

Crystal Enterprise

Utilization of Crystal Queries, Dictionaries and Info Views

Overview

This white paper describes the functionality and requirements for publishing Crystal Reports that use Query, Dictionary or Info View files as a datasource in the Crystal Enterprise environment.

This paper describes how these files can be technically integrated into the CE 8.0 system. Because a complete QA test cycle has not been performed using Query (qry), Dictionaries (dc5) and Info View (civ) files in CE 8.0, their use in a CE 8.0 production system is not supported. For those customers wishing to test CE 8.0 using existing report assets that use any of these files, the methods below will allow for functional testing of CE 8.0 without rebuilding or modifying existing reports.

Crystal Enterprise 8 does not use Info Views to implement column or row security. However, Info View files can be converted to Dictionary Files so that the “dictionary” qualities of Info View files can be utilized in the Crystal Enterprise environment. For this reason, the bulk of this paper will refer only to Query and Dictionary files. The section [converting an Info View \(.CIV\) File to a Dictionary \(.DC5\) File](#) will explain how to convert an Info View to a Dictionary.

A typical scenario is outlined in which a report would be developed and published to an Enterprise environment using Crystal Queries or Dictionaries as a reporting datasource.

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Introduction

A Crystal Report that uses either a dictionary or query file as a datasource can be easily published within the Crystal Enterprise environment. The use of a query file would be applicable in this environment only as a SQL substitution method, allowing for the creation of more complex SQL.

In Seagate Info, it was possible to publish a standalone query file (.QRY) and schedule it independently of a Crystal Report (the query would process and create a new query instance with saved data). This is not possible in version 8 of Crystal Enterprise. Any report that is processed either by viewing or scheduling will utilize the query file only for the purposes of retrieving a SQL statement. The value of a query file in this environment is the ability to easily create and test simple to complex SQL statements and to use as one central datasource that one or more reports can connect.

Publishing Reports that are based on .QRY and .DCT/.DC5 files

There are three methods for publishing a Crystal Report to the Crystal Enterprise environment:

1. Crystal Publishing Wizard
2. Crystal Import Wizard
3. Crystal Report Designer (File/Save As/Enterprise Folders)

This document is limited to specifically describing the use of the “Crystal Publishing Wizard” when publishing. However, the basic requirements described below also apply to use of the Crystal Import Wizard and publishing from the Crystal Report Designer.

When using the Crystal Enterprise “Crystal Publishing Wizard” utility to publish a report based on either a query or dictionary file, no special steps need to be taken within the wizard. Publish the report using the same methods as any other report.

Any servers (Crystal Page Server or Crystal Report Job Server) that might be called upon to process a Crystal Report based on a query or dictionary data source must have access to the essential connectivity software, configurations, and access rights to the query or dictionary file.

Basic requirements:

1. Crystal Reports 8.X must be installed on same machine as Crystal Page or Report Job Server/s.
2. Crystal Page and Report Job Servers must have a properly configured database datasource (query file's datasource) as well as the database client software.
3. Crystal Page and Report Job Servers must run under an account that has sufficient rights to access the query or dictionary file.

CAUTION	<p>Because the Crystal Report can run successfully without accessing the query file (due to the report having an embedded definition of the query), it is necessary that the Page or Report Server can access the query file. If the query file cannot be accessed, possible modifications to the query file will not be utilized during processing and successful report instance will not contain data reflecting modified SQL.</p> <p>For example: A scheduled report looks first for the query file in its original path. If the query file can be accessed, all modifications (e.g. changes in the WHERE clause) will be detected and the report will process, reflecting the latest version of the query file. If a report cannot access its query file, then the report will process using the embedded definition of the query file.</p>
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Development and Publishing Scenario

1. A developer designs a report using a Crystal Query file (.QRY) or a Crystal Dictionary file (.DCT or .DC5) as a datasource. The query or dictionary file is located either locally on the developer's machine or externally on a File Server.
2. The report is tested locally on the Developer's workstation until it is ready for publishing.
3. The finished report template (.RPT file) is published to the Crystal Enterprise environment using the "Crystal Publishing Wizard".
4. The "Crystal Publishing Wizard" creates a copy of the new report in the Crystal Enterprise "FileStore" windows directory, assigning it a unique generic name. (E.g. 1911d76f2ffa00.rpt)
5. If the report was designed pointing to a local copy of the query or dictionary file, the developer must ensure that a copy of the query or dictionary file is placed in the relative path on the Crystal Page or Job servers. If a UNC path is used ([see below](#)), then it must be ensured that the Crystal Page Server and Report Job Server services run under a Domain/User account that has rights to access the network share and file.
6. The report is now published and ready to be scheduled and viewed from within the Crystal Enterprise environment.

Requirements (Local Path to File)

A local directory path to the location of the query or dictionary file is embedded in the report file.

Example:

1. On a developer's workstation a report named Sales.rpt is created from a .QRY file located locally on the workstation at C:\Query Files\Sales.qry.
2. The report is published to Crystal Enterprise using the Crystal Publishing Wizard.
3. A randomly named copy of the original Sales.rpt template is created by the Crystal Publishing Wizard and now resides in:
C:\Program Files\Seagate Software\Enterprise\FileStore\Input\17\117\1911d76f2ffa00.rpt
4. When the report is scheduled the Page Server or Report Server will decompress 1911d76f2ffa00.rpt and will try to locally access C:\Reports\Query Files\Sales.qry. If the Sales.qry file is found and opened, the properties of Sales.qry will be used when processing the report. If the Page or Report server cannot access the Sales.qry file, 1911d76f2ffa00.rpt will be processed using the embedded definition of the Sales.qry instead.

Requirements (UNC Path to File)

A UNC path to the location of the query or dictionary file is embedded in the report file.

Example:

1. On a developer's workstation, a report named Sales.rpt is created from a .QRY file located on a File Server at a UNC path [\\FileServer\Query Files\Sales.qry](#) or using a UNC path to the local machine.
2. The report is published to Crystal Enterprise using the Crystal Publishing Wizard.
3. A randomly named copy of the original Sales.rpt template is created by the Crystal Publishing Wizard and now resides in:

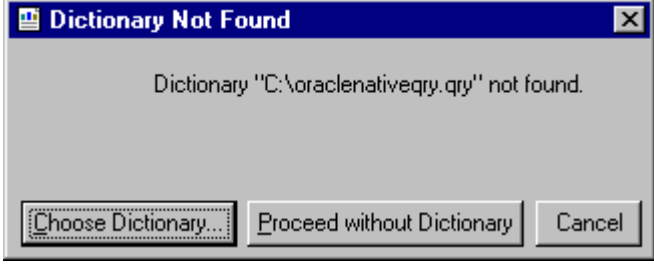
C:\Program Files\Seagate Software\Enterprise\FileStore\Input\17\117\1911d76f2ffa00.rpt

4. When the report is scheduled the Page Server or Report Server will decompress 1911d76f2ffa00.rpt and will try to access the UNC path at \\FileServer\Query Files\Sales.qry. If the Sales.qry file is found and opened, the properties of Sales.qry will be used when processing the report. If the Page or Report server cannot access the Sales.qry file, 1911d76f2ffa00.rpt will be processed using the embedded definition of the Sales.qry instead. Crystal Page Server and Report Job Server services must run under a Domain/User account that has rights to access the network share and file.

Modifying or updating a published report based on a query or dictionary data source

If a query or dictionary file is modified, any report that uses the file should be refreshed in order to allow the report to "embed" the new definition. This can be accomplished by opening up the report in the Crystal Report Designer, accepting detected changes and/or "verifying the database" and then saving the report.

1. In Crystal Report Designer select File/Open/Enterprise Folders
2. Connect to APS dialog appears. Logon to Enterprise System.
3. Select Report to be updated and then once opened select from the menu Database/Verify Database. This will force the report to verify that the internal query definition matches the external query file. If there are any differences there will be a prompt showing what has changed and if it is ok to update the report.

NOTE	<p>If the report cannot locate the query or dictionary file upon being opened a message box will be presented:</p>  <p>Selecting "Choose Dictionary..." will allow for finding or "setting the location" of the query or dictionary file. Selecting "Proceed without Dictionary" will cause the report to open using its internal or embedded definition of the query or dictionary file.</p>
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4. Once the database (query or dictionary datasource) has been verified, save the report to the Enterprise system. Save As/Enterprise Folders/ReportName.rpt.

Depending on the type of modifications to the query or dictionary files, the above steps might not be necessary, but probably should be done anyway as a regular procedure. For example, a report will process and retrieve data that reflects a change to the WHERE clause in a query file's SQL statement (providing that the report has access to query file) without the need for modification of the report in the Crystal Report Designer. However, if the SELECT or FROM statements are modified, the report's structure will need to be changed. This can only be done at design time in the Crystal Report Designer by verifying the database and proceeding to fix up the report.

Converting an Info View (.CIV) File to a Dictionary (.DC5) File

An Info View may be configured with Row Security and/or Column security. Crystal Enterprise 8 does not include Row or Column security via Info Views; however, Info Views created in a Seagate Info environment can be converted for use in Crystal Enterprise 8.

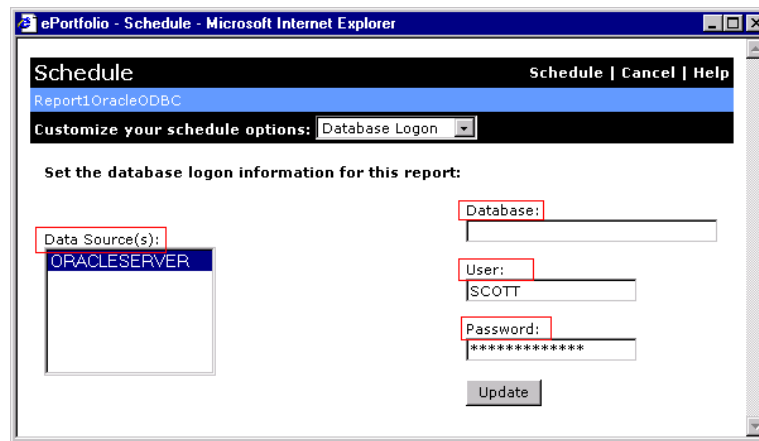
If an Info View contains active Row or Column security configurations, then these references must be removed in order for the file to be used in the Enterprise system. When security references are removed from an Info View, it technically becomes no different than a Dictionary file. Info Views are essentially dictionaries with row or column security. The ability to convert an Info View to a Dictionary file allows the leveraging of existing Dictionary design qualities contained in Info Views, to be used in the Enterprise system.

To convert an Info View to a Dictionary:

1. Open the Info View in the Info View designer and then remove any row or column security references. Save the changes and close the Info View designer.
2. Rename the Info View file from **XXXX.CIV** to **XXXX.DC5**

Appendix A – Query and Dictionary test results in Enterprise

The screenshot below shows the Database Logon information in the Schedule form within ePortfolio. Note that the four labels (outlined in red) correspond with the four gray columns in the matrix below. The matrix shows the report types tested using query, dictionary and converted Info View files as a datasource. Reports were either viewed or scheduled using a combination of different environments including ODBC and Native Database connections, Page Server and Report Job Server running under an NT User Account or a System Account.



Report Data source	Data Base	Driver	ODBC	Database	Drivers	Result of On-Demand Viewing (Page Server)	Result of Schedule (Report Job Server)				
			Data Source(s):	Database:	User:		Password	NT User Acct	System Acct	NT User Acct	System Acct
QRY*	Access	Access ODBC Driver	ODBC DSN Name	C:\extreme.mdb	admin	Null	Success	Success	Success	Success	
DC5*	Access	Access ODBC Driver	ODBC DSN Name	C:\extreme.mdb	admin	Null	Success	Success	Success	Success	
QRY*	SQL Server	ODBC Sqlsrv32.dll	ODBC DSN Name	SQL Server Database Name	sa	sa	Success	Success	Success	Success	
DC5*	SQL Server	ODBC Sqlsrv32.dll	ODBC DSN Name	SQL Server Database Name	sa	sa	Success	Success	Success	Success	
QRY*	Oracle	Oracle ODBC Driver	ODBC DSN Name	Null	scott	tiger	Success	Success	Success	Success	
DC5*	Oracle	Oracle ODBC Driver	ODBC DSN Name	Null	scott	tiger	Success	Success	Success	Success	
CIV converted to DC5*	SQL Server	ODBC Sqlsrv32.dll	ODBC DSN Name	SQL Server Database Name	sa	sa	Success	Success	Success	Success	

Report Data source	Data Base	Driver	Native	Database	Drivers		Result of On-Demand Viewing (Page Server)		Result of Schedule (Report Job Server)	
			Data Source(s)	Database	User:	Password	NT User Acct	System Acct	NT User Acct	System Acct
DC5*	Access	MS DAO	N/A	N/A	N/A	N/A	Success	Success	Success	Success
QRY*	SQL Server	Native P2ssql.dll	SQL Server Name	SQL Server Database Name	sa	sa	Success	Success	Success	Success
DC5*	SQL Server	Native P2ssql.dll	SQL Server Name	SQL Server Database Name	sa	sa	Success	Success	Success	Success
QRY*	Oracle	Native P2sora7.dll	Oracle Service Name	Null	scott	tiger	Success	Success	Success	Success
DC5*	Oracle	Native P2sora7.dll	Oracle Service Name	Null	scott	tiger	Success	Success	Success	Success
CIV converted to DC5*	SQL Server	Native P2ssql.dll	SQL Server Name	SQL Server Database Name	sa	sa	Success	Success	Success	Success

*QRY or DC5 files do not have to be accessible by report file for report to be successfully scheduled or viewed.

Getting More Information

For more information, please review the following documentation or contact Technical Support.

Product Documentation

Available in printed documentation or in electronic format on the Crystal Enterprise/Crystal Reports CD and on the Online Store at: <http://store.crystaldecisions.com/>

- Crystal Reports User's Guide
- Crystal Enterprise Administrator's Guide

Contacting Crystal Decisions for Technical Support

We recommend that you refer to the product documentation and that you visit our Technical Support web site for more resources.

Self-serve Support:

<http://support.crystaldecisions.com/>

Email Support:

<http://support.crystaldecisions.com/support/answers.asp>

Telephone Support:

<http://www.crystaldecisions.com/contact/support.asp>

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