

Crystal Enterprise Report Application Server (CE RAS) 9

Exporting using the Java SDK

Overview

This document discusses server-side and client-side exporting using the Crystal Enterprise Report Application Server (CE RAS) 9 Java SDK.

NOTE	Crystal Enterprise Report Application Server (CE RAS) 9 is shipped on a separate CD with Crystal Reports 9 Professional, Developer, and Advanced editions.
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Introduction

Crystal Enterprise Report Application Server (CE RAS) 9 and Crystal Reports (CR) 9 are able to export to many of the same formats. Since CE RAS is a client/server (web-based reporting) solution, exporting destinations fall into two main types: (1) exporting to a physical file on the server, and (2) exporting to a client-side viewer or downloaded file. The **ReportExportControl** object is used with client-side exporting, while the **PrintOutputControl** object is used with server-side exporting. This document discusses using these two controls.

ReportExportControl

The **ReportExportControl** object is derived from the same class as the **CrystalReportViewer** and **CrystalReportInteractiveViewer** objects. Using the **ReportExportControl** object is a convenient way of exporting the report to the client browser or to a downloaded file.

Exporting to Crystal Reports format

The following sample code demonstrates how to export to the Crystal Reports format, prompting to either open or save the exported file:

```
// Create an ExportOptions object
ExportOptions exOpt = new ExportOptions();

// Set the ExportFormatType property of the ExportOptions
// object to the desired format type
exOpt.setExportFormatType(ReportExportFormat.CrystalReports);
response.reset();

// (Optional) Set the ContentType and Content-Disposition
// of the Response Object to create the exported file as an
// attachment
response.setHeader("Content-Disposition", "attachment");
response.setContentType("application/rpt");
ReportExportControl oViewer = new ReportExportControl();

// Set the ExportOptions property of the
// CrystalReportExportControl to the ExportOptions object
oViewer.setExportOptions(exOpt);
oViewer.setExportAsAttachment(true);
```

```
oViewer.setReportSource(oClientDoc.getReportSource());
```

```
// Call the processHttpRequest method of the
CrystalReportExportControl
```

```
oViewer.processHttpRequest(request, response,
getServletConfig().getServletContext(), out);
```

Export format type

The **ExportFormatType** property of the **ExportOptions** object takes a constant long value corresponding to one of the supported export types. The valid constants are listed in Table 1.

Member Name	Description
CrystalReports	Export in Crystal report format.
MSWord	Export in Microsoft Word format.
MSExcel	Export in Microsoft Excel format.
RTF	Export in Rich Text Format.
PDF	Export in PDF format.
RecordToMSExcel	Export record to Microsoft Excel without format information.
Text	Export in plain text format.
CharacterSeparatedValues	Export in character separated value format.

Table 1 - Export Format Types

Content type

The **Response** object's **ContentType** property sets the HTTP content type or MIME type to enable the browser correctly handle the content. While certain browsers such as Microsoft Internet Explorer may only need the file extension to do this, it is recommended to explicitly set the content type given that the functionality of the browser may change. The content type strings for the supported export formats are listed in Table 2.

Format	Mime-type string
Crystal Reports (.rpt)	application/x-rpt
MS Word (.doc)	application/msword
MS Excel (.xls)	application/vnd.ms-excel
RTF (.rtf)	application/msword
PDF (.pdf)	application/pdf
Excel Data Only (.xls)	application/vnd.ms-excel
Text (.txt)	text/plain
Character Separated Values (.csv)	application/vnd.ms-excel

Table 2 - Content Types

Export options

The **ExportOptions** object informs the **CrystalReportExportControl** object about what is the desired export format. Some formats provide you with more options to control the exported output. For example, since RTF, Word, and PDF are page-based export types, you may export all pages, or only a range of pages. Similarly, Excel has a number of options surrounding how to size and distribute the columns in worksheet. Table 3 lists the properties of the **ExportOptions** object that you may set.

Property	Type	Description
ExportFormatType	ReportExportFormat class.	Sets the export format type using a static member of the ReportExportFormat class.
FormatOptions	One of the subclasses of PageBasedExportFormatOptions	Optional. Sets the Format Options using either the ExcelExportFormatOptions , PDFExportFormatOptions , or RTFWordExportFormatOptions

Table 3 - ExportOptions Properties

Export format options

The **ExportFormatType** property takes a constant long value, as listed in Table 1. The **FormatOptions** property is used only when exporting to Excel, PDF, RTF, or Word. The Excel export has options that can be specified using the **ExcelExportFormatOptions** object. This object allows you to specify page range, as well as Excel specific worksheet attributes such column width. The properties of the **ExcelExportFormatOptions** object are listed in Table 4.

Property	Type	Description
BaseAreaGroupNumber	int	Gets or sets on which group section to base the column width.
BaseAreaType	AreaSectionKind	Gets or sets on which section to base the column width.
ConstantColWidth	int	Gets or sets the size of the constant column width.
EndPageNumber	int	Gets or sets the end page.
ExcelTabHasColumnHeadings	boolean	Gets or sets whether or not to use column headings.
StartPageNumber	int	Gets or sets the start page.
UseConstColWidth	Boolean	Gets or sets whether or not to use constant column widths.

Table 4 – Properties of ExcelExportFormatOptions

When exporting to PDF, RTF, or Word, use the PDFExportFormatOptions or the RTFWordExportFormatOptions object. Both of these are derived from the PageBasedExportFormatOptions object, the properties of which are listed in Table 5.

Property	Type	Description
EndPageNumber	int	Gets or sets the end page.
StartPageNumber	int	Gets or sets the start page.

Table 5 - PageBasedExportFormatOptions Properties

Exporting to PDF format

The following code demonstrates how to export pages 1 to 10 of a report to PDF format.

```

ExportOptions exOpts = new ExportOptions();
exOpts.setExportFormatType(ReportExportFormat.PDF);
PDFExportFormatOptions pdfOptions = new
PDFExportFormatOptions();
pdfOptions.setStartPageNumber(1);
pdfOptions.setEndPageNumber(10);
exOpts.setFormatOptions(pdfOptions);
response.reset();
response.setContentType("application/pdf");
response.setHeader("", "
inline;filename=SampleExport.pdf");
ReportExportControl expViewer = new ReportExportControl();
expViewer.setReportSource(clientDoc.getReportSource());
expViewer.setExportOptions(exOpts);

try {
expViewer.processHttpRequest(request, response,
getServletConfig().getServletContext(), null);
} catch (IllegalStateException e) {}

```

PrintOutputController

You may wish to use the **PrintOutputController** object instead of the **CrystalReportExportControl** object for these reasons:

- The **CrystalReportExportControl** requires Request, Response, and Session objects, whereas the **PrintOutputController** does not require these objects.
- The **CrystalReportExportControl** is better suited to client-side exporting, whereas the **PrintOutputController** is better suited for server-side exporting.
- The **PrintExportController** requires fewer lines of code to implement.

Client-side exporting to Crystal Reports format

The following sample code demonstrates how to export to the client as a downloaded file:

```
ByteArrayInputStream byteIS = (ByteArrayInputStream)
rptDoc.getPrintOutputController().export(ReportExportFormat
.CrystalReports);

byte byteArray[] = new byte[byteIS.available()];
byteIS.read(byteArray, 0, byteIS.available());

response.reset();
response.setHeader("", "inline;filename=SampleExport.rpt");
response.setContentType("application/rpt");
response.getOutputStream().write(byteArray);
```

NOTE

For server-side exporting, use the **Save** method of the **ByteArray** object. This method's parameters are the path for the exported file and a Boolean value indicating whether or not an existing file with the same name should be overwritten automatically.

Server-side exporting to RTF format

The following sample code demonstrates how to export a report to RTF format on the server:

```

ByteArrayInputStream byteIS = (ByteArrayInputStream)
rptDoc.getPrintOutputController().export(ReportExportFormat
.RTF);

byte byteArray[] = new byte[byteIS.available()];
File file = new File("c:\\SampleExport.rtf");
FileOutputStream fileOS = new FileOutputStream(file);

ByteArrayOutputStream byteOS = new
ByteArrayOutputStream(byteIS.available());
int x = byteIS.read(byteArray, 0, byteIS.available());

byteOS.write(byteArray, 0, x);
byteOS.writeTo(fileOS);

byteOS.close();
fileOS.close();

```

NOTE

To highlight text in a PDF document for copying and pasting code, click the **Text Select Tool** toolbar button in Adobe Acrobat.



This procedure applies to Adobe Acrobat 4.0 and 5.0.

DISCLAIMER

The third party products discussed in this white paper were not fully tested in conjunction with Crystal Enterprise prior to its release. Officially supported Crystal Enterprise platforms are listed in the text file Platforms.txt found in the root of the Crystal Enterprise CD as well as in the Knowledge Base article c2009003 (search for this article number at <http://support.crystaldecisions.com/kbase>), which is more current.

The information in this document is provided as a courtesy to assist our customers with the configuration of our product in conjunction with these third party platforms.

In the event issues arise with an unsupported configuration, there is no escalation support; however, they will be considered during the development of the next generation of our product.

Finding More Information

For sample Crystal Enterprise Report Application Server (CE RAS) 9 Java applications, search for Dev_ras_9_jsp_samples.exe and Adv_ras_9_jsp_samples.exe on our support site at:

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

For more information on the objects, methods, and properties discussed in this document, consult the CE RAS 9 Javadocs.

For more information and resources, refer to the product documentation and visit the support area of the web site at: www.businessobjects.com

► www.businessobjects.com

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