

Crystal Enterprise 8

Tactical Guide to Understanding and Installing Crystal Web Reporting

Overview

This document is written for first time users and those who are upgrading from Crystal Reports 8.0. This Technical Brief provides practical information on understanding web reporting using both Crystal Enterprise and Crystal Reports Developer Edition. This document will assist you in:

- deciding what Crystal Decisions tools will meet your needs for publishing reports to the web.
- finding useful articles and documents for setting up the system.

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Introduction

This document provides practical steps on getting familiar with Crystal Enterprise 8.0, including understanding what it can do for you, installing, and getting familiar with the components. Crystal Reports 8.5 also provides web functionality and this is discussed too so you are aware of all options.

The goal of this document is to assist you in gaining a good understanding of Crystal's web reporting capabilities quickly.

A Word on Versions

Crystal Reports version 8.0 was released in early 2000. In early 2001, a new product named Crystal Enterprise version 8.0 was released in conjunction with Crystal Reports version 8.5. The important thing to remember is that Crystal Enterprise 8.0 and Crystal Reports 8.5 are contemporaries and made to be used together. It's not recommended, therefore, to install Crystal Reports 8.0 and Crystal Enterprise 8.0 on the same machine.

Correct Registration Helps You

All copies of Crystal Reports version 8.5 include a free copy of Crystal Enterprise 8.0. Because these are separate products, they must be registered separately and will have distinct registration numbers. It's important you register them both (browse to <http://www.crystaldecisions.com/register/content.asp>). When you call or email for technical support the correct registration number will ensure that you are routed to the group trained to help with that product line.

Our Support Site

Go to <http://support.crystaldecisions.com> and you will see the links that will take you to the knowledgebase articles and technical briefs search engines. This document will point you to various helpful articles and documents on our site.

There are a couple of excellent knowledgebase articles, [C2001495](#) and [C2001322](#) that are indexes to web-related content – be sure to check them out.

Three Ways to Send Reports over the Web

Crystal Enterprise offers 2 ways to run reports over the web; "Managed" and "Unmanaged" reports. With Crystal Reports it is possible to run reports using the ASP (Active Server Pages) Reports Server (ASP applications using the Report Design Component). We'll outline how each of these methods work, their advantages, and their disadvantages so that you can decide the method that is best for you.

ASP Reports Server Method

Crystal Reports 8.0 introduced a new engine for creating and running reports called the Report Design Component (RDC). The DLL for the RDC is Craxdrt.dll, which can be used with Visual Basic, Active Server Pages (ASP) and other languages. This functionality is available for web reporting in Crystal Reports version 8.5 Developer Edition (Note this is installed from the Crystal Reports 8.5 CD not the Crystal Enterprise 8.0 CD).

This is a very powerful way of running reports to send over the web. In ASP pages using VBScript or JavaScript code you can run, export, and view reports over the web.

ASP gives you a high degree of control over the report. It's fairly easy to do things like change the report's database location, the SQL select statement, and the record selection formula using the RDC object model.

With the ASP method, you can bring data into a report using ActiveX Data Objects (ADO). Any data source that you can connect to and create a record set from using ASP script can be used in a Crystal Report and viewed over the web.

You can also create and alter reports using the ASP method (additional licensing is required if you are creating reports – see your sales representative for more information.)

The disadvantage of the ASP method is that, because you are writing script, there is a learning curve involved. Essentially you are writing an application to run your report and send it over the web, and if the report changes, you may have to adjust your program.

If you are interested in using the ASP method you should definitely download and study the script samples in file ASPXMPS85.EXE (available from our [Support Site Files and Updates area](#) by searching for the file name). Most developers using this method base their web applications on these samples.

Unmanaged Reports

With unmanaged reports, you use hyperlinks pointing to report (.rpt) files from your web application. In version 8.0 of Crystal Reports, this was commonly termed the “Web Component Server (WCS)” method or “URL” method. It is simple to set up, use, and maintain and because you can send things like database logons, parameter values, and viewer options via the URL line, it is also very flexible. This is the most popular method of sending reports over the web due to its simplicity and power.

Required report information like database logons, parameter values, etc. can either be passed on the URL to the report or, if not present, the user will be prompted directly for these values. Check out white paper ce8_urlcommands.pdf for a complete how-to on sending these values. (Go to <http://support.crystaldecisions.com/docs> and search for the filename.)

Both Unmanaged and Managed reports can work on systems with Unix web servers. The component that connects the web server to the rest of the Crystal Enterprise (CE) system is called the Web Connector, and there are versions available for a number of Unix builds. The bulk of the CE components run on

Windows NT or Windows 2000. See the file Platforms.txt on the root folder of the Crystal Enterprise product CD for a list of tested Unix platforms.

There are two disadvantages to the unmanaged reports method:

The first disadvantage is that items passed on the URL line are stored as cookies on the client computer and each item requires one cookie. Since the HTTP protocol has a 20-cookie limit with most browsers, the WCS method is limited to reports with not too many parameters, database logons, etc. See knowledgebase article [C2009665](#) for more details.

The second disadvantage is that with secured databases, the database logon password is being passed from the browser to the web server, and as a result is not secure. For in-house web applications this is often not important. Where security is more important, there are 3 common workarounds:

1. The Secure Sockets Layer (HTTPS) protocol can be used to protect the password from being seen by people “sniffing”, or looking for password information on your network. If the password is included in the link, though, there is no way to prevent the user of the link from seeing it.
2. Users of Microsoft SQLServer database server can configure it to recognize a Windows NT userID and password for authentication. Then any process requesting connection to the SQLServer can be authenticated without an explicit logon. Running the Crystal Page Server service under a recognized NT account will allow the Page Server to connect to SQLServer without an explicit logon.
3. Another workaround is to publish the report into the Crystal Enterprise system and store the database logon information in Enterprise. See Appendix A below for steps to do this.

Managed Reports

Managed reports use the WCS just like reports delivered via the URL command method. They have a number of additional features:

- You can run reports on-demand, or schedule them to run at predetermined times and then view the results later.
- You can develop scripts in VBScript or JavaScript to create your own applications for scheduling, running, and viewing reports. These pages are called Crystal Server Pages, and have the file extension .CSP. There are sample applications provided such as ePortfolio, and there is a Web Wizard that creates applications for you.
- You can store database logons on the server side, preventing the need for the user to send these values across the network.
- You can trigger alerts from within a report, when a noteworthy situation is detected, and users can view those alerts from your application.
- Reports are stored in a File Repository. Non-administrator users of Crystal Enterprise need not have NT permissions to access these files.

And if you have Crystal Enterprise 8.0 Professional version:

- You can define users and user groups, and control access to the system for these users and groups. You can integrate Windows NT security and/or LDAP (Lightweight Directory Access Protocol) security into your CE system.
- You can set up multiple components (for instance, two WCS's) on multiple machines to be part of a single system. This makes your CE system scalable.

Add-In Products

You can add the Crystal Analysis Professional product to design OLAP reports based on Microsoft OLAP cubes, and deploy them across the web. Check our web site for more info on [Crystal Analysis Professional](#).

You can add the Report Application Server product to provide the ability to design reports across the web. This product is an SDK (software development kit) with sample applications. Briefly, features include:

- It is a 'zero client install' application – only a web browser is required on the end user's machine. You can open existing reports or create new ones from scratch.
- You can create a new report or open an existing one.
- You can alter database location and logins, choose tables and setup links, choose fields, create/alter groups, summaries, formulas, charts, maps etc.
- The included DHTML viewer features custom event handling, exporting, and printing.
- Because it's an SDK, anything you want to do can either involve user interaction or be automated.

Check our web site for more info on [Report Application Server](#).

For more information on Managed Reports, and how they compare to the 'vanilla' WCS method, check out the whitepaper, "[Understanding Managed and Unmanaged Reporting](#)".

Disadvantages

Are there any disadvantages to the Managed reports method? If you can't use the sample applications like ePortfolio, or those created with the web wizard because they don't match your needs, you can develop your own CSP pages. But like the ASP method, you are writing script, and development and maintenance will be more involved.

You can also run and view reports using a URL, without CSP pages. Users who want to store a report's database logon on the server side so it doesn't need to be passed from the client sometimes do this. See Appendix A for details.

Valuable sources of information on CSP programming include the Web Developer's Guide (there's an updated one on our web site in file [CE8_WebDeveloperHelp.exe](#)), and the whitepaper [CE8 Customization: A Lesson in Using the Report Plug-in for Scheduling](#).

So which method is right for you? Once you know the capabilities of each, pick the simplest method that has everything you need. Remember you can also mix and match. For instance you can use ASP Method for reports that required ADO, and Managed Reports for those that don't, but must have the database password held securely.

Installation

If you have worked with web reporting via the WCS method with Crystal Reports 8.0 or a previous version, check out http://support.crystaldecisions.com/community/CS/TechnicalPapers/cr8_to_ce8_migration.pdf. It was written with you in mind.

Supported Environments

First, review the small text file PLATFORMS.TXT found on the root of the product CD. An updated listing can be found in Knowledge Base article [C2009003](#). It lists all operating systems, web servers, data sources, etc. that the product has been tested with.

If not, that doesn't mean you will be unable to use the software. Generally, technical support will assist you in getting our software running on environments that "should work" – for example a Windows service pack that wasn't released when the Crystal Product was tested, or a Web Server that is not on the list but that is CGI-compliant. However, if you have a choice, stick to the list.

NOTE	In the event issues arise with an unsupported configuration, there is no support path to escalate your issue; however, they will be considered during the development of the next generation of our product.
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For more information on supported platforms, check the first section of the Release Notes (Release.rtf) file, again on the root of the product CD. Platforms.txt should be enough to get you going though.

The Release Notes also has a list of errata – things that were known to be wrong with the product when it was released but that couldn't be fixed in time. Keep this in mind and consult this list if you find something not working. Search for these at <http://support.crystaldecisions.com/docs> by choosing "Crystal Enterprise" as the product and "Release Notes" as the document type.

Crystal Reports Designer

It's always recommended to install Crystal Reports onto the machine where you are installing Crystal Enterprise. This is not required for the correct operation of Crystal Enterprise, but it's recommended because Crystal Reports is an

invaluable testing tool to ensure reports are connecting correctly to the database. Connectivity problems are the most common tech support issues. Running the report in the Crystal Reports designer on the web machine can spot and correct these problems quickly in most cases.

Architecture

It's a very good idea to have an idea of what the components are in Crystal Enterprise and what they all do. Crystal Enterprise has a more sophisticated architecture than Crystal Reports 8.0. To get familiar quickly, read Chapter 2 of the **Quick Start Guide.pdf** found in the \doc folder of the **Crystal Enterprise** CD.

Install

Install Crystal Enterprise following the steps in the **Quick Start Guide**. If you need more details use the information in the **Installation Guide.pdf** found in the same folder.

If you see a message "No Compatible Web Server found" during installation, it means the installation was trying to configure the Web Connector component, and could not find a Web Server it recognizes on your computer. If you have a web server installed that is not on the Platforms.txt, call in to technical support for a patch to force the install to copy the web connector onto your computer.

Licensing

Crystal Reports version 8.0

By default, Crystal Reports version 8.0 was licensed for use by up to 5 users at a time. This is known as concurrent licensing. Whether using the ASP method or the WCS method, up to 5 users could be viewing reports at one time. Additional licensing could be purchased if required.

There was no enforcement built into the software in the event that there were more users viewing reports than were licensed.

Crystal Reports Developer Edition version 8.5 and Crystal Enterprise 8.0

With Crystal Reports 8.5 and Crystal Enterprise 8.0, similar licensing for 5 concurrent users is offered by default, with additional licensing available. There are also other types of licensing available: named user and server licensing. Key codes are used to add licensing to your system.

Both Crystal Reports 8.5 and Crystal Enterprise 8.0 now have enforcement built in so that when the maximum number of users is viewing reports, an additional user attempting to view a report will be refused access.

Because they are separate products, Crystal Reports and Crystal Enterprise are licensed separately, and use separate key codes. They also manage licensing in different ways. To learn more about how Crystal Enterprise manages licensing

check out knowledgebase article [c2009637](#). For Crystal Reports, get the white paper [cr85_asp_licensing.pdf](#).

Conclusion

Taking time to familiarize yourself with the capabilities and options available from Crystal Decisions for web reporting can pay off in reduced setup and a faster overall path to a system that meets your needs.

Appendix A: Using Managed Reports to store Database Logon Info

One feature users like about Managed reports is the ability to store Database logon information for reports. This has two big advantages:

- With unmanaged reports, the database userID and password must be passed from browser to server. The POST method can be used to hide them, but they are not truly secure.
- If a report has subreports, each must get a database userID and password from the URL. Since every item passed via the URL is temporarily stored in it's own cookie on the browser, and typically browsers can't handle more than 20 cookies, a report with 10 subreports could fail to run. Note report parameters also take up one cookie each.

Viewing managed reports does not necessarily require CSP scripting. Here's a quick guide to turning your report to a CE Managed report, and providing access to it over the web:

- Browse to <http://yourwebserver/crystal/enterprise> and click the link to Crystal Management Console
- Login as Administrator (default password is blank)
- Click Objects > New Report, browse to your report file, and click OK.
- Select a folder for the report and click OK
- In the Objects list you should now see the new report. Click on the Object Title of the new report.
- In the Database tab enter userIDs and passwords for all databases. Make SURE the checkbox 'Prompt the user for new value(s) when viewing' is OFF. Be sure to click Update to store the changes.
- In the Parameters tab set default values for each parameter as desired. Make SURE the checkbox 'Prompt the user for new value(s) when viewing' is ON for ALL parameters.
- On the Properties tab click Preview and ensure the report appears OK. Look in the URL field at the top and note the ID number of the report.

Here is a sample URL that can be used to browse to this report:

[http://servername/viewrpt.cwr?ID=99&apsname=servername&apsuser=guest&apspassword=&apsauthtype=secEnterprise&promptex-ClientID="7"](http://servername/viewrpt.cwr?ID=99&apsname=servername&apsuser=guest&apspassword=&apsauthtype=secEnterprise&promptex-ClientID=)

In this sample, the web server (and CE machine) is called 'servername', and the report has ID 99. We need to authenticate to the APS before we can see a managed report, so the next items log onto CE as the guest user with the default blank password. `apsauthtype` must also be explicitly set. The final item is an example of setting a parameter value. This report has a parameter called `ClientID` that takes a numeric value 7. See [ce8_urlcommands.pdf](#) for complete details on how to set parameter values on the URL.

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>