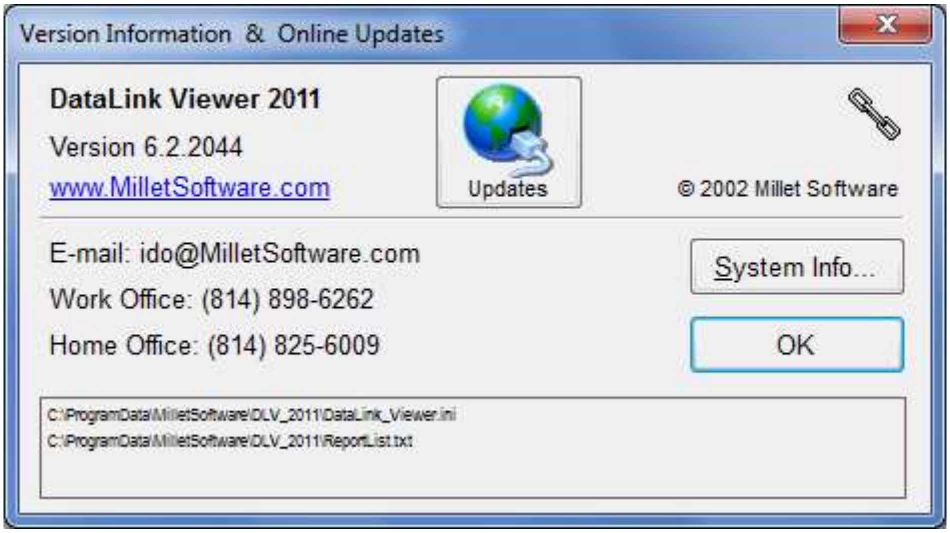
3. If DataLink_Viewer.ini was not found in any of the 3 locations above, which is **typical in 1st-time installation scenarios**, DataLink Viewer will copy it as well as ReportList.txt from the application folder to the **Common App Data folder** and notify the user that the redirect has occurred. The location of ReportList.txt would also be set to the same redirected location.

Notes: an ini file that was redirected to one of the locations above due to a write-protected application folder is considered a Master ini file. As usual, that Master ini file can be redirected further to a slave ini file by manually setting its "ini_file" location option under [File_Locations].

A blank option for ReportList.txt location in a redirected ini file is considered as an indication that the ReportList.txt file should be automatically copied to (if missing) and used at that location.

CHECKING AND NAVIGATING TO KEY FILE LOCATIONS

To check the locations of DataLink_Viewer.ini and ReportList.txt, you can click on the **'Version Information & Updates' button**. The textbox at the bottom of the dialog shows the current file locations:



DataLink Viewer 2011
Version 6.2.2044
www.MilletSoftware.com
© 2002 Millet Software

E-mail: ido@MilletSoftware.com
Work Office: (814) 898-6262
Home Office: (814) 825-6009

```
C:\ProgramData\MilletSoftware\DLV_2011\DataLink_Viewer.ini
C:\ProgramData\MilletSoftware\DLV_2011\ReportList.txt
```

To navigate to the Folder where DataLink_Viewer.ini is located, **double-click that textbox** and DataLink Viewer will open that folder location in File Explorer. That makes it easier to find and edit the ini file in cases where the folder is hidden (typical for app data folders).

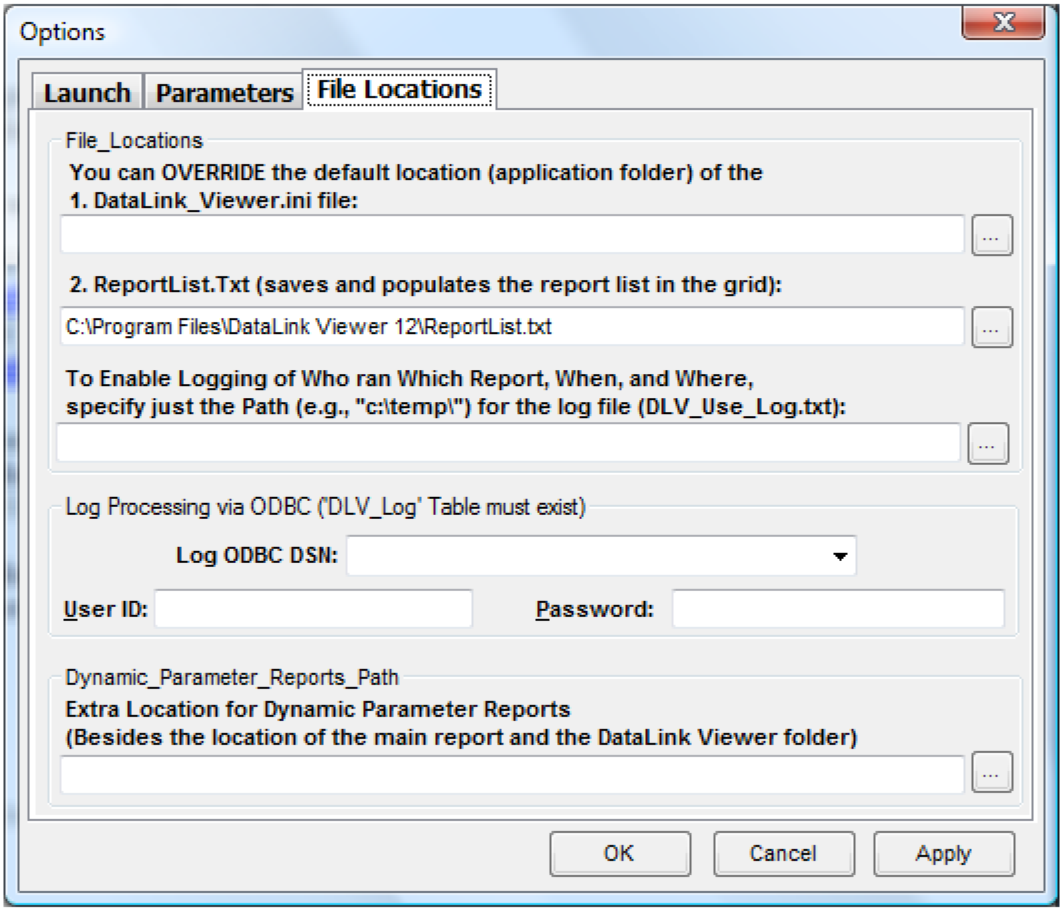
CITRIX AND FILE LOCATION FUNCTIONALITY

DataLink Viewer can be installed on Citrix but be sure to install from the Console.

The **File Locations** tab in the Options dialog **allows a single installation of DataLink Viewer on a *Citrix* or *Terminal Server* to support individual settings for each user** by providing each user their own version of **DataLink Viewer.ini** and **ReportList.txt file** under their own mapped user drive. For example:
`%USERPROFILE%\AppData\Local\MilletSoftware\DLV_11\DataLink_Viewer.ini`
Note: upon initial launch of DataLink Viewer by a user, if the target **folders** don't exist, they get created, and if the target **files** don't exist, they get copied from the master copies in the application folder.

An alternative approach is to use these settings to force all users to share a centralized version of these files. In such a case, you should make the ReportList.txt file attribute to Read-Only, so that the master list of reports doesn't get changed by the users.
Note: when the ReportList.txt file attribute of Read-Only is turned on, the Select Report grid would show to each user reports only from folders they have READ access to.

This dialog also allows you to specify a centralized/local logging of report use statistics.



File_Locations

You can OVERRIDE the default location (application folder) of the
1. DataLink_Viewer.ini file:

2. ReportList.Txt (saves and populates the report list in the grid): C:\Program Files\DataLink Viewer 12\ReportList.txt

To Enable Logging of Who ran Which Report, When, and Where,
specify just the Path (e.g., "c:\temp\") for the log file (DLV_Use_Log.txt):

Log Processing via ODBC ('DLV_Log' Table must exist)

Log ODBC DSN:

User ID: Password:

Dynamic_Parameter_Reports_Path

Extra Location for Dynamic Parameter Reports
(Besides the location of the main report and the DataLink Viewer folder)

Note: folder location options for files such as **DataLink_Viewer.ini** and **ReportList.txt** can include references to **environment variables** (such as **%USERNAME%**). This is useful for Citrix/TS scenarios.

Setting Integrated Authentication for Multiple Machines (Citrix Farm)

The **Integrated_Authentication_Set_Entry** command line argument can automate encrypted storage (within DataLink_Viewer.ini) of login information (Database User ID & Password) per specified Windows User ID and Machine Name(s).

In the simplest case, this allows an administrator to set or change Integrated Authentication for a user after installation of DataLink Viewer or after database password changes. Keep in mind that this login information is stored encrypted and can be used only if the specified **Windows User ID** manages to log into the specified **Windows Machine Name**.

Automated setting of Integrated Authentication information can be particularly useful for Citrix or TS server farms. Such deployments allow each user to launch DataLink Viewer on the least busy machine within the server farm. Any changes made to the **DataLink_Viewer.ini** file in the user's *Home* folder are automatically replicated to the other machines participating in the server farm.

However, integrated authentication information is stored (encrypted) per user & **machine** combination. So, as an administrator, when you add a user to the server farm, you may need to generate Integrated Authentication entries for that user & **all machines in the server farm**. Multiple ini file entries for the same user & different machines look like this:

```
[Integrated_Authentication]
User33@Server101=148580D7008FB47042E07958BB8884A7BAD32B2B7C268A6...
User33@Server102=0AA0F62E3F8091CD90AD9D87F4F5279102439D2432134BF725...
```

To facilitate the automated generation of such entries, you can call DataLink Viewer using a command line (all in 1 line) argument as follows:

```
…"C:\Program Files\DataLink Viewer 11\DataLink_Viewer_11.exe" "Integrated_Authentication_Set_Entry:
H:\DataLink_Viewer.ini>>Server101||Server102>>User33>>joe3>>sesame>>Append"
```

After the **Integrated_Authentication_Set_Entry** key word and the colon, the 6 arguments are separated by ">>" as a delimiter:

1. The **path & name of the ini file**
2. **List of machines separated by || delimiter (or just the name of 1 machine)**
3. **The user id**
4. **The Database user id**
5. **The Database password**
6. **Operation Type:**
    a. **Append**: Appends the User ID & Password pair if it doesn't already exist for all specified machines
    b. **Replace**: like Append, but removes any other User ID & Passwords
    c. **Delete**: Deletes the User ID & Password pair if it already exists
    d. **Drop**: Completely drop all pairs from the specified User ID & Machine entries

ENFORCING SETTINGS IN A MASTER DATALINK_VIEWER.INI FILE

The "master" DataLink_Viewer.ini file is located in the application folder or the auto-redirected folder as described in the section above. The [File_Locations] section in the "master" file may indicate that a different "user" DataLink_Viewer.ini file, located at a different folder, should be used. As an administrator, you may want to ensure that some centralized settings in the "master" ini file always override the settings in the "user" ini file. You can do this by setting the values to all upper case (for example, TRUE or FALSE instead of True or False). This tells DataLink Viewer that it should use these settings from the "master" file.

This behavior applies to the following options, shown as if you wanted to apply them centrally from the "master" DataLink_Viewer.ini file:

```
[Options]
Disable_RPZ_Creation=TRUE
Disable_Check_for_Updates=TRUE
Disable_Options_Dialog=TRUE
Disable_Browse_Dialog=TRUE
Disable_User_Manual=TRUE
Disable_Version_Info=TRUE

Disable_Print_Button=TRUE
Disable_Export_Button=TRUE
Disable_Search_Button=TRUE
Disable_Parameter_Panel_Button=TRUE
```

UPDATING DATALINK_VIEWER.INI VIA A DELTA FILE

When deploying DataLink Viewer to many users, you may want to automate the process of updating some of the DataLink_Viewer.ini settings. You can do that by placing a **DataLink_Viewer_Delta.ini** file in the application folder. Any entries found in that file will update DataLink_Viewer.ini when the application is launched.

Here is an example of a **DataLink_Viewer_Delta.ini** file:

```
[Delta_Options]
Delete_After=NEVER
//USE or NEVER or Some Date specified as yyyyMMdd
// if entry above not found, then default is USE
Update_Master_INI=False
// if entry above not found, then default  is False
Update_Slave_INI=True
// if entry above not found, then default is True

[Options]
Attempt_Logon_Without_Password=False
Strip_Table_Qualifiers=True
Saved_Data_Action=Display
Associated_File_Launch_Mode=View Only
New_Window_On_DblClick=True
Parameter_Values_Remember_Max_Chars=900
Saved_Parameter_Set_Minimum_N=5

[Integrated_Authentication]
Enable_Integrated_Authentication=True
```

The [Delta_Options] section is used only to control the following aspects of the process:

- The Delete_After option controls when the Delta ini file is deleted:
  - NEVER - the file will not be deleted
  - USE - the file is deleted after being used once
  - yyyyMMdd - the file is deleted after the specified date

- Update_Master_INI controls whether the Master ini file is updated.

- Update_Slave_INI controls whether the User ini file is updated.

Explicit Assignment of Default Printer

To address a rare printing failure scenario under Citrix and Windows 2003, the following Datalink_Viewer.ini option allows an explicit assignment of the default printer when the user clicks the print button (before the printer selection dialog is displayed):

```
[Options]
Set_Report_To_Default_Printer=TRUE
```

Default Preview-Only Window Settings

You can specify default window size and location for view-only report preview when a report is launched that way for the first time. You specify this by adding a DEFAULT entry to the **[Report_Windows]** section in DataLink_Viewer.ini.

Simply copy an entry for a report within that section that was closed after setting size & position as desired.

For example, here is an entry for a maximized window without Group Tree panel and zoom level of 100%.

```
[Report_Windows]
DEFAULT=0||0||None::200||100||-120||-120
```

Setting Encrypted Password Entries

The **Encrypted_Password_Set_Entry** command line argument can automate encrypted storage (within DataLink_Viewer.ini) of passwords. This allows an administrator to set or change encrypted passwords for DataLink Viewer or Visual CUT that can later be referenced from command line arguments.

To generate such entries in a targeted ini file, you call DataLink Viewer using a command line (all in 1 line) argument as follows:

…"C:\Program Files\DataLink Viewer 11\DataLink_Viewer_11.exe" "**Encrypted_Password_Set_Entry:** **H:\DataLink_Viewer.ini**>>**Options**>>**Encrypted_Password_FTP**>>**sesame**"

After the **Encrypted_Password_Set_Entry** key word and the colon, the 4 arguments are separated by “>>” as a delimiter:

1. The **path & name of the ini file**
2. The **ini section name** (typically '**Options**')
3. **The Password Name**
4. **The Password to be Encrypted**

Known Issues and Limitation

- The preview window doesn't provide a Select Expert option. That option is not available in the new runtime components.
- Exports to pdf may result in smaller font size. This is a Crystal issue, and can be fixed using some registry entries. For explanation, see this blog by Ken Hamady: http://kenhamady.com/cru/archives/2503#more-2503

  It boils down to setting the following registry keys (for DataLink Viewer 2011):

  HKLM\SOFTWARE\SAP BusinessObjects\Crystal Reports for .NET Framework 4.0\Crystal Reports\Export\PDF\TruncationAdjustment (=2)
  HKLM\SOFTWARE\SAP BusinessObjects\Crystal Reports for .NET Framework 4.0\Crystal Reports\Export\PDF\UsePrecisePositioningForText (=1)

  This enlarges the font and also eliminate the truncation in most cases, and when it doesn't you can increase the TruncationAdjustment from 2 to 3 (or higher) until the problem is resolved. Note: On a 64-bit machine, for the 32-bit version of DLV 2011, the registry paths start with:

  HKLM\SOFTWARE\Wow6432Node\SAP BusinessObjects\...
- **Linked Dynamic Parameters** (applies only to the special DataLink Viewer linked dynamic parameter reports, not to the regular Crystal Reports dynamic parameters):
  - Data value in linked dynamic parameter reports is set via the tooltip property instead of via a different formula. This is not a limitation, but users of prior versions should be aware of this change. It requires a change in linked parameter reports design if you wish to reuse old reports.
  - Footer formula can't be used to control the **default** value in a linked dynamic parameter reports. Similarly, a footer formula can't be used to **require a value** for a linked dynamic parameter report.

Update History

Version 6.9.2017: Entered Testing January 17, 2024

NEW FEATURES

- You can now launch another report or application (and pass dynamic parameter values) via a **single-click** on a report object by setting a **tooltip expression** for that object.
  For detail, see *Launch a Report while Viewing another Report*
  and Launch another Application and Pass Parameters to It.
  See video demo [▶]

FIXES

- Fixed a problem in handling of ODBC DSN Groups (filtering the list of alternative ODBC DSNs in the login dialog) in the 64-bit version of DataLink Viewer.
- Fixed handling of the delimiter option in CSV exports.
- Fixed InputBox handling when launching another report via a click on the current report.

Version 6.9.1001: Released September 4, 2023

New Features

- You can now Generate Desktop Shortcuts to Launch Reports. See video demo [▶]
- You can now **initialize parameters based on date expressions**.
  For detail, see Initializing Parameter Values with Date Expressions. See video demo [▶]
- You can now Change Layout & Content when Printing the Report. See video demo [▶]
- You can now use a command line argument to set extra record selection logic.
- You can now specify Default Preview-Only Window Settings.
- You can now **exclude export formats**. See detail here.

▪

- You can now **generate a native image of the application so it starts and runs faster**.
  For detail, see Speeding Up via a Native Image.
- **A centralized ReportList.txt file (with all reports) can behave as if it contains user-specific reports**. If the C:\ProgramData\MilletSoftware\DLV_2011\ReportList.txt file is set to **Read-Only**, the ***Select Report*** grid shows reports only from folders where the current user has ***Read*** permissions.
- Updated several components to newer versions.
- Implemented **faster startup** using multi-core Just-in-Time compilation.
- Restricting ODBC DSN Choices (DSN Groups) now supports DSN Groups with Wildcards.
- You can now **embed environment variables** in **Last_Used_Export_Options entry**. For example:
  Last_Used_Export_Options =%USERPROFILE%\Desktop||5
- **Language translation** (via Google translate) now support more languages. See video demo [▶]
- Added ***Alt-C*** as a keyboard shortcut to **copy plain text** content of clicked field to the clipboard.
  For detail, see Copying Object/Text From The Report.
- New Items in Report Inspector:
  - **Printer properties**: Printer Driver, *Saved Printer* name, *Dissociate Page Size* (True/False), ‘No Printer’ (True/False).
  - **Subreport properties**: ‘Is Imported’, ‘Import Path’, ‘Reimport When Opening’, and ‘On Demand’.
  - **Subreport Link Properties**: the main report field, the subreport links, and the linked parameter name.
  - **Data Connection properties**: ‘Database Name’ and ‘User ID’
  - **Border property expressions** for crosstabs, charts, and images.
- Data Visualizer left panel (dimensions & measures) is now wider by default. It also remembers and restores prior used width.

- Parameter values are now saved for later reuse even when DLV is launched from a command line.

- Adding **Debug_Mode_When_Delegated = True** to [Options] section in ini file turns on debug mode when DLV processing is delegated from *Visual CUT*.

- **Setting formula expressions via command line argument** is now supported even when the formula name doesn't start with '^'.

- Enriched information in messages dealing with **missing printer**.

- Added sample report DLV_Column_Header_Sort_2011.rpt demonstrating how users can sort the report by clicking a column header.

FIXES

- Exporting GUI now includes the 'Crystal Report (*.rpt)' export format.

- Fixed installation ini file causing pdf export format to be excluded in some cases.

- Fixed an issue with resizing selective parameter refresh.

- Fixed handling of command line arguments using parameter names.

- Fixed an issue with reusing last export folder.

- Fixed a rare problem causing an error on report load.

- Fixed a rare login issue in scenarios where password is blank.

- Fixed handling of delegated processing (from Visual CUT) with Skip_Recent directives, Always_Force_Login option, group selection formula, more than 8 report parameters, .htm file extension, or cases where main report in empty and logon happens only at the subreport level.

- Fixed handling of some arguments (e.g. Xtra_Record_Selection and Set_Formulas1) when ***Skip Complex Login Logic*** is turned on.

- Xtra_Record_Selection argument can now handle odd cases where the existing record selection seems empty but actually contains several spaces and/or CrLf hidden characters.

- Fixed an issue with saving stored procedure parameters with null values.

- 'Loading Visualizer' progress bar now remains active while the data visualizer loads.

- Fixed a case where the main window opens outside screen boundaries due to screen changes.

- Fixed an issue causing login dialog for dynamic parameters.

- Fixed scenario where browsing for rpt file can add a duplicate row to the grid if the row is filtered.

- Improved user interface for encrypting named passwords.

- When specifying parameter values via a command line argument, parameter names can now contain a colon character. For example, "Parm_[{?:Test}]:test123"

- Fixed a problem with *Integrated_Authentication_Set_Entry* argument.

- Fixed rare problem in delegated processing for DateTime parameters marked for End-of-Day logic via an ini file option.

- Fixed language code lookup in language translation (Google Translate) feature.

- When launching a related report by double-clicking in a current report (DLV_Run feature) an error message was triggered if the user double-clicked twice too quickly. This is now fixed.

- When setting a **DateTime** parameter via a date constants pointing to the end of a custom calendar segment, (e.g. "Parm1:FiscalQ_**End**_RelativeTo_Today"), the time portion of the date is now set to the end of the day (11:59:59).

- Fixed remembering date parameter values when machine is set to display years as 2 digits.

Version 6.7.1001 [SP23]: Released June 30, 2018

- Packaged with Service Pack 23 of the Crystal Runtime.

- If you use Outlook, **report exports can now automatically launch an email message dialog with report-specific options (email subject, message, from, to, …) prepopulated and the exported file attached**. For detail, see Email Exported File.

- **Enhanced integration with Visual CUT 11** now allows Visual CUT to run Crystal 2016 reports with CrossTab calculated members and embedded summaries.

- Report Inspector feature now captures data connections, database tables, parameters (including an indication of use count), and many additional conditional formatting expressions for picture, line, box, and field objects (graphic location, font, border, Date, Numeric, etc.).

- Report inspector grid now uses column filters for certain columns (Object Type, Expression Type, Section) that facilitate multiple choices via checkboxes.

- You can now provide users with a mixture of protected data visualization layouts (users can't change or delete those layouts) as well as user-controlled layouts. For detail, see: Data Visualizer.

- **Report grid now shows a find panel** by default. See image.
  To hide the panel, find and set the *Show_Find_panel_in_Report_Grid* ini entry to False.

- Report grid column filters for certain columns (Path, Subject, and Type) now facilitate multiple choices via checkboxes.

- You can now **trigger exporting and provide only some of the parameter values in the command line arguments. DataLink Viewer will prompt the user for the rest** of the parameters and then complete the export (avoiding a 'Missing Parameter Values' error message).

- Added the '***Report Reload Discards Login Info***' and '***Always Force Login If In DSN Group***' checkboxes to the Database tab of the Options dialog.

- When **'Use Integrate Authentication for DSN Changes**' is turned on, **matching login info for the report's DSN is now prepopulated** on initial load of the report.

- You can now **force login for reports using certain DSNs** by setting the following entry in the ini file under [Options]:
  ODBC_DSN_Force_Login=||Northwind||Sage||

- Added a DataLink_Viewer.ini option under the **[Integrated_Authentication]** section of **Simple_Choice_If_Enable_Integrated_Authentication_For_DSN_Changes**.
  If set to **True**, and **Enable_Integrated_Authentication_For_DSN_Changes** is also **True**, the login dialog gets simplified (see image) and you can change the DSN and **automatically log in by simply double-clicking the desired DSN**.

- Dynamic linked parameter reports that use **DLV_AutoGen_DSN** as their DSN now "follow" the DSN selected for the main report even if the ini file option of Set_Parameter_Rpt_to_Main_Rpt_DSN is set to False.

- **Added DataSource command line argument for changing Server/Database targets for any type of data source**. See Changing Data Source (Server/Database).

- **Connect_To_SQLOLEDB is now faster when server is specified as alias**

- Previously, only **Microsoft Excel (2007-2010) Data Only** exports to .xls**x** files were handled using fast internal processing. Now, regular **Microsoft Excel (2007-2010)** exports to .xls**x** files also don't require Excel automation. A new component is used to handle the internal conversion from xls to xlsx (including merging tabs). This is faster and avoids the need for Excel to be installed. To disable this option, find and set the following ini file option:
  Use_Excel_Component_v3=False

- Added an option to **launch an application, and wait for it to finish, before previewing a report**. For detail, see *Launch an Application Before Report Runs*.

- **Added support for specifying custom calendars as start or end points relative to date constants**. For example, this allows you to return the start or end of a the fiscal month relative to yesterday’s date. For detail, see *Custom Calendars*.

- Added a **new YMD= data constant**. See detail in *Date Constants*. Examples:
  "Parm2:**YMD=+1/6/15**" --> June 15, 2018   "Parm2:YMD=+1/6/EOM" --> **June 30, 2018**

- Added options to **set date parameters to the first Day of Week before/after a date constant**. For example, the first Monday of the previous month. See *Adjusting Data Constants for Day of Week*.

- **Improved sizing and positioning of selective parameter refresh dialog**.

- **Linked parameter report dialogs now respond to pressing Enter as an OK button click** after initial load. This is useful in cases where the user wishes to accept the saved parameter value(s).

- **The Data Visualizer can now export the image or data set of any visualization to an image file or to an excel crosstab**. This can be initiated via clicking Ctrl-X or via the Fully Automated Exporting of Data Visualizations.

- The Data Visualizer now generates a backup layouts (dlvv) file each time a new version is saved. It also sends that backup file to the recycle bin.

- The toolbar icon ▦ to load the report data into an interactive data grid is now enabled by default. To disable it, set the **Disable_Data_Grid** option to ‘True’ in DataLink_Viewer.ini. The grid now loads the same data set as the Data Visualizer. For detail, see the user manual section of Data Grid.

Fixes

- Fixed parameter panel issue (not showing saved & reused date parameter values).

- Fixed a problem with interactive DSN change and a wrong password causing persistent failure to login even with good password.

- Fixed an issue causing ODBC DSN choice in one report to interfere with DSN choice for a later reload of the same report or a load of a different report.

- Fixed a problem causing hyperlinks to launch images/processes twice.

- Fixed a problem in saving a Visualization Layout Folder option.

- Fixed handling of blank/optional parameter value as a command line argument.

- Fixed an issue with automatic generation of ODBC DSNs on 32-bit machines.

- Fixed a problem with saving additional Data Visualization layouts (into .dlvv files).

- Improved error messages when a report connects to a data source, but fails to retrieve data.

- Fixed unnecessary exception (Error: 0) thrown when setting table location.

- Encrypted_Password_Set_Entry argument now operates without opening a window.

- Fixed a problem in handling special fields (e.g. Record Selection Formula) when loading data into the data grid or data visualizer.

Version 6.6.1001 [SP19]: Released February 27, 2017

- Packaged with Service Pack 19 of the Crystal Runtime.

- Images are now rendered and printed with higher resolution (avoiding jagged edges). To elect to use the old drawing mode, change the DataLink_Viewer.ini option of **Drawing_Mode** from '`HighQualityBicubic'` to '`Normal'.` When viewing a report, you can toggle between the 2 drawing modes by pressing the **F4** key. The **F1** key shows a help screen about keyboard shortcuts, and the text for F4 reflects current/new drawing modes.

- During Preview, **Ctrl-End** scrolls the report to the last page and **Ctrl-Home** scrolls to the first page.

- The Report Inspection window now captures not only expressions but also all instances of formulas, database fields, Text and other objects that are placed on the report canvas. A typical use scenario is to search for all reports that use a specific database field.

- Added a 3rd Report Inspection option for recursive search of all reports in a selected folder and all lower-level folders. See image.

- DataLink Viewer can now **translate text objects and column headers** in your reports. You specify the source and target languages, and the required Google API key (Google's Translate service costs $20 per 1 million translated characters) in the DataLink_Viewer.ini file. See detail in the ***Language Translation / Localization*** section. Or see video demo.

- When exporting a report for the first time, the export file name now defaults to the report file name. Note: for subsequent exports of the same report, DLV remembers the last used export file path & name.

- To automatically close html tooltip windows on events such as drill-down, paging, and parameter panel refresh, you can now set the following entry in the DataLink_Viewer.ini file:
```
[Options]
Close_HTML_Tooltips_On_Page_Events=True
```

- The **Always_Force_Login_If_In_DSN_Group** option now defaults to TRUE for new installations. When this option is set to TRUE, if the report requires no User ID & Password to login, you can ensure a **simplified DSN choice dialog** is used by adding the following entry to the same ini section:
```
Simple_Choice_If_In_DSN_Group=True
```

- Added special handling for proxy handling of calls from Visual CUT when the report has multiple data sources, and only some of those sources require password authentications, and Skip_Complex_Login_Logic is turned on.

- To allow paging through the report as soon as possible, the status bar no longer displays the total number of records selected / retrieved.

- DataLink Viewer 2011 now allows users to select among ODBC DSNs that target alternative databases within a single server. It can also automatically generate ODBC DSNs for databases within the same server that don't yet have ODBC DSNs. Typical use scenarios are cases where a single SQL Server manages multiple databases with common table structures. For example, one database for each Sage 100 (Master Builder) company. For detail, see ***Restricting ODBC DSN Choices (Databases within Server)***.

- When the option 'Override ODBC DSN Database' is turned off, DataLink Viewer now sets to 'True' the 'Use DSN Default Properties' property of ODBC connections within reports. This supports cases where the user elects to use a different data source.

- Added **Set_Font** command line argument to change the font in the report. For example, "Set_Font:Arial"

- The Group Tree panel is now hidden when previewing a report with no groups.

- You can now specify parameter values for the main report as well as for subreports using command line arguments that refer to parameter names. For example:
  ```
  … "Parm_[{?Start_Date}]:3/16/2010"
  … "Parm_[{? Date_Range}]:3/8/2010>>>3/26/2010>>>3"
  … "Parm_[{?@TopN}_{Sales.rpt}]:5"
  ```

- Added a Disable_Parameter_Panel_Button option to hide the Parameter Panel button in the viewer toolbar.

- Packaged with a newer version of the Chilkat component. Users who deploy both DataLink Viewer 2011 as well as my CUT Light .NET user function library (UFL) may need to update both to avoid different versions of the component.

- New installations of DataLink Viewer now set Enable_Integrated_Authentication (the option allowing DataLink Viewer to encrypt and reuse logins) to True by default.

- Added **HTML version of the user manual** from Shift-Click of User Manual button or: https://www.milletsoftware.com/DataLink_Viewer_User_Manual

- The report grid right-click menu option of 'Generate Command Line' now offers a window that generates a full command line, including all parameters or just date parameters, using the new naming convention (referring to parameter names).
  See demo image.

FIXES

- Fixed a problem with print command line arguments and number of copies.

- Fixed an issue with shifting the focus across multiple auto-refreshing reports.

- Fixed a problem when switching DSN for a report with a connection property of 'Use DSN Properties' set to False.

- Fixed an issue causing clicks on objects with http hyperlinks to be handled twice.

- Changed keyboard shortcut for Quick Print (to default printer) from Shift-P to Ctrl-Shift-P. This avoids false triggering when a user starts a parameter panel entry with upper P.

- Fixed a public key issue that blocked some installation scenarios.

- Fixed a problem with saving the ini setting for 'Password Fill On User ID Change'

- Fixed in-place drill-down issue when group values contained double/single quotes.

- Fixed a problem with regular .xls exports with saved options for fixed column width.

- Selective parameter refresh dialog now shows date parameters as dates rather than as date-time.

Version 6.5.1001 [SP15]: November 25, 2015

- Packaged with Service Pack 15 of the Crystal Runtime.

- DataLink Viewer now provides an **Expressions Inspector** for **listing & searching formulas, SQL expressions, running totals, selection formulas, and conditional formatting expressions**. The report grid right-click menu provides options to launch the Expressions Inspector **for one or multiple reports**. See 'Report Inspection & Documentation Tools, Expression Inspector' and this demo image.

- A click on the status bar panel showing the report name now provides a window (see demo image) with information about the report. For detail, see: ***Report Inspection & Documentation Tools***, ***Report Documentation***.

- Visual CUT can now delegate exporting to DataLink Viewer 2011 in order to take advantage of Crystal 2008/2011/2013 features (e.g. Calculated CrossTab members).

- The status bar now provides smoother updates during load, refresh, auto-refresh, and data visualizer events.

- Added **Print_As_Designer** ini file entry to the [Options] section and to the Export/Print tab of the Options dialog. By default, this option is now set to TRUE in order to use the same mechanism that Crystal Reports Designer uses to print. This solves printing issues caused by the prior Crystal runtime printing logic. For example, for one customer, this allowed printouts of UPC barcodes to scan properly.

- The Reload_Report_On_Refresh option now accommodates Auto-Refresh scenarios.

- The command line argument of **Printer_Setup** now supports specifying "Default" as the printer name.

- DataLink Viewer can now prompt & switch the report to a different Data Source when running reports that use UDL files as the OLE DB data source method. For detail, see: ***Changing Data Source in UDL Files***

- Use_Saved_Data command line argument now overrides the ini file option of Saved Data Action.

- When viewing the report grid, the help window triggered by **F1** shows that **Ctrl-Delete** removes rows or groups. Also, **Ctrl-Delete** provides a different confirmation dialog (allowing the user to abort) depending on whether the selected row is a group header or a detail row.

- When starting DataLink Viewer with a command line argument of "ODBC_DSN:.." but no report path or other arguments, the ODBC DSN argument now applies to all reports opened during that session (rather than just to the first report opened).
  This allows a desktop shortcut, for example, to launch DataLink Viewer with a DSN target specified for all reports opened during that session.

- HTML Tooltip windows are now automatically closed when you refresh or navigate away from the report preview window.

- When you trigger a report from a command line using a –v (View Only window), you can now use "ViewMode:**NoBarsNoTitle**" to remove not only the toolbar and status bar but also the title of the window in order to maximize the space available for the report.

- The application now loads faster when populating large report list grids.

- Implemented automatic hiding of group tree panel for reports without grouping.

- A double-click on editable cells in the report list grid (Title/Description, Subject, Type) now launches a preview of the report.

- Using the "Print_Copies:" argument. you can now set custom text on each print copy (such as 'Copy 1 of 2', 'Copy 2 of 2'). See 'Setting Custom Text for Each Print Copy' and this demo image.

- Added Export_Viz command line argument to save data visualization to an image. Combining this with Visual CUT allows embedding of visualizations in reports, email message bodies, **and auto-refreshing web dashboards**.

FIXES

- Packaged with Service Pack 15 of the Crystal Runtime. Fixes printing issues.

- Fixed install problem in older Windows platforms (XP, 2003)

- Fixed an issue with saved date parameter values.

- Fixed an issue with saved linked dynamic parameter value.

- Fixed issues with Grid search (Ctrl-F, F3, Shift-F3).

- Fixed issue with triggering a parameter dialog by clicking on a formula.

Version 6.4.1003 [SP12]: November 29, 2014

- Packaged with Service Pack 12 of the Crystal Runtime.

New Features

- Added special handling for **printing using custom paper size.** This involves targeting the custom paper size by saved name rather than by ID (which can be different across machines).

- Added **Printer_Setup** command line argument. This allows control of ***printer name*** and the ***Dissociate Formatting Page Size and Printer Page Size*** property. This argument is designed to address use scenarios where, during automated export, the page size and margins for a specified printer should be used.

- The Launch tab in the Options dialog now has a button called **'Encrypt & Save Password'**. It allows you to **centralize & protect passwords by avoiding specifying them directly inside command line argument**. Instead, you can name, encrypt and store the passwords inside DataLink_Viewer.ini. For detail, see "Referring to Saved Encrypted Passwords."

- A new **Encrypted_Password_Set_Entry** command line argument allows administrators to **automate the saving of Encrypted Passwords to targeted ini files**. For detail, see "Setting Encrypted Password Entries."

- Report Grid now has **drop-downs for the *Subject* and *Type* columns**.

- Report grid right-click menu now provides an **'Open Containing Folder'** and **'Generate Command Line'** options.

- The report list grid style is now managed in **ReportList.xml** file instead of **ReportList.grd**. This avoid conflict with incompatible ReportList.grd files from older versions of DataLink Viewer (8.5, 9, XI R2). The transition from the grd to the xml file occurs automatically.

- Added **Test_Connectivity_On_Refresh_Parameters** option to the DataLink_Viewer.ini [Options] section and to the Options dialog. For certain databases scenarios, you may set it to False to avoid that extra step.

- Added **Reload_Report_On_Refresh** option to the DataLink_Viewer.ini [Options] section and to the Options dialog. For certain databases scenarios, this **avoids database connection failure when refreshing a report**.

- You can now **change folder location for ACT! (*.pad) data source files**.
  See "Changing Folder Location for Access/Excel/Pervasive/Paradox/ACT! Files".

- **When auto-refreshing, a decrementing progress bar at the bottom of the page reflects the % of the refresh interval remaining until the next refresh. A click on that progress bar pauses/resumes the auto-refresh process.**

- **If a user is on a drill-down tab, auto-refresh is placed on hold**. When the user closes the drill-down tab or moves back to the main report tab, auto-refresh resumes.

- Added **Auto_Refresh_Use_Saved_Data** command line argument. This allows multiple users to quickly auto-refresh a report and reload its saved data, which is refreshed in the background through a scheduled export to a Crystal rpt format.
  You may specify parameter values as command line arguments in such a scenario if those parameters are not involved in fetching data.

- Added a user manual section about the **Use_Saved_Data** command line arguments.

- **ODBC DSN choice grid now also shows DSN Descriptions**.

- Added the option **Always_Force_Login_If_In_DSN_Group** to force selection of data sources. In such a case, if the data source uses Integrated Security (**NT Authentication** for SQL Server) then the login dialog displays only the ODBC DSN choice grid and allows selection via a double-click.

- You can now disable extra application exit processing (~ once per 12 cases, DLV moves ReportList.txt to the recycle bin and deletes temp files created by the Crystal runtime) by creating the following entry in the master DataLink_Viewer.ini [Options] section:
  `Disable_Exit_Processing=True`

- Added special handling for a **Citrix** scenario where **file redirects** might experience some network latency.

- Folder location options for files such as **DataLink_Viewer.ini** and **ReportList.txt** can now include **references to environment variables** (such as **%USERNAME%**). This is useful for **Citrix**/TS scenarios.

FIXES

- Fixed an issue with re-saving a data visualization layout under the same name.

- Fixed an issue with native (ADO) connections to Access/Excel.

- Fixed an issue with specifying a main report parameter via command line argument when the parameter is linked to a subreport stored procedure parameter.

- Fixed a report load delay when using saved data and Integrated Authentication is turned on.

- Improved error message for a rare report load failure.

- Fixed handling of optional text log file location.

- Fixed an issue with exporting from the report grid (right-click menu option).

- Fixed an issue with the button to reset integrated authentication information.

- Fixed handling of double quotes within "ParmN:…" command line arguments.

- Fixed an issue with storing the extra Folder location for dynamic parameter rpt files.

- Fixed an issue with command line printing when the report has zero records.

Version 6.3.1047 [SP7]: November 28, 2013

- **You can now schedule or trigger report exports (not just printouts) without user intervention.**

- This version supports the new features in Crystal 2011:
  - **Run .rptr (read only) Crystal reports**. You can also package **.rptr** files into **.rpz** files with expiration dates and/or license keys.
  - **Export Excel (Data Only) natively to .xlsx files**
  note: regular (not Data Only) excel exports to .xlsx still use custom conversion from xls to xlsx. This is because Crystal 2011 provides native export to xlsx only for
  Data Only exports.

- **Added Data Visualization functionality**.
  For detail, see '***Data Visualizer***'
  or watch a 25-minute video demo.

- Users can now click a new toolbar icon (or Ctrl-G) to launch a **Group Swap Expert**. This new dialog **allows changing (via drag-and-drop) the fields/formulas used to group the report or reordering the groups**. For example, instead of Grouping the report by Country, and within Country by City, you may Group the report by Product Type and within Product Type by Product. For detail, see '***Dynamic Grouping (Group Swap Expert)***' or watch video demo .

- **Users can now click a new toolbar icon to launch a Data Grid panel for ad-hoc grouping, sorting, totaling, filtering, and exporting of the report's data set**. To enable this, set the Disable_Data_Grid option to 'False' in DataLink_Viewer.ini.

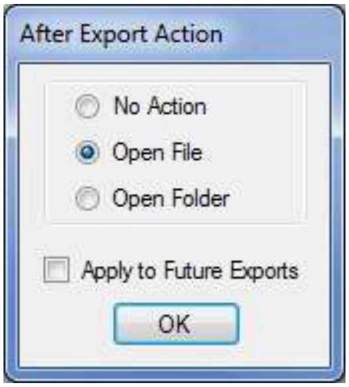
- **Users can now click a fields/formulas/objects and, if the report developer assigned an HTML tooltip for these objects, a window pops up and displays that content**. For a description of this functionality, see 'Click to Show HTML Tooltip'.
  A short video demo is also available.

- Added **Ctrl-C** to **copy the text** and **Ctrl-Shift-C** to **copy the tooltip text** of a clicked field in report preview. Since you can use a formula to control the content of a tooltip, this allows you to copy to the clipboard much more than just the displayed value of a field. For detail, and sample use scenario, see the user manual section on "***Copying Text Content from the Report***."

- Removed dependency on Visual Basic PowerPacks.In the 2008 version, exporting drill-downs in rpz files resulted in exporting the main report instead. In the 2011 version, this limitation is now removed.

- The Option dialog has a new ***Database*** tab for setting logon and connectivity options.

- The Options dialog has a new ***Export*** tab to control the After- Export action. You can elect to automatically open the exported file within its associated application, Open the folder in File Explorer, take no action, or Ask the user each time they export. The dialog for asking the user has a checkbox for adopting the selected choice and applying for all future exports (to avoid being asked again).



After Export Action

○ No Action
● Open File
○ Open Folder

☐ Apply to Future Exports

- Added a ‘Skip_Export_Format_Dialog’ option in DataLink_Viewer.ini. By changing this option to True, if the user selects an export format of CSV or Excel, and the report has saved export settings (in Crystal, File, Export, Report Export Options…), the dialog showing export format options would be skipped and the saved settings would be used.

- Installing on a machine with an older version (Service Pack) of the ***SAP Crystal Reports Runtime Engine for .NET Framework 4.0*** now automatically upgrades the runtime to the latest service pack. The user no longer needs to first manually uninstall the older service pack version.

- Double-clicking a section with a formula that launches a report now accepts wrapped text and doesn’t require double-clicking directly on the formula. If a section contains multiple launching formulas, the one that is directly double-clicked gets launched.

- Clicking on a formula can now set the value of another formula to either the name of the clicked formula (new option) or to the value of the clicked formula (old option). For more detail, see the user manual section on ‘Click to Set Formula Value.’

- If you embed **#{DLV_RPT_PATH}#** in the text of a launching (DLV_Run) formula, DataLink Viewer substitutes the path to the current report file for that token (allowing you to dynamically specify the folder where the calling report is).

- Fixed rendering of parameter refresh dialogs when user elects to set Display options to larger font sizes.

- Added support for **Date Constants** and **Number Constants** when specifying parameter values via command line arguments. For example, "Parm1:Start_Month_Minus_1" For detail, see the ‘Date Constants’ and ‘Number Constants’ sections in the user manual.

- Using a command line argument: "Ignore_Saved_Parameter_Values:[ALL]" you can run a report and get prompted for unspecified parameter values, skipping the saved parameter values dialog.

- DataLink Viewer now ignores a saved parameter value if that parameter is no longer used in the report.

- Improved handling of "Printer:Default" and "Printer:Dialog" arguments:
  a) the main window is minimized unless user interaction with login or parameter dialog is required, b) if the user cancels from a parameter dialog, the process closes without a warning message about missing parameter values, c) "Printer:Dialog" now closes automatically after printing.

- A configuration file is now available at
  C:\Program Files\Millet Software\DataLink Viewer 2011\DataLink_Viewer_2011.exe.config
  It allows users to set number of rows per parameter "page".

- The status bar at the bottom of the window shows how many records were selected out of the total number of records retrieved.

- Fixed a login issue with ODBC_DSN command line argument.

- Fixed an issue with Oracle_Server command line argument.

- Fixed data refresh issue. Also, when refreshing without changing parameters, the preview returns to the same page (if the new preview contains at least that number of pages).

- Logging DLV processing to an ODBC table can now handle database targets with limitations on number of characters in each field in a SQL statement. The new mode (using bind variables to pass potentially long strings capturing the parameter values and the report SQL) is enabled by setting the following entry in the [Options] section of DataLink_Viewer.ini:
  Log_ODBC_Type=Oracle

- **ODBC_DSN_From_To** now support **multiple pairs** separated by "||".
  This addresses use scenarios where a report uses multiple ODBC DSNs
  (e.g. when the main report DSN is not the same as subreports' DSNs).
  Also, you may now specify ODBC_DSN_From_To as a global entry in the [Options] section of DataLink_Viewer.ini.

- If you interactively switch between DSNs, Integrated Authentication functionality is now available by setting to **True** a new ini option of **Enable_Integrated_Authentication_For_DSN_Changes**. This is a rare scenario so, for more detail, contact Millet Software.

- **During forced login scenarios, Integrated Authentication now automatically sets the Password in the login dialog after the User ID is manually set.**

- When the rpt has saved data, **Preview Report (Force Login)** now always shows a login dialog (even if the default action for saved data is to simply display it).

- Fixed a problem with "Printer:…" command line argument.

- Online Version Update functionality was removed due to the component Update.exe being (mistakenly) flagged by virus protection software.

- When using the Options dialog to change the default location of ReportList.txt, if the target folder already contains a ReportList.txt file, the user can now elect to load that file into the grid or (upon exiting DataLink Viewer) overwrite the content of the file with the list of reports currently loaded into the grid.

- **Document2ini** command line argument now allows calling DataLink Viewer 2011 from another application and requesting that documentation about key file (DataLink_Viewer.ini, ReportList.txt) location as well as report parameters be written to a specified ini file.

- Added **`XML_Path_From_To`** `command` line argument, allowing users to override the stored path to XML files as data source for the report.

- **Database_Path_Selection** can now be specified via a command line argument.

- **Database_Path_Selection** can now be used for Paradox data sources by specifying just the path (not including the DB file name. For example, using a command line argument such as:
  `"Database_Path_Selection:C:\Old\>>c:\New\"`

- Fixed an issue with **Database_Path_Selection** when used to change the location of Excel files as a data source.

- Fixed in-place drill-down issue when the group value contains a single-quote.

- Fixed an issue with remembered parameter values when they end with hyphens.

- If an Excel or Access file data source is specified in the report via relative path, and the file exists in the same folder as the report, DataLink Viewer uses the file in the same folder as the data source.

- Paths to sample reports in the report list grid are now updated to
  C:\Program Files **(x86)**\...
  on first-time launch of DataLink Viewer 32-bit version on a 64-bit machine.

- Version Info and Options dialogs now always maintain their position in front of the main DataLink Viewer window.

- Improved the help screens triggered by function key F1.

- When the login dialog shows alternative ODBC DSNs to select from, if the machine has more than 9 DSNs, the dialog provides a search panel allowing you to enter text to search the list of DSN. This makes it more efficient to locate a particular DSN in a long list of DSNs.

- Added a DataLink_Viewer.ini option of **Skip_Complex_Login_Logic**. By default, this option is set to False. This allows DLV to have full control over the login process, change ODBC DSNs, servers, databases, and data source paths on the fly, and capture encrypted Integrated Authentication information.
  Setting this option to True solved a database connection failure for one user with an Oracle ODBC connection with tables that belong to different schemas.

- Added a DataLink_Viewer.ini option of **Report_Reload_Discards_Login_Info**. By default, this option is set to False. This allows you to run a report in DLV, change the rpt design in Crystal, Save, and reload the new rpt design in DLV without repeating the login process.

- Added logic to preserve qualifiers in table names for native Oracle connections.

- A new **Integrated_Authentication_Set_Entry** command line argument allows administrators to **set integrated authentication information for specified Windows User ID and Machine Name(s)**. For detail, see "Setting Integrated Authentication for Multiple Machines (Citrix Farm)."

- **A new Set_Formulas1 command line argument allows setting of formula expressions** (provided the formula name starts with a ^ character). For detail, see the user manual section on *Argument for Setting Formula Expressions*.

- **DateTime** parameter placed on the report layout now react to user clicks by providing a popup change dialog with Calendar and Time change controls In prior versions, this was possible only with Date parameters.

- Added a new option to DataLink_Viewer.ini [Options] section:
  Save_Screen_Space_By_Removing_Main_Report_Tab=True
  By default, this option is set to **True** and DLV saves screen space by removing the "Main Report" tab at the top of the Preview window. When a drill-down is initiated, DLV restores the tabs to allow navigation. This causes a brief flicker. If you wish to avoid this step, you can now set this option to **False**.

- **Ctrl-Shift-F1** now opens DataLink_Viewer.ini (configuration settings) in Notepad.

- When closing the application after an interactive session, the ReportList.txt file
  (1st tab report grid) is now transferred to the recycle bin approximately once per 10 times. This provides a copy of the file in case it gets erased during abnormal termination of a user session.

- **The report grid right-click menu provides options to increase/decrease font size**. The changes are saved and reused across sessions.

- Added a 64-bit version of DataLink Viewer 2011.