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Flex2Crystal™

The Future of Crystal Reports for VDF Users

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Introduction

Crystal Reports is a popular tool designing and rendering complex reports with applications. It is also a great tool for embedding reports within applications developed with various Windows based application development tools.

Crystal Reports has also long been the reporting tool of choice for Visual DataFlex developers for in-house corporate use as well for Independent Software Vendors (ISVs) for embedding reports into commercial application packages.

Reports created using the Crystal Report Designer are integrated into Visual DataFlex applications through the use of the Crystal Report Design Component (RDC) interface. The RDC is a COM component, which uses ActiveX controls to allow developers to run a report and dynamically control report settings.

In 2006, Business Objects (acquired by SAP in 2007), announced that the RDC interface would no longer be enhanced or delivered in any future Crystal Reports products. New versions of Crystal Reports would instead have a .NET interface. This decision pretty much signaled the demise of Crystal Reports as a reporting tool for Visual DataFlex users because DataFlex does not support working with .NET-based components. Even though new versions of Crystal Reports are being made available by SAP, Visual DataFlex users cannot use them.

This change in Crystal Reports left DataFlex developers with two significant business challenges: a) How to preserve their investment in existing report and not redesign their reports and b) Which tool to adopt as a replacement to Crystal Reports with the same feature set as Crystal Reports?

The Mertech Solution

To support Crystal Reports with Visual DataFlex first support .NET had to be built within DataFlex and then a compatibility layer had to be created to allow seamless integration of Crystal Reports with existing Visual DataFlex code.

The result is Flex2Crystal Flex2Crystal allows seamless integration of new Crystal Reports version with Visual DataFlex and allows developers to continue to use their existing reports with Crystal. In other words, Crystal Reports is no longer a dead end for DataFlex users!

Flex2Crystal Product Fact Sheet

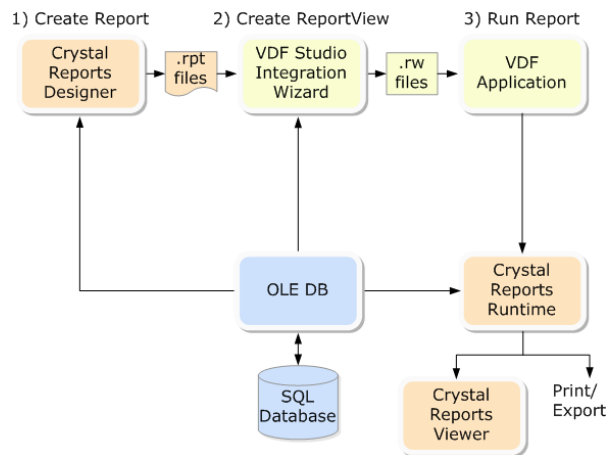
- Provides seamless integration with VDF applications and Studio
- Allows newer versions of Crystal Reports to be adopted without changing source code
- Is a cost effective way to protect investments in Crystal Reports
- Ensures support for new features as they are added to Crystal Reports
- Does not compromise on report launching or data fetching performance
- Supports VDF version 12 (the first version to use RDC) through the latest versions
- Is easy to install and distribute

Crystal Reports Interaction with Visual DataFlex

Three fundamental steps are required to add a Crystal Report to a VDF application. 1) A report (.rpt file) is created using the Crystal Reports Designer component. 2) The report is wrapped in a report view (.rw file) in the VDF Studio RDC Integration Wizard. 3) The report review is included in application source code, where it can be run and output to the selected device.

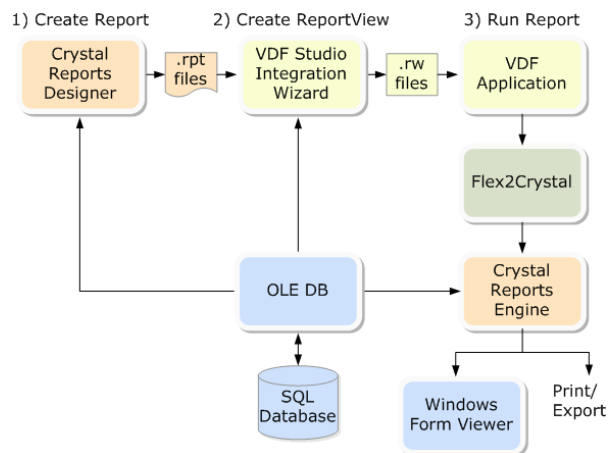
RDC (.COM) Environment

The entire RDC interface is imported into VDF as a Class library. The Integration Wizard associates the Crystal report file to a report object (based on the cCrystal class). The report object is placed inside a view object (based on the ReportView class). Methods inside the cCrystal class are used to define output options, set files and formulas, define the location of the database tables, and to run the report.



.NET Environment

The Flex2Crystal interface simulates the RDC interface by overriding the lowest level VDF Crystal classes and tying these into the COM Interop bridge. By replacing the low level classes, all of the abstraction that VDF provides in the classes above can be maintained without rewriting any code.



All functionality supported by the current Crystal Reports RDC interface and all new functionality introduced in Crystal Reports 2011 is supported by Flex2Crystal. New features added to future releases of Crystal Reports will also be available with Flex2Crystal.

Flex2Crystal works by replacing the exposed cCrystal .COM classes with .NET-aware cFlex2Crystal classes. All properties, events, methods, and helper functions accessible in cCrystal classes are accessible in the new cFlex2Crystal classes.

All that is required to upgrade your application so that it runs with the latest version of Crystal Reports is a simple search (for cCrystal) and replace (by cFlex2Crystal) operation.

Minimal Code Change

Transitioning to Flex2Crystal is simple and requires minimal change to existing code. A few simple search and replace operations in your report view (.rv) files are all that is required so that your existing reports run with newer versions of Crystal Reports. The following tables outline what packages have to be changed to run Flex2Crystal with your existing reports.

Replace	With
Use cCrystal.pkg	Use cFlex2Crystal.pkg
Use Crystal\CheckForCrystal.dg	Use CheckForFlex2Crystal.dg

Table 1 Packages to substitute

To use the new Flex2Crystal class definitions, replace all occurrences of cCrystal with cFlex2Crystal.

Replace	With
cCrystal	cFlex2Crystal
cCrystalAreas	cFlex2CrystalAreas

Table 2 Invoking the new classes

A Sample Migration

Code extracted from the OrdersByCustomer example is shown below. Changes required to make this code work with CrystalReports version 2011 are highlighted.

```

Use CheckForFlex2Crystal.dg
Use dfrptvw.pkg
Use dfRadio.pkg
Use Windows.pkg
Use c Flex2Crystal.pkg

Deferred_view Activate_oOrdersByCustomerCR for ;
;
Object oOrdersByCustomerCR is a ReportView
  Set Label to "Orders by Customer"
  Set Location to 2 23
  Set Size to 72 185
  Set piMinSize to 72 185

```

```

Object oRunButton is a Button
Set Label to "Run Report"
Set Size to 14 53
Set Location to 20 122
Set Default_State to True

Procedure OnClick
  Boolean bCrystalOK

  Get CheckCrystalEnvironment of oCheckForFlex2Crystal to bCrystalOK
  If (bCrystalOK) Begin
    Send RunReport of oCrystalReport1
  End
  Else Begin
    Send DisplayDialog of oCheckForFlex2Crystal
  End

End_Procedure

End_Object // oRunButton

```

```

Object oCrystalReport1 is a cFlex2Crystal

Procedure MakeSectionsInvisible integer eSectionType Integer iGroup
Handle hoReport
Handle hoAreas hoArea
Variant vAreas vArea
Integer iAreas iArea iKind

Get ReportObject to hoReport

Get Create of hoReport U_cFlex2CrystalAreas to hoAreas // areas collection
Get Create of hoReport U_cFlex2CrystalArea to hoArea // area object

```

Contact Information

If you would like to know more about Merteck's products, please visit our web site at www.mertechdata.com or contact us at

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