

CRC External ViewReport For BusinessObjects Enterprise From CRC Business Solutions, Inc. Product Data Sheet

About CRC External ViewReport

CRC External ViewReport for BusinessObjects Enterprise allows users to view previously processed Crystal Reports through any web server using HTTP. Because the users request report viewing using a web page, users can view the latest successful instance of a report without any direct interaction with the BusinessObjects Enterprise system. CRC External ViewReport also captures request history and comes with administration tools to help monitor usage.

Benefits of CRC External ViewReport

Ease of Integration

Any user on a web server using HTTP can request a BusinessObjects Enterprise report by referencing the CRC External ViewReport Crystal Server Page. In practice, the request is typically embedded in a web application that is external to the BusinessObjects Enterprise system. When this CSP receives the request, it locates the latest successful instance of the report within the Enterprise system. Then, it determines the requested viewer and sends the report to that viewer for the user.

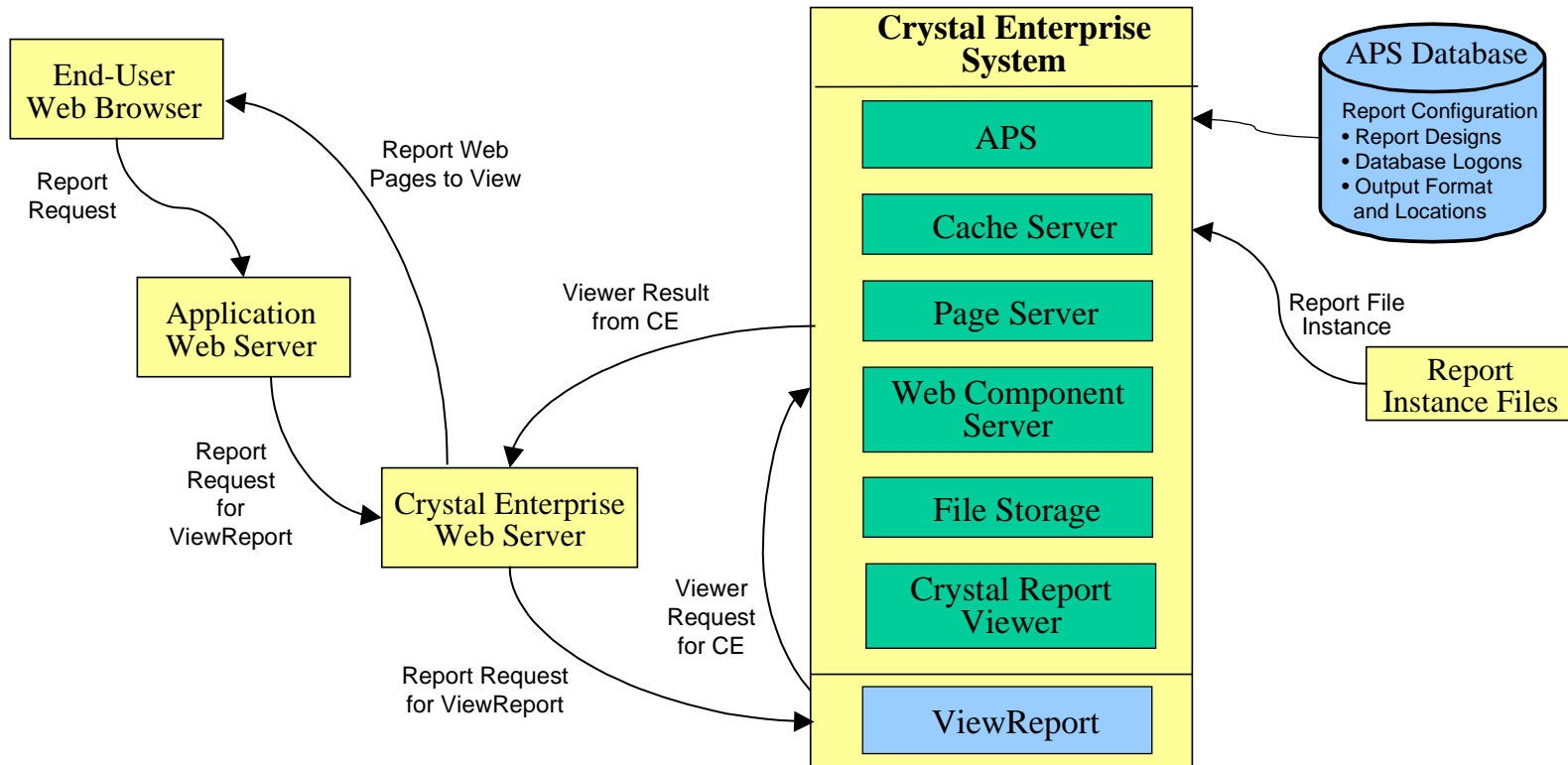
The HTTP interface approach eliminates cross-platform and cross-application integration requirements. Any web application can integrate Crystal Report viewing using the BusinessObjects Enterprise services through a simple URL request without requiring other software to be installed.

Enterprise Class Quality

As an independently managed interface to the BusinessObjects Enterprise system, CRC External ViewReport has these “Enterprise Class” qualities:

Simple Interface	An HTTP interface is the most accessible web based communication within a networked enterprise.
Views Report Instances	ViewReport uses BusinessObjects Enterprise technology to view previously processed report results.
High Availability	CRC External ViewReport is designed for data center reliability, availability, and robustness so that its availability is near continuous.
Real-time Request Processing	CRC External ViewReport processes requests for immediate viewing in the requesting user’s web browser
Cross Platform Support	The HTTP interface approach requires only that a requesting application be capable of making a URL request.
Error Messages	Any error messages resulting from a failed report request are available in the resulting web page and the web based administration tool.
Diagnose at Interface Point	Each request record can be examined directly or through the web administration tools to diagnose request problems.
Server Friendly	CRC External ViewReport logs on to BusinessObjects Enterprise, requests the report’s latest successful instance, then logs off for immediate release of the connection.
Network Friendly	The Crystal Report Viewer uses page on demand technology to view reports one page at a time in a web browser.
Web Based Administration and Monitoring	Web based administration, through Crystal Server Pages, provides authorized access from any web browser within the enterprise.

The CRC ViewReport System Diagram



When an end-user selects an action to view a report instance within the web application, the local application's web server receives the request. The request is relayed to the BusinessObjects Enterprise web server, specifying the report to view. The Enterprise web server processes the ViewReport web page. From the request information, ViewReport locates the latest successful instance of the report stored in the BusinessObjects Enterprise system. ViewReport then forms a request for the Crystal Report Viewer. The Crystal Report Viewer then works with the BusinessObjects Enterprise system to retrieve the report instance and format the report for viewing. When complete, the viewer result is sent to the Enterprise web server, which displays the report instance in the end-user's browser.

The CRC ViewReport Process

The report request processing cycle involves an interplay of the Requesting Application, CRC External ViewReport, and BusinessObjects Enterprise as follows:

User Web Browser	Application Web Server	Enterprise Web Server	CRC ViewReport	BusinessObjects Enterprise
Click on link or submit form to view a report				
	Receive request and forward request in the form of a browser URL request or submitted form to Enterprise Web Server			
		Receive request and transfer to "ViewReport.csp"		
			Receive the request to view the report	
			Log on to BusinessObjects Enterprise	
			Locate named folder for requested report	
			Locate the requested report within the requested folder	
			Resolve any shortcuts to requested report target	
			Locate the latest successful instance of the report	
			Write the request history to the ViewReport Request History table in the ViewReport Administrator database	
			Request Enterprise to run the Crystal Report Viewer to view the report instance	
				Open the Crystal Report Viewer and transfer the report instance request
				Retrieve the report instance from BusinessObjects Enterprise
				Send formatted report pages to Enterprise Web Server
		Send report web pages to User Web Browser		
View requested report instance				

The Report Request History Table

ViewReport's request history is recorded using the record format below:

Field	Data Type	Contents
Sequence_ID	AutoNumber	Auto-generated primary key for record uniqueness
Request_DateTime	Date/Time	Date / time of report processing
Requestor_System	Text (50)	Identification of system that created the report request
Requestor_User	Text (50)	Identification of user that created the report request
Request_Report	Text (250)	Request.QueryString ("rptname")
Request_Type	Text (5)	'WEB'
Report_Folder	Text (100)	Name of report folder in CMS ("rptfolder")
Report_Name	Text (100)	Name of report processed in CMS
Report_Params	Text (250)	Report processing parameters 'ParamString'
Request_Status_Code	Number	Request status: 1 = Success, <neg> = error code
Request_Status_Text	Text (140)	Description for request status "Processed...", "Error: xxx"
QueryString	Text (250)	Request Server Variables("QUERY_STRING") (250)
User_Address	Text (15)	Request Server Variables("REMOTE_ADDR") ('123.123.123.123')
APS_Name	Text (25)	Name of CMS used for report processing
WCS_Name	Text (25)	Name of WCS used for report processing
RequestURL	Text (250)	Crystal Viewer Request URL
Request_Referrer	Text (250)	Referrer Web Page URL
CE_Report_SID	Text (10)	BusinessObjects Enterprise System ID for the on-demand report

Supported BusinessObjects Enterprise ViewReport Options

Report Request Arguments

ViewReport supports named request arguments via URL QueryString arguments or via named fields in web page forms.

Argument	Content
rptname	HTML encoded name of the report to run on-demand
rptfolder	HTML encoded name of the folder containing the report (optional)
rptuser	Name of viewing user on the external system (optional)
rptsystem	Name of external system requesting the report (optional)
viewer	Name of the Crystal Report viewer for viewing the report (optional) Active-X
debug	"Y" to set debug mode to display request processing (implemented as a checkbox in a form)

Form fields may be used instead of QueryString Arguments, with form fields having priority. Field names are identical to the QueryString Arguments. All fields are "text" or "hidden", except the "debug" field is a "checkbox".

Report Viewer Options

CRC External ViewReport supports these Crystal Report Viewer options:

ViewReport Argument	Crystal Report Viewer
ACTIVE-X	Active-X
HTML	DHTML
JAVA	Java Viewer (J2EE VM)
JAVA_PLUGIN	Java Plug-in
EXPORT	Export (text format)

ViewReport Request Examples

The following are examples of ViewReport requests for Enterprise Web Server “crc2400”:

ViewReport Request URL
http://crc2400/businessobjects/External_Requests/ ViewReport.csp? rptname=Product%20Catalog%20With%20Ranges
http://crc2400/businessobjects/External_Requests/ ViewReport.csp? rptname=ProductCatalog
http://crc2400/businessobjects/External_Requests/ ViewReport.csp? rptname=World%20Sales%20Report&viewer=HTML

Request History Report Request Status

For each received request , ViewReport records a status code and status message in the Request History table.

Status Code	Status Message
1	<report output format> viewed
-1001	A report name was not specified
-1002	Couldn't create SessionManager
-1003	Unable to log on to <CMS> as <UserID>
-1003	Unable to log on to <CMS> via token
-1004	Unable to query <ReportsFolderName> folder
-1005	Unable to find <ReportsFolderName> folder
-1006	More than one folder named <ReportsFolderName>
-1007	Unable to find report <report name>
-1008	Unable to resolve shortcut <report name>
-1009	Unable to query latest successful instance for '<report name>'
-1010	Unable to find latest successful instance for '<report name>'

The “Request_Status_Code” field of the Request History table can be used for record selection. For example, any value less than 0 indicates an error condition for the request processing.


ViewReport Administration

Web Based Administration

Administrator tools are provided to monitor request processing and to view report request details. The tools are implemented as Crystal Server Pages for access from any web browser. Tool users must be a member of an administration group authorized in BusinessObjects Enterprise.

ViewReport Requests - Microsoft Internet Explorer

File Edit View Favorites Tools Help


Crystal Production Support

CE View Report Requests via CRCW2KM

Report Requests -- 7/9/2004 3:37:03 PM

Refresh Show RunReport Requests Logoff!

Request Status: All Day Span: 1 Row Limit: 10 Run Query

All Requests
After 7/8/2004 3:37 PM

Request ID	Request Date/Time	Report	Status
816	7/9/2004 12:59 PM	World Sales Report PDF	Pdf viewed (debug mode)
815	7/9/2004 12:58 PM	World Sales Report	Report viewed (debug mode)
814	7/9/2004 12:57 PM	World Sales Report PDF	Pdf viewed
813	7/9/2004 12:57 PM	World Sales Report	Report viewed
812	7/8/2004 11:29 PM	World Sales Report	Report viewed
811	7/8/2004 11:29 PM	World Sales Report	Pdf viewed
810	7/8/2004 11:29 PM	World Sales Report PDF	Pdf viewed
809	7/8/2004 11:29 PM	Consolidated Income Statement	Report viewed
808	7/8/2004 11:29 PM	Consolidated Income Statement	Txt viewed
807	7/8/2004 9:35 PM	ProductCatalog	Report viewed

10 Requests shown of 20 available
Request Table is 'ViewReport_History' in DSN 'CE_External_Request_History'

Done Local intranet

Requests can be selected by status of “All”, “Completed”, and “Failed”. Day Span ranges from 1 to 90 days, and Row Limit ranges from 5 to 500 rows.

Each ViewReport request is supported by details in the request history database.

ViewReport Request Detail	
Request_ID	613
Request_Status_Code	1
Request_Status_Text	Report viewed
Requestor_System	defSystem
Requestor_User	defUser
Processing_DateTime	7/9/2004 12:57:47 PM
Request_Type	Web
Report_Folder	External Web Reports - View Latest
Report_Name	World Sales Report
QueryString	
User_Address	127.0.0.1
APS_Name	CRCW2KM
WCS_Name	CRCW2KM.WCS
RequestURL	viewrpt.cwr? id=2817&apstoken=CRCW2KM@4221JSZxKKOhn4p1C5LC4220JnBiHp8sCsmvUuqC&init=actx&prc
Referrer	http://crcw2km/crystal/External_Requests/External_Request_Tests/ViewReportHelper.htm
CE_Report_SID	2817

[Show Processing Details for 2817](#)
[View Report 2817](#)

ViewReport Configuration

ViewReport is configured for its run time environment by editing the “CSP Configuration.inc” file within its directory. Items include: default values for the report’s containing folder name, the default viewer, default requesting user name, default requesting system name, and the External Request History DSN for ODBC and the table name. A single configuration file is used for ViewReport and ViewReportAdmin.

ViewReport Security

As an interface for external applications to view reports from the BusinessObjects Enterprise system, ViewReport has a trusted relationship to its caller. The requesting web application must provide the appropriate menus, page context, and viewing links authorized for its authenticated users.

ViewReport supports security audits by recording the Requestor System, Requestor User, and web page referrer in ViewReport’s Request History database.

Viewing Window in the End-User’s Browser

The requested report is viewed using the Crystal Report Viewer (or the appropriate viewer plug-in for other formats such as Excel or Acrobat). The viewer opens within the referring web page. Consequently, to view a Crystal Report in a separate web page window, the requesting application must open a new window and refer to ViewReport.csp from within the new window.

The “ViewReportTest.htm” sample web page demonstrates viewing a report within the requesting window. The “ViewReportTestForm.htm” sample web page demonstrates viewing a report within a new window.

ViewReport Technology

BusinessObjects Enterprise Interface Executable

“CRC_ViewReport” is implemented as a set of Crystal Server Pages (“CSP”); as such, the BusinessObjects Enterprise Web Server Adapter is used during execution. The executable web pages may be located on any server with access to the BusinessObjects Enterprise system via the Enterprise Framework (CORBA) and to the Report Request History Database via a database client through ODBC.

BusinessObjects Enterprise Framework

All communication with the BusinessObjects Enterprise system uses the BusinessObjects Enterprise Framework using the interface supported by Business Objects using Crystal Server Pages and the Web Server Adapter.

BusinessObjects Enterprise Connection Optimization

ViewReport uses previous BusinessObjects Enterprise connection information for each user’s browser when logging on to the BusinessObjects Enterprise system to view a report instance. As a result, only one connection is maintained per user when multiple reports or successive reports are viewed, and the number of server connections is minimized.

BusinessObjects Enterprise Version Compatibility

CRC ViewReport is compatible with Crystal Enterprise versions 8.5, 9.0, and 10.0 and BusinessObjects Enterprise XI and XI R2.

Database Connectivity

For the Administrative database containing the Report Request History, CRC ViewReport connects to any enterprise database system supporting ODBC and Active Data Objects. Implemented databases include MS Access, SQL Server, Oracle 9, and UDB. The ODBC connection uses a System DSN defined in the “CSP Configuration.inc” file within its directory and the “Admin” subdirectory.

ViewReport Test Web Applications

ViewReport is supplied with a complete web application that demonstrates using the external interface to view the latest instances of BusinessObjects Enterprise reports.

Web Page	Purpose
External_Request_Tests.htm	The default web page for the “External_Request_Tests” directory, with links to “ViewReportTest.htm” and “ViewReportTestForm.htm”
ViewReportTest.htm	Sample web page demonstrating report requests through URL links
ViewReportTestForm.htm	Sample web page demonstrating report requests through Forms
ViewReportHelper.htm	Sample web page opened by “ViewReportTestForm.htm” to demonstrate running and viewing a report in a new window

As provided, the test web applications are configured to refer to the BusinessObjects Enterprise web server on “localhost”. The “About External_Request_Tests.txt” file documents configuring the test web applications to run on other web servers that refer to the BusinessObjects Enterprise web server by name.

Licensing

CRC External ViewReport and CRC External ViewReport Administrator are licensed per BusinessObjects Enterprise CMS Cluster. CRC External ViewReport and CRC External ViewReport Administrator are owned and copyrighted © 2004 by CRC Business Solutions, Inc.; source code is provided to licensees.

Use of these products is subject to BusinessObjects Enterprise licensing from Business Objects.

Contact Information

CRC External ViewReport and CRC External ViewReport are available from CRC Business Solutions, Inc., a Business Objects Professional Services Partner.

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Information about other BusinessObjects Enterprise integration products from CRC Business Solutions, Inc. is available at <http://www.crsolutions.com>.

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