Crystal Enterprise 8

Migrating from Crystal Reports 8 Web to Crystal Enterprise 8

Overview

Crystal Reports 8.5 Professional and Developer both include Crystal Enterprise 8 Standard, a web-based reporting solution that helps organizations maximize the value of their investments in strategic data systems. Crystal Enterprise 8 Standard is an upgrade to the Crystal Reports 8 Web solution included with the Professional and Developer versions of Crystal Reports 8. This document will deliver an overview of the feature upgrades of this product, the characteristics that were not carried through into this product, and also clarify the upgrade process.

Contents

Introduction

Crystal Enterprise (CE) is the foundation of Crystal Decision's enterprise-wide report delivery system. Crystal Enterprise Professional is a scalable solution (CE standard is single a server deployment) that can grow to meet the needs of any business. As such, the Standard version of CE has displaced the Crystal Reports (CR) Web solution as the web-based report delivery system that comes with Crystal Reports 8.5 Professional and Developer editions.

There are two editions of CE 8 - Professional and Standard. This document speaks, for the most part about the Standard edition. The Standard edition is the version provided with CR 8.5 Professional or Developer. It is included in the purchase of these products as a separate CD in the box. It is possible to upgrade to CE 8 Professional edition from the Standard edition, therefore the features of the Professional edition will be discussed in this document as well.

Feature Upgrades from Crystal Reports 8 Web

This section will address the enhancements to the CR 8 Web solution that CE 8 Standard includes. The enhancements will be discussed in four sections: Architecture Improvements, Centralized Administration, Improved Ease and Speed for Clients, Seamless Upgrade to CE 8 Professional.

Architecture Improvements

Many of the services installed by CE will be familiar to a CR Web administrator. The Web Component Server still exists, as does the Page Server, however, additional services have been added to support the expanded feature set. Most notably is the Crystal APS (Automated Process Scheduler) service that did not exist in CR 8 Web. This is the service that manages reports and scheduling, as well as keeps track of users and user licensing. All of the other CE services are dependent on the Crystal APS service.

Because the Crystal APS keeps track of scheduled jobs, history of previously scheduled instances, users and user licenses, and other information, it requires a database in which to store this information. By default, this database is stored in the Microsoft Data Engine (MSDE). MSDE is installed by CE and will appear as "MSSQL Server" in Control Panel > Services and the task bar. However, there are cases in which MSDE will not be used. For more information on these cases, please refer to the Release Notes, *Release.rtf*, located in the root directory of the CE CD.

Web Component Server is not required to reside on the Web Server

It is no longer necessary to install and run the Web Component Server (WCS) on your web server. The web server can be installed on one machine, left to focus on the work the web server does best while any requests for information from the CE environment can be forwarded to a second machine where the WCS resides. All processing is done on this second machine and after the reports are processed, the page-on-demand files are sent to the client via the web server. (CE Professional further expands on this functionality and will be discussed in a separate section.)

The ability to have the web server and the WCS separate is made possible via the Web Connector. The Web Connector is the only CE component that needs to be installed on the web server making a multi-server environment possible. Additionally, the Web Connector is not limited to installation only on Microsoft Windows NT or 2000. Using Web Connector technology, the web server can be installed on NT, Unix or Linux. For more information, please refer to "Appendix A: Configuring Web Connectors" of the Crystal Enterprise 8 Installation Guide which is included in the \Doc directory of the CE CD. The file name is *Installation Guide.pdf*.

Centralized Administration

There are two user interfaces for managing the CE environment: the Crystal Management Console (CMC) and the Crystal Configuration Manager (CCM).

The CMC is the main interface for administering the environment. It is a web-based console, accessible from any computer. Services can be stopped or started, and report file management is also possible from this console.

The CCM is a Windows application that manages the CE services. This is also a remote tool that can connect and manage the services of a computer other than the one from which it is launched.

The following are additional new administrative features:

Report Management

CE allows for reports to be "published" to the environment. When a report is published in CE, it is added to the CE system and is then managed by CE itself. CE controls access to the reports using its own security model thereby enforcing integrity within the overall system. This is known as "Managed Reporting."

NOTE	In Crystal Enterprise Standard, there are only two users – Administrator and Guest. In order to take full advantage of the security model upgrading to Crystal Enterprise Professional is required.

A variety of tools allows Administrators to easily add reports to the CE environment. The Report Publishing Wizard and the "Enterprise Folders" feature of CR 8.5 make placing reports on the web easier than ever.

CE also supports "unmanaged reports" as was the case in the CR 8 Web solution. When reports are placed in a virtual directory on a web server and requested directly via a URL, they are known as "unmanaged reports" and are not part of the CE environment. CR 8 Web only supported "unmanaged reports" and because CE supports "unmanaged" reports in precisely the same manner, web applications built using CR 8 Web will function seamlessly after upgrading to CE.

Customizable Web Desktop

CE introduces the concept of a web portal for centralizing reports. A fully functional web desktop, called "ePortfolio" is included with CE as an example of what you can do with the product. ePortfolio is open source code and you are encouraged to customize it to suit your needs. Alternatively, you can take any of our many open source samples as examples of what you can do and how to do it. The web portal can be customized to fit right into your corporate intranet site, thereby centralizing all of your critical company information in one location. With Crystal Server Pages (CSP), the sky is the limit and all you need to know is VBScript or JavaScript and ASP (Active Server Pages) to get started. The documentation you need is included in the Crystal Enterprise Web Developer's Help on the CE CD in the \Doc directory. The file name is *WebDeveloperHelp.chm*.

Effortless License Enforcement

CE removes the burden of managing paper licenses from the Administrator by tracking licensing internally. CE 8 includes a concurrent access license for five users. This is the same number of users who were allowed to access the system as per the CR 8 licensing agreement. However, CE enforces this licensing agreement within the software whereas the CR 8 Web Components did not. With CE, when the five concurrent licenses are all in use and a sixth user attempts to access the

system, that sixth user will be denied access until a license is freed. This makes it easier for Administrators to know when more licenses are required.

Improved Ease and Speed for Clients

With CE, web solutions are easy to administer and use because only a web browser is required on the client side. This was a benefit of the CR Web solution and it will continue to be an advantage in CE as well. In fact, Crystal Decisions has broadened the zero-client concept to extend to the report viewer as well by using DHTML. Furthermore, in a managed reporting environment, users have access to historical data thanks to the scheduling feature of CE. Other additions include easier use of parameter pick lists in a report viewer and the ability to export to PDF (requires additional browser plug-in to be installed).

Scheduling of Reports

There were two kinds of reports in the CR 8 Web solution, reports that have saved data and reports that do not. Reports that do not have saved data will connect to the database to retrieve data. CE supports this same URL command line functionality as well, however, there is an additional feature that allows users to schedule the report to be "run" at a specific time. Reports can be scheduled to: run right now, in the future (on a particular date and time), or recur as specified at schedule time. The end result is that each report object can have a history of scheduled instances, which users can view at any time. Data from a previously run "instance" can be viewed and then compared with fresh data. The possibilities for data analysis are substantially-increased.

Additionally, the database server and Web Component Server will both save resources by running reports during off non-peak hours. Rather than all reports retrieving fresh data each time they are viewed, those reports required to be run daily or weekly can be scheduled and viewed when needed. Not only does it save on the resources of the database server and Web Component Server, but also it makes viewing faster for the client. By saving a trip to the database, the Page Server can provide page-on-demand viewing faster than ever before.

Parameter Pick Lists in Viewers

New parameter pick-lists in viewers provide users with a selection of default values. This means less user education on the administrator's part. If the end user wants to get fresh data, a list of valid values can be saved inside the report and presented to them before the query is sent to the database. The users do not need to know the data and the database gets fewer hits due to invalid queries.

Zero Client DHTML Viewer

Utilization of the Dynamic HTML (DHTML) Viewer means that nothing is installed on the end user's client computer. One of the best features of Crystal Reports technology is the ability to drill down into a report to get more information on a group of data. The DHTML Report Viewer provides a Group Tree that is displayed in a separate frame to the left of the report page. Like the Group Tree in the page-on-demand ActiveX or Java Viewers in CR Web, this Group Tree displays all the group categories and allows users to navigate with them.

Like the ActiveX and Java (Bean) Viewers, the DHTML Viewer can be customized to integrate seamlessly with the design of an existing web site or corporate intranet. The DHTML Frame API is a small JavaScript library that enables you to partly build your own DHTML Report Viewer. You can modify the toolbar to display which options you want to display or control other displays available on the report, such as the group tree.

View Reports in PDF Format

Users are able to export reports to a variety of formats including Microsoft Word, RTF and Microsoft Excel. New to CE is the ability to export the reports to Adobe Acrobat's portable document format (PDF). With a PDF file, recipients protect data against manipulation. Because of the popularity of PDF, most recipients will likely have the Acrobat Reader installed.

Seamless Upgrade to Crystal Enterprise 8 Professional

CE Professional is a globally scalable content delivery platform for deploying powerful enterprise reporting systems. It is designed for organizations that have large-scale, complex information delivery requirements and broad user bases. In addition to the features in CE Standard, CE Professional delivers the following:

Added Security

CE Professional extends the simple access-level security model of CE Standard with a full object-level security system. This allows Administrators to not only control overall access to the system, but also access to specific folders and\or reports in the system. CE Professional supports the creation of a hierarchical group\user security model and the setting of rights on individual objects or folders.

There are two types of Authentication providers in CE: the system default CE Authentication Provider and the NT Authentication Provider. Using the CE Authentication Provider security model, administrators create their own user and groups within the environment and distribute logons to the users.

The NT Authentication Provider mirrors NT user groups and the accounts in these groups exist in CE as users. The provider also manages synchronization between the CE environment and the NT system. "Single Sign On" removes the needs for users to type in their username or password to access the system. The synchronization between CE and NT reduces administrative overhead for NT user account additions, removal, and password enforcement – to name a few.

Personalization of Web Portal

In parallel with the enhanced security system, CE Professional enables user recognition and delivery of personalized content. This allows tracking of user preferences and presentation of customized interfaces, user-defined favorites, and custom folder structures. Because CE Standard only has two users, this cannot be accomplished without upgrading to CE Professional.

Multi-server support

Unlike CE Standard, which is restricted to operation on a single physical machine, CE Professional can be deployed across multiple physical machines for greater performance and scalability.

Fail-over support

CE Professional provides built-in clustering support on the Crystal APS, a critical server component that manages security, report management and processing schedules. Clustering support on this component guarantees that licensed users will have uninterrupted access to the system and ensures that important report schedules are executed.

For information on planning beyond fail-over support, please review the Crystal Enterprise Disaster Recovery Planning (DRP) document, *CE8_Disaster_Recovery_Plan.pdf*, available for

viewing or download on the Crystal Decisions web site at:
http://support.crystaldecisions.com/communityCS/TechnicalPapers/CE8_Disaster_Recovery_Plan
.pdf

Redundancy and Load Balancing

CE Professional also supports deployment of redundant machines for other key server
components. In the case of hardware failure, requests are automatically routed to the remaining
machines in the system. Redundancy is supported for the following server components: Crystal
Job Server, Crystal Page Server, Crystal Cache Server, and Crystal Web Component Server.

CE Professional also includes intelligent load-balancing technology to deliver faster performance
and more efficient use of system resources. All report processing functions, including scheduled
processing, on-demand processing and caching can be load balanced by the APS server
component.

How to Perform a Proper Upgrade to CE 8

Crystal Decisions encourages testing CE in a development environment prior to upgrading the
production environment. This will help to ensure that an upgrade from CR 8 Web to CE does not
surprise you with additional installation concerns. There are a few minimum requirements prior to
upgrading. These minimums are consistent between CR 8.5 and CE 8 and are listed in "Chapter 2:
About Crystal Enterprise" in the "Considerations and Requirements" of the Crystal Enterprise 8
Installation Guide which is located in the \Doc directory of the CE 8 CD.

An important factor to note is that any installation of CE will uninstall the CR 8 Web components.
The coexistence of CR 8 and CE 8 is not possible. In fact, the installation will automatically
remove the Web Component Server from CR 8 upon installation of CE. Note that it is highly
recommended that you upgrade CR 8 to CR 8.5 on any machine on which CR 8 Web is installed.
As CR 8 Web and CE 8 are not intended for installation on the same computer, the following
dialog box will be displayed at the start of the installation of CE:

Along this same vein, CR 8.5 and CR 8 cannot be installed together either. CR 8.5 will replace all
functionality of CR 8. However, CR 8.5 does not have a web piece like CR 8 did, as this is
replaced by the new CE components. Upon installation of CR 8.5 on a machine that has CR 8
Web, a warning will advise you to install CE 8 to replace the web functionality.

The steps to installation are few and straightforward. Default options are provided to simplify the installation and generally fit the needs of the users. In the case where custom installations need to be used, a custom option is available. The installation of the product will take care of configuring the web server from the CR 8 Web solution to CE.

Elements of CR 8 Web Not Available in CE 8

As you can imagine, very few characteristics or features are available in CR Web that are not available in CE. The driving force behind replacing CR Web with CE Standard was to open a gateway for CR Web administrators to migrate to CE Professional. Crystal Decisions has aimed to provide all features of CR 8, in Crystal Enterprise 8 as well as improve the feature sets**,** and supply a growth method for the future.

Unfortunately, not all aspects of CR Web could be carried over into CE. Specifically, web applications that make use of the Report Design Component (RDC) will not work within the CE framework. Note that support for web-based applications using Active Server Pages is still available with CR 8.5 Developer. The RDC in this version gives you report level control for your web based applications. ASP developers can set database connections dynamically and control report formatting at the field level with our RDC object model, ASP Samples for Crystal Reports 8.5 (Developer Edition only), *Aspxmps85.exe*, available for download at:
http://support.crystaldecisions.net/communityCS/FilesAndUpdates/aspxmps85.exe.asp

Aside from web applications that use the RDC, all features of CR 8 Web are still available in CE and many have been enhanced.

Finding More Information

This document has been an introduction to Crystal Enterprise, written for the administrator of an existing Crystal Reports 8 Web deployment. Many new features of Crystal Enterprise were outlined in this document. However, this document does not explain how to implement them. As referenced in this document, user guides are included in the \Doc directory of the Crystal Enterprise CD that offer a wealth of information on implementing these features. Please refer to the "Web Reporting" section of the "What's New" chapter in the Crystal Reports 8.5 online help for more information.

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