

Crystal Enterprise Report Application Server

Overview

Overview

This document provides an overview of the Crystal Enterprise product line, with specific focus on the Report Application Server edition; an entry-level edition of Crystal Enterprise that is bundled in select editions of Crystal Reports.

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Introduction

Crystal Enterprise provides every organization with the power they need to understand their corporate information—in one integrated solution for reporting, analysis and delivery for the Web. For any data source or application, Crystal Enterprise offers a completely customizable solution for providing secure access to interactive, actionable information for employees, customers and suppliers. Crystal Enterprise helps people make the decisions that propel your business forward.

Crystal Enterprise benefits from more than seven years of experience in the development and deployment of scalable, reliable information delivery solutions. Designed exclusively for Web and mission-critical enterprise standards, Crystal Enterprise offers a cost-effective solution for integrating reporting and analysis into intranet, extranet and corporate portal applications—and for scaling information to hundreds of thousands of people.

Core Offerings

Crystal Enterprise is available in three different editions to suit a wide range of information delivery scenarios. Regardless of edition, Crystal Enterprise includes flexible APIs for rapid application integration (on the .NET, Java and COM/ASP platforms) and comprehensive support for processing and viewing Crystal Reports files.

Report Application Server Edition

The Report Application Server Edition (RAS Edition) is an entry-level edition that provides a base set of CE services to enable processing, viewing and runtime modification of Crystal Reports files. It is designed specifically for developers who want to integrate Crystal Reports into custom applications and includes an efficient report processing engine, embeddable zero-client viewer controls and rich SDKs for application integration. All report processing is done in on demand so this edition is ideal for reporting off smaller data sets (e.g. custom COM or EJB data sources created on-the-fly by your web applications). Connectivity to a broad range of enterprise data sources (e.g. SQL Server, Oracle) is also included.

This edition of Crystal Enterprise is bundled into select editions of Crystal Reports.

Standard Edition

The Standard Edition of Crystal Enterprise provides an out-of-the-box information delivery system. It builds upon the core processing capabilities of the RAS Edition and introduces system management capabilities, a flexible scheduling service, analytic reporting and a production-ready end user interface. It is ideal for workgroup or departmental deployments where quick time to deployment is critical.

The Standard Edition is bundled into Crystal Reports Advanced Edition.

Professional Edition

The Professional Edition extends Crystal Enterprise into a robust infrastructure for reporting, analysis and information delivery. It includes comprehensive security, management and clustering capabilities to support large, complex deployments and integrates seamlessly with existing IT investments (security systems, operating systems and ERP/CRM systems). The Professional Edition is ideal for large deployments with complex reporting, analysis and distribution requirements.

For more information on the Standard and Professional Editions of Crystal Enterprise, please visit the Features area of the Crystal Enterprise web site to download a detailed white paper on the advanced editions of Crystal Enterprise.

<http://www.crystaldecisions.com/products/crystalenterprise/features.asp>

Report Processing

The Report Application Server (which lends its name to the Report Application Server Edition of Crystal Enterprise) is a multi-threaded report processing engine. It runs in an on-demand mode, meaning that it processes report requests as it receives them, and queues any requests that cannot be immediately processed.

The Report Application Server also includes server-side caching technology to speed delivery of frequently requested content. Once a report is processed, it is kept open on the server for a specific (configurable) period of time so that subsequent report pages and other operations can be performed more rapidly.

Throughput/Performance

The throughput of the Report Application Server varies by edition of Crystal Reports purchased and can be extended with additional licensing from Crystal.

Development/Test

The Report Application Server Edition provided in Crystal Reports Professional and Developer editions is intended for developing and testing applications. To deploy your web application, you may upgrade to the Advanced Edition for queuing (In the Professional and Developer Editions, excess report requests are denied, rather than being queued) and caching capabilities. For each Professional/Developer Edition purchased, you may install a single instance of RAS. To run more than one RAS server, you may purchase additional copies of the Professional/Developer Edition. You may not cluster multiple instances of RAS together through use of a web farm to increase the scalability of a single application¹.

¹ Report Application Server includes technology to prevent multiple instances running with the same key code.

Initial Deployment

Crystal Reports Advanced Edition includes deployment licensing for the Report Application Server Edition. The server technology in the Advanced Edition adds request queuing technology and caching capabilities to provide a first level of production scalability for deployment of web applications with variable user loads. The scalability of applications will depend on many factors including the number, size, and complexity of reports, usage patterns, and data connectivity requirements.

NOTE	For detailed licensing information about RAS, please refer to 'License.pdf' found on the RAS installation CD.
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Processor

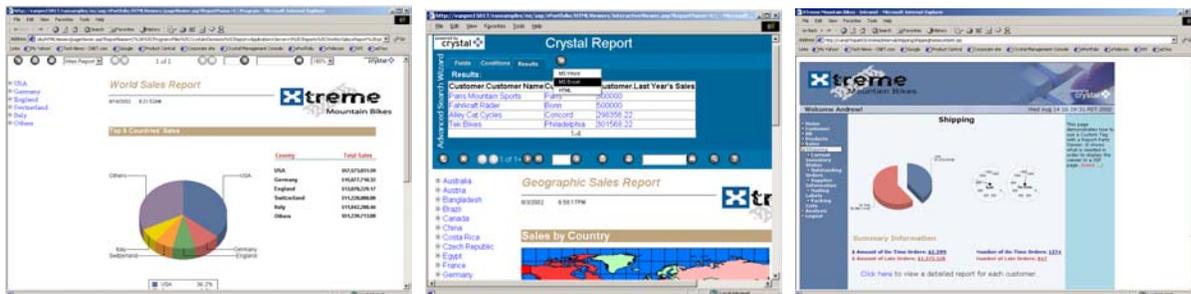
Crystal Decisions offers processor licensing to unlock the full power of the server technology for unlimited user access. A license is required only for the exact number of processors running RAS. Processor licensing of RAS does allow you to cluster together multiple instances of RAS.

Report Viewing

The Crystal Enterprise Report Application Server Edition provides zero-client, server-side viewer controls for .NET, Java and COM applications. These viewers can be added to any development project and provide a full DHTML user interface for end users to navigate reports.

The viewer controls are designed for maximum programmability, allowing developers to modify the behavior of the viewer by toggling properties at run-time. There are three viewers:

Report page viewer	Provides basic web reporting functionality for rendering a page-by-page view of a report.
Interactive viewer²	Provides advanced searching and analysis functionality including the ability for end users to perform a search on the saved data in a report and export the resulting searched data to an Office document (Word, Excel and Email) for sharing and instant updating.
Report part viewer	Enables end users to view individual report parts in HTML through a corporate portal or via WML cellular phones, RIM devices, and iPAQs.



² The Interactive Viewer is only available for COM and Java development environments/application servers.

Figure 1: Crystal Reports Viewers (from left): Page Viewer, Interactive Viewer, and Report Part Viewer embedded into a portal application.

Software Developer's Kit (SDK)

The Crystal Enterprise Report Application Server Edition provides broad support for major development platforms. The product includes Java, .NET and COM APIs and a range of sample applications written in each of these languages.

The API set provided with the Report Application Server Edition varies based on the edition of Crystal Reports purchased. The Developer Edition enables developers to view reports and set data source and parameter information whereas the Advanced Edition also includes a flexible set of report creation APIs to enable end users to create and modify reports via a web application. The Professional Edition of Crystal Reports does not include APIs for the Report Application Server.

Crystal Reports Advanced Edition also introduces more flexible data access with support for custom data. This means that developers can use Crystal Reports to format data exposed via custom COM data providers and Java Beans.

Upgrading/Migrating from Report Application Server

The Report Application Server Edition is designed as a cost-effective entry point to Crystal Enterprise. As such, every effort has been made to ensure that applications built using the Report Application Server Edition can be easily migrated to the advanced editions of Crystal Enterprise.

The Report Application Server Edition and Crystal Enterprise Standard/Professional share the same basic API set (although the Standard and Professional editions have an extended API set), so code designed for one edition is portable across the Crystal Enterprise family. Using the advanced management and repository features of Crystal Enterprise Standard and Professional will necessitate small code changes to properly request and view reports.

When should you move to Crystal Enterprise Standard or Professional?³

There are four core reasons to migrate from the Report Application Server to Standard or Professional:

Increased load handling

Both Crystal Enterprise Standard and Professional incorporate powerful technology to help you cope with larger, more complex reports and heavier user loads.

Crystal Enterprise Standard introduces scheduling technology to reduce processing load and take advantage of overnight cycles to process more complex reports.

Crystal Enterprise Professional builds on this by supporting multi-server deployments. The system allows you to deploy across multiple machines to handle additional load; Crystal Enterprise automatically handles load balancing between machines. You can also tune individual processes to deliver maximum performance.

Clustering and fail-over

Crystal Enterprise Professional adds built-in clustering technology to support mission-critical deployment requirements. The system can be configured for fully automatic fail-over in the event of hardware or software failure.

System management

Crystal Enterprise Standard and Professional both offer a managed system for information delivery. All reports are published into a single repository, where content can be organized into folders and report instances are automatically stored and versioned. Both editions offer a web-based administration console and basic system monitoring capabilities.

Crystal Enterprise Professional adds additional security mechanisms, which allow control not only over what content users can access, but what operations they can perform (e.g. view, schedule, modify, etc).

Analytics

Crystal Enterprise Standard and Professional both incorporate web-based analysis capabilities, which enable users to view and interact with reports built off OLAP data sources. Crystal Analysis files can be published to Crystal Enterprise and managed like Crystal Reports files.

³ Note: Crystal Enterprise 9 Standard and Professional will be available later in 2002.

Summary

The Report Application Server Edition of Crystal Enterprise provides a base set of services to enable on demand report processing and application integration. It is designed as the entry-level offering into the Crystal Enterprise product family.

Crystal Enterprise is available in three different editions to suit a wide range of information delivery scenarios. Regardless of edition, Crystal Enterprise includes flexible APIs for rapid application integration (on both the .NET and Java platforms) and comprehensive support for processing and viewing Crystal Reports files.

Applications built on top of the Report Application Server can be scaled up by purchasing additional licensing from Crystal Decisions or extended by upgrading to the Standard or Professional editions of Crystal Enterprise.

The information contained in this document represents the best current view of Crystal Decisions on the issues discussed as of the date of publication, but should not be interpreted to be a commitment on the part of Crystal Decisions or a guarantee as to the accuracy of any information presented.

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