



RECRYSTALLIZE

SERVER

for Crystal Reports

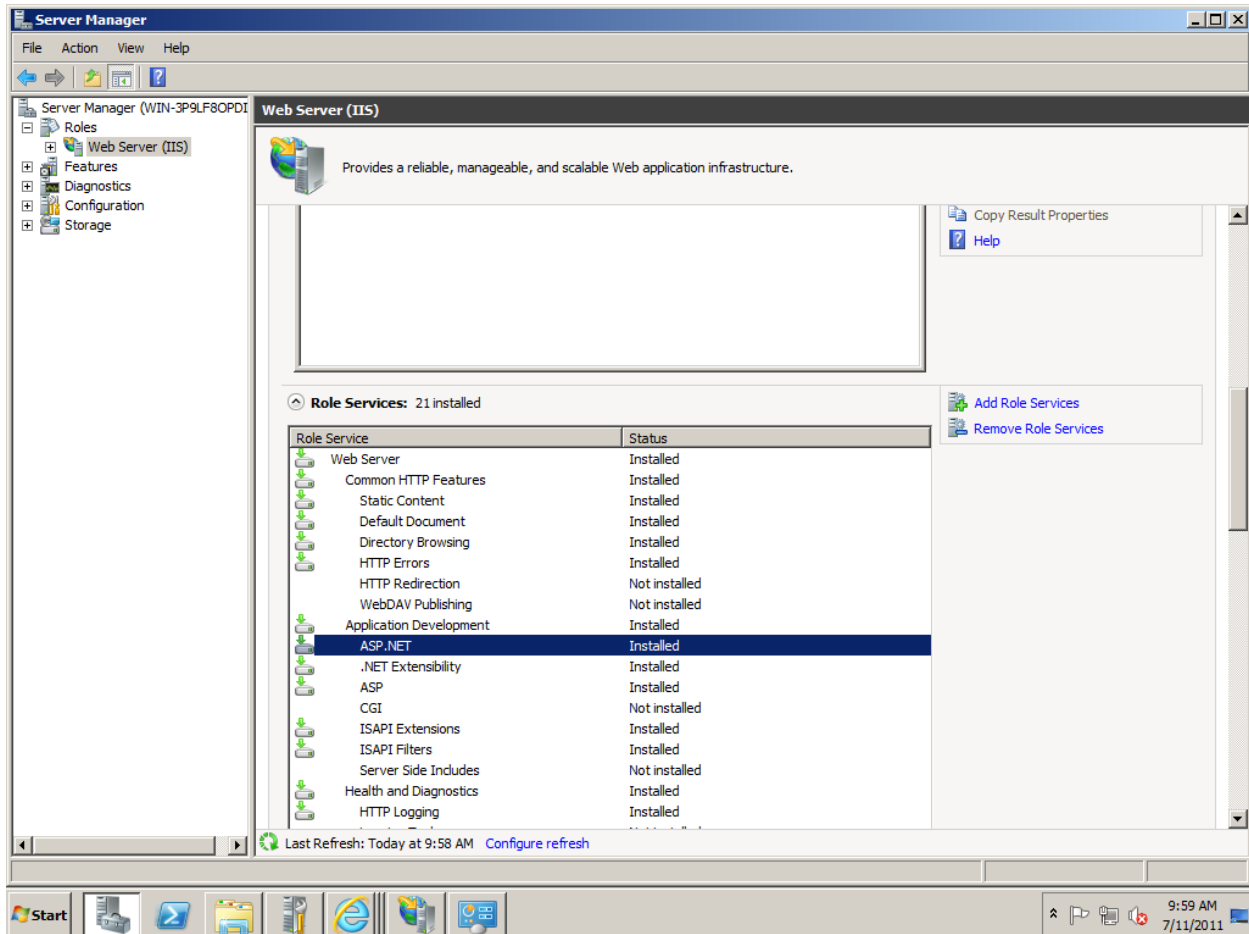
Installation and Administration Guide

Quick Start	1
System Requirements	5
Installation Notes.....	5
Configuration Settings	6
Browsing Folders and Files with ReCrystallize Server	10
Managing Files with ReCrystallize Server	14
Viewing Reports with ReCrystallize Server	15
Passing parameter values in the URL.....	15
Posting parameter values from a form.....	17
Encrypting parameter values	18
Encrypting the entire report request	19
Adding an expiration date to the report request.....	19
Setting report viewer options.....	20
Automatically refreshing and updating a report on a screen	21
Using data saved within the Crystal Reports .rpt file	21
Forcing immediate data refresh	22
Exporting Reports with ReCrystallize Server	23
Emailing Report Output	24
Saving Report Output to Disk.....	25
Printing Reports with ReCrystallize Server.....	26
Troubleshooting Printing Issues	26
Modifying a Report’s Record Selection Formula	27
Record Selection Formula Examples.....	27
Advanced Database Configuration	28
Database logon prompting.....	28
Using alternate database login credentials.....	28
Explicitly providing the database user and password in a report request	29
Overriding all database location properties	29
Overriding all database connection properties using ad hoc values	30
Database options order of precedence	30
Miscellaneous	31
Calling ReCrystallize Server from a command line, PowerShell script, batch file, or other application.....	31
Displaying an Animated “Please Wait” Message While a Report Loads.....	32
Restricting Access to Files with User Authentication and Permissions	32
Using a Network Location for Folders and Reports.....	33
Installing ReCrystallize Server without User Interaction	35

Logging a Correlation ID and Other Values.....	36
Listing parameter fields in a report.....	36
Setting a report parameter value to the authenticated web username.....	36
Where to Buy.....	37
Troubleshooting Resources.....	37
Appendix A: Report Viewing Request Quick Reference.....	38
Appendix B: End User License Agreement.....	43

Quick Start

1. Ensure that IIS is enabled. Go to Server Manager, Roles to add the Web Server (IIS) Role. Under Web Server (IIS), find ASP.NET in Role Services. Add the ASP.NET Role Service if it is not already installed. The ReCrystallize Server setup will attempt to add the ASP.NET Role Service if it is not installed.



2. Launch the **First-time Setup ReCrystallize Server.exe** file to install ReCrystallize Server.
3. If the **Update ReCrystallize Server.exe** file is a higher version number, launch it to update the installation.
4. If your reports access your database through ODBC, create a System DSN with the same name and configuration as the one used to design the reports. (User DSNs are not available to the IIS web server.)
 - o If you are using a 64-bit version of Windows (this is common), configure the ODBC connections using the 32-bit ODBC Data Source Administrator at
C:\Windows\SysWOW64\odbcad32.exe
 - o If your reports use a SQL Server database, configure the ODBC System DSN to use TCP/IP (not named pipes) and SQL Authentication (not NT/Integrated Authentication).
 - o If your reports use an Oracle database, install and configure the Oracle client software on the web server.

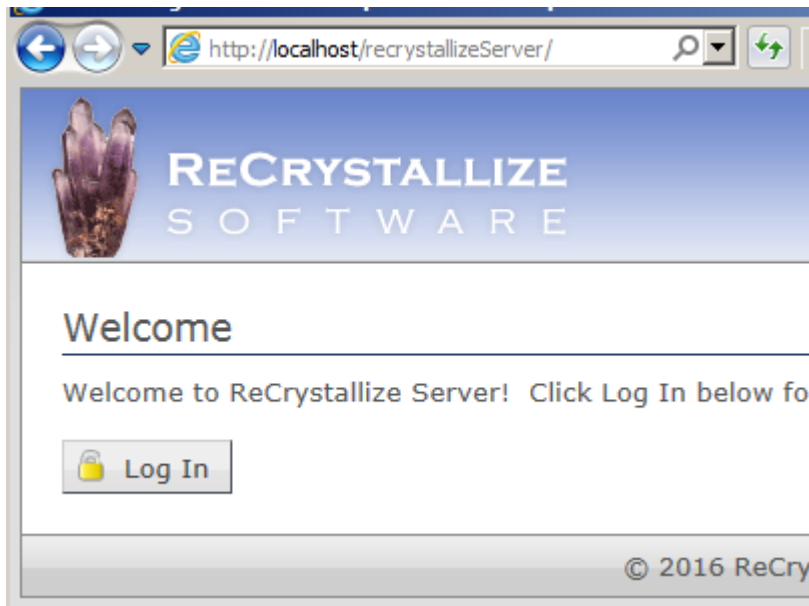
- Install and configure any other database client software that may be needed to run your reports. 32-bit versions should be installed.
5. Open the ReCrystallize Server administration page in a browser. An Administration shortcut is available in the web server's Start Menu under ReCrystallize Server. The administration page may also be reached by browsing directly to the ReCrystallizeServer folder.

<http://localhost/ReCrystallizeServer>

or

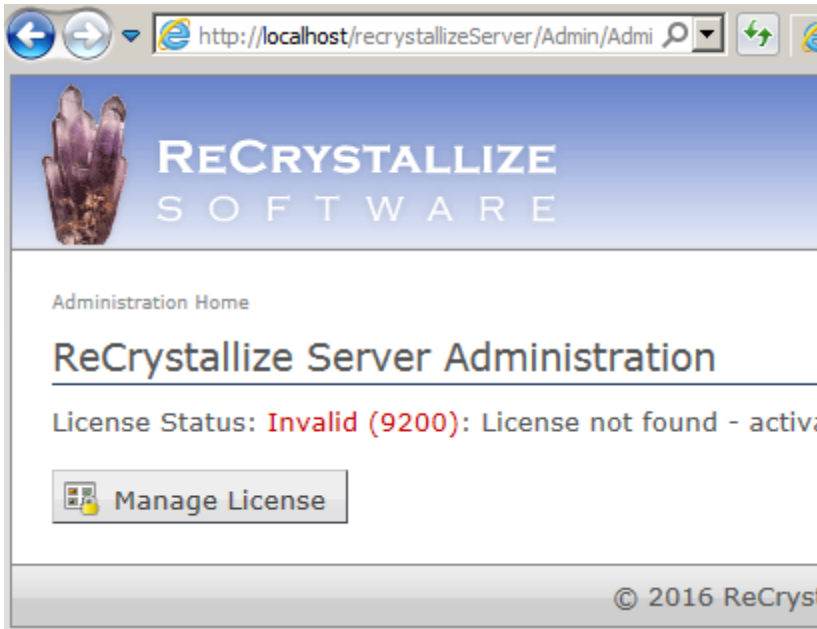
<http://yourservername/ReCrystallizeServer>

A welcome screen should open in the browser. Click "Log In" to enter Administration.



6. At the Login page, enter the Username and Password. The initial default username and password are "admin" and "pw".

7. If the server has not previously been licensed for ReCrystallize Server, you may see an invalid license message.



Click “Manage License”.

8. At the License Management page, click “Activate”. Enter the License ID and Password provided to you along with an optional Installation Name to identify the server. Click “Submit” to activate the license.

This step requires that the server have standard http (port 80) and https (port 443) connection to the internet. If it is not possible to connect the server to the internet, an alternate manual activation method is available. Please contact support for assistance with manual activation.

If you do not have a license for ReCrystallize Server, you can obtain a full or evaluation license immediately through our website at

<http://www.recrystallize.com/merchant/ReCrystallize-Server-for-Crystal-Reports.htm>

- From the Administration page, click the Settings button to proceed to the Settings page.

- Edit the values for Database Username and Database Password. The username and password entered here will be used to log in to the database in order to retrieve report data. Click the Save button to retain the changes.
- Place copies of your Crystal Reports .rpt file(s) in the ReCrystallize Server Reports folder. The default location is C:\ReCrystallizeServer\Reports.
 - Use the Start Menu shortcut or browse to ReCrystallizeServer\ViewFolder.aspx to open the Folder View page. Click on reports or other documents to view.

System Requirements

- Windows Server 2019, 2016, 2012 R2, 2012, 2008 R2 with the IIS Web Server Role and ASP.NET Role Service installed. Recommended for production use.

Windows 7, 8, 8.1, or 10 – Professional, Business, Enterprise or Ultimate Editions with the IIS feature installed. ReCrystallize Server will install and run properly with these desktop/workstation versions of Windows. They are not recommended for high-volume production use due to limitations in IIS.

- Microsoft .NET Framework version 4.5.2 or later.
- 1.5 GB free disk space.
- 4 GB RAM minimum recommended.
- 2 or more processor cores recommended.
- Installing a printer using the same driver and printer name as on the machine used to create the reports (.rpt files) is recommended to ensure proper support for non-standard paper sizes and other layout characteristics when viewing reports in the web browser.
- Database client software (e.g. Oracle client) and/or ODBC connections using System DSNs that may be needed by the reports must be configured on the web server.

Installation Notes

The ReCrystallize Server Setup program makes the following changes to your server:

- Installs Microsoft .NET Framework 4.7.2 if it's not already installed and an internet connection is available to download.
- Installs ASP.NET in IIS if not present.
- Installs the ReCrystallize Server application files and folders. The default location is C:\ReCrystallizeServer.
- Creates a new IIS Application Pool named ReCrystallizeServer for use by the application.
- Creates a new IIS application named ReCrystallizeServer in the Default Web Site.
- Registers ASP.NET 4.5 with IIS. This will provide support to run ASP.NET web pages.
- Installs or updates SAP Crystal Reports Runtime for .NET Framework SP30.
- Installs other components required for ReCrystallizeServer.

Configuration Settings

Logging Level

Sets the level of detail in the log file.

Disabled:	Logs no events and prevents temporary override of the logging level.
Off:	Logs no events but allows temporary override of the logging level.
Error:	Logs only error events.
Warning:	Logs additional warning messages that may be of concern.
Info:	Logs additional information at key points.
Debug:	Logs the most detail, including which database connections are used to view reports.

Stored Credential Encryption

Username and/or passwords stored in the settings file may be encrypted for added security. Note that the settings file is usually readable only by administrators with access to the server's file system.

For easier troubleshooting, leave the username and password encryption turned off during initial setup and testing. The encryption may be turned on or off at any time from the Settings page.

Administrator Login

Sets the username and password required to access ReCrystallize Server administration pages.

Database Login

Sets the username and password ReCrystallize Server will use to log in to your database server and retrieve report data.

Advanced Database Connections

If your reports use multiple databases or multiple database user accounts, use this section to enter additional database details. Select a numbered connection, then complete the fields below.

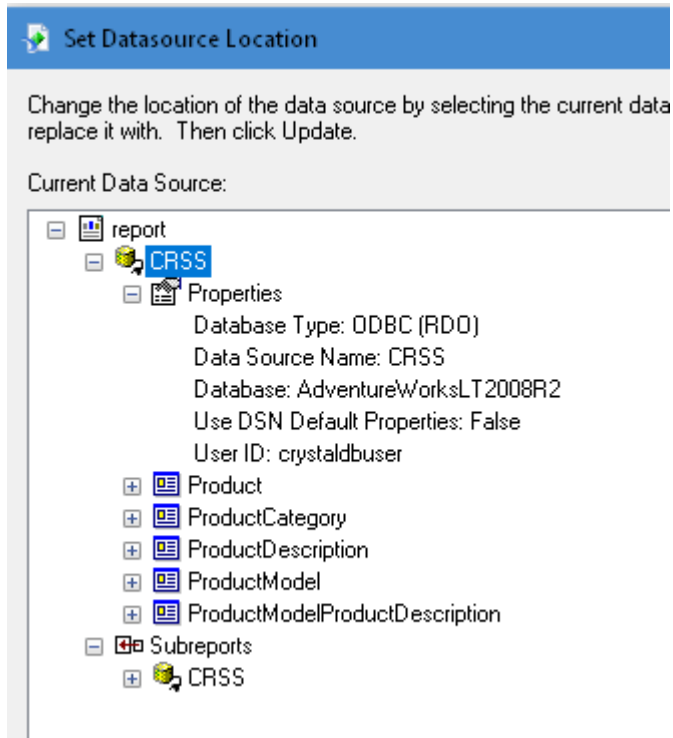
- The Connection and Database values are not required to specify a numbered Username and Password pair when opening a report.
- To automatically match connections found in reports to the correct username and password, also complete the Connection and Database entries.
- The Connection and Database may be used to replace a report's normal database connection. For example, a report designed using a development database server could use a production database server instead. Similarly, if you had separate databases and/or database servers for different users you could specify which connection to use.

Connection – The connection entered here should exactly match the Data Source Name shown in Crystal Reports under the Database menu, Set Datasource Location. This may be the ODBC DSN name or the database server name.

Database – The database value should usually match the Database value shown in Crystal Reports. The Database value is often used for SQL Server and is typically not used for Oracle databases. You may enter a different Database name if you wish to change which database the report uses when run in ReCrystallize Server.

Username – The database username required for login.

Password – The database password required for login.



Reports Folder

The Root Folder value controls where ReCrystallize Server looks for your Crystal Reports .rpt files. It also controls the default folder opened in Folder View. If this value is empty, the Reports folder beneath the ReCrystallizeServer folder is used.

Caution: Do not reference a folder using a mapped network drive letter. The web server process is not aware of drive letter mappings. If possible, locate the report files on the same server. If a network location must be used, specify a UNC path in the form

\\server\share\folder

If a network folder on a different server is used, the ReCrystallizeServer Application Pool in IIS must have its Identity set to a domain / Active Directory user account that has access to read files in the network location. See the Special Situations section in this document for additional information.

Changing the Allow Absolute Paths setting will allow passing in a full pathname (such as c:\Windows\Data) to the viewfolder.aspx page and will display folder contents.

When this setting is false, the viewfolder.aspx page will ignore absolute paths beginning with a drive letter and display the Report Root folder instead.

Caution: Changing this setting to true may allow end users to see and open files in any location on your server, including folders that are not part of the website. ReCrystallize Server will display only common document file types, including Crystal Reports, Word, Excel, and PDF.

Multiple Active Reports Per User

With this setting enabled, each user may view and interact with multiple reports at the same time. This includes multiple copies if the same report.

When this settings is disabled, each user may interact with one report at a time. Disabling the setting may reduce demand on web server resources.

Use Saved Data

The default off setting causes report data to be refreshed from the database each time the report is viewed, regardless of whether the .rpt file was saved with data. Turn this setting on to show data saved in the .rpt file if present instead of refreshing the data.

Email

Enter your SMTP server settings for sending email from ReCrystallize Server. Also enter a "From" name and email address to appear on messages, a message subject line, and any text to include in the body of the message. To test your email settings, enter a "To" address and click the "Save Email Settings and Send Test Message" button.

Report Request Encryption

The Encryption Key entered here is used to encrypt and decrypt parameter values and database credentials. The key length should be 32 characters.

When Parameter Encryption is required, report parameters sent as part of the web request must be encrypted. Unencrypted values are ignored.

When Database Encryption is required, database credentials sent as part of the web request must be encrypted. Unencrypted values are ignored.

Printing

If the Enable ActiveX Printing setting is selected, ReCrystallize Server will attempt to use the native Windows print dialog when printing reports from the client web browser. This setting takes effect only for client web browsers that support ActiveX controls such as Internet Explorer running on Windows. Reports will be printed by way of a PDF export in any browser that does not support ActiveX controls.

Record Selection Formula

If Allow Record Selection Formula is enabled, a web request may temporarily modify a report's Record Selection Formula. When this setting is false, the viewreport.aspx page will ignore any attempts to modify the Record Selection Formula.

Caution: Changing this setting to true could allow users to see more data or different data than a report was originally designed to include.

Report Viewer Settings

ReCrystallize Server supports three different sets of report viewer settings identified as V1, V2, and V3.

Viewer Option	Effect
Enable Toolbar	Shows or hides the entire viewer control toolbar.
Crystal Reports Logo	Shows the Crystal Reports logo at the upper right corner of the viewer.
Drill Up Button	Shows or hides the Drill Up button in the viewer toolbar.
Go to Page Button	Shows or hides the Go to Page button in the viewer toolbar.
Group Tree Button	Shows or hides the Group Tree button in the viewer toolbar.
Page Navigation Buttons	Shows or hides the page back and page forward buttons.
Parameter Panel Button	Shows or hides the button that opens the parameter selection panel at the left of the viewer.
Print Button	Shows or hides the Print button in the viewer toolbar. Without the print or export button exposed, users will be unable to print the entire report in one step. The web browser's print function may still allow users to print the report as web pages, one page at a time.
Refresh Button	Shows or hides the Refresh button in the viewer toolbar. The Refresh button allows report data to be updated from the database without leaving the report.
Search Button	Shows or hides the Search button in the viewer toolbar.
Zoom Factor Selection	Shows or hides the Zoom Factor selection list in the viewer toolbar.
Drill Down	Enables or disables drill-down capability to open subreports.
Allow Database Logon Prompting	Enables or disables database logon prompting when automatic database logon fails. In most cases, this setting should be disabled. Enabling the option may be helpful for troubleshooting database logon issues. It can also be used when individual users have separate database accounts (this is not common).
Allow Parameter Prompting	Enables or disables parameter prompting from the viewer. If parameter prompting is disabled, all required parameter values must be supplied in the URL or POSTed from a form.
Prompt for Parameters on Refresh	Determines whether the viewer will prompt for new parameter values when the report viewer's Refresh button is clicked. Setting this value to false will cause the previously selected parameter values selected to be re-used when the report data is refreshed from the database.
Show Group Tree	Shows or hides the Group Tree toggle button.

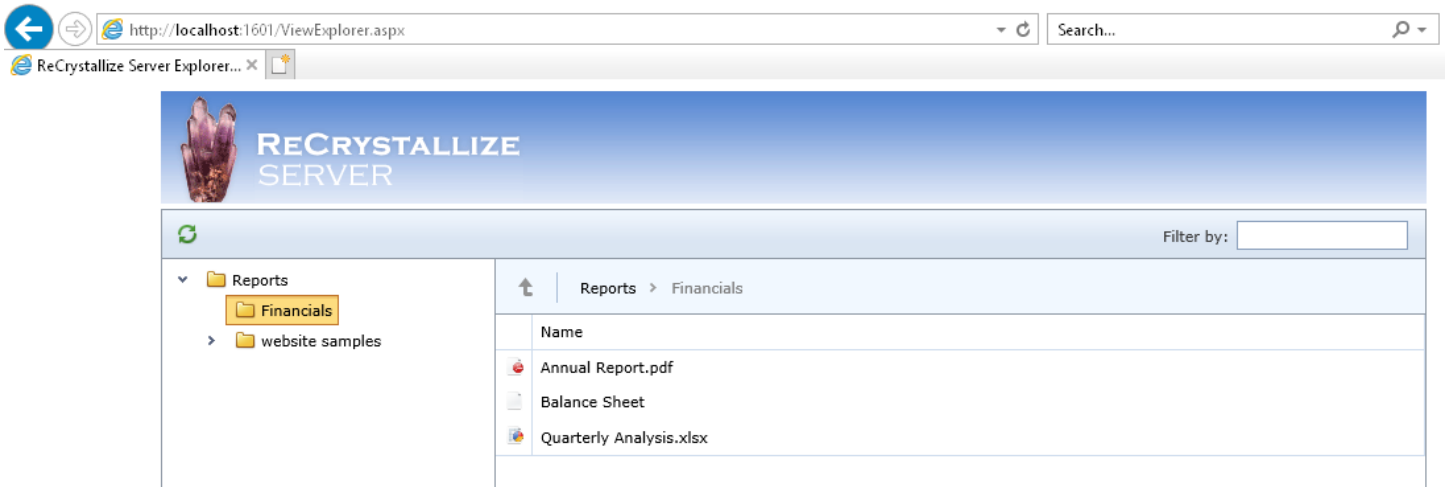
Export Button	Shows the Export button in the viewer toolbar. Hiding the export button removes the ability to export the report to PDF, Excel and so on.
Continuous Scrolling	Displays reports as one continuous scrolling page or separate pages. The setting may be overridden for a report by ending its filename in "scrolling.rpt" The setting may be overridden in a web request by adding scroll=true or scroll=false.
Center Viewer on Page	Causes the report viewer to appear centered in on the web page instead of at the left side of the web page.
Automatically Size Height in pixels Width in pixels	To set a specific height and/or width for the report viewer control, turn off the Automatically Size settings and enter the desired number of pixels. This may be useful when screen space is limited or to allow for easier report scrolling.
Initial Zoom Percent	Sets the initial viewer zoom percentage when the report is opened. The default is 100%.
Hyperlink Target	Sets the HTML target page for hyperlinks in the report. The default is "_blank", which will open a new browser tab or window.

In addition to these viewer controls, the file types available to export from the viewer's export button may be selected. For example, you could limit the available export choices to PDF and RTF formats.

Browsing Folders and Files with ReCrystallize Server

ReCrystallize Server includes an Explorer View page and a Folder View page. Both display Crystal Reports .rpt files and other commonly used document file types including Word, Excel, and PDF. Click a Crystal Reports file to run the report and open it in the interactive viewer. Clicking other file types will download the file or open the file in the browser, depending on client settings.

The Explorer View page provides a filtering capability that enables users to search for a particular filename.



To open the Explorer View page in a browser, use a web address in the form

`http://servername/ReCrystallizeServer/ViewExplorer.aspx`

where **servername** is the name or IP address of your server (or localhost if viewing on the server) . On the server, a Browse Reports – Explorer View shortcut is available in the Start Menu.

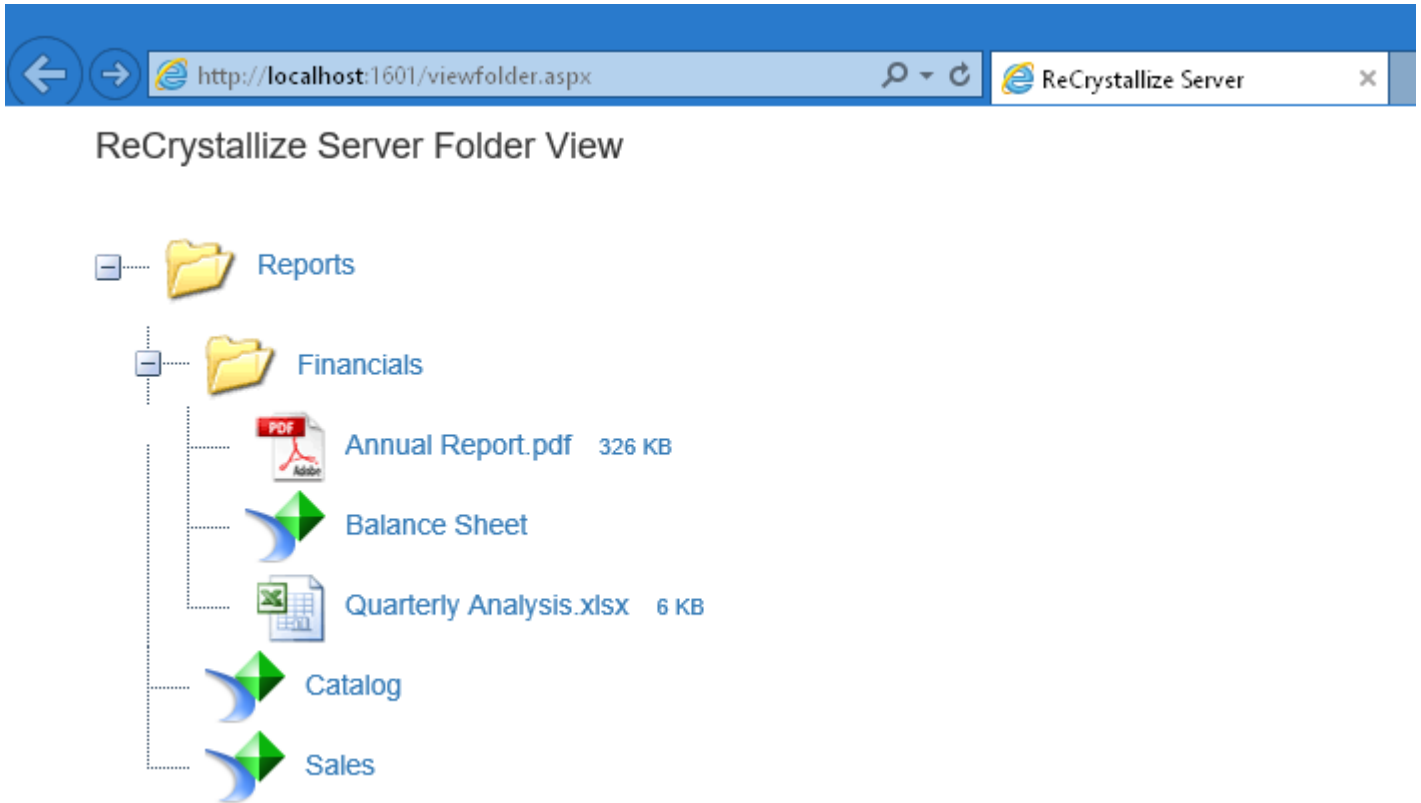
By default, the Explorer View will open to the Reports folder beneath the ReCrystallize Server application. The default folder is configurable on the Settings page under Administration.

The Explorer View page will accept a parameter *folderName* to open directly to another location. For example,

`http://youserver/ReCrystallizeSever/ViewFolder.aspx?folderName=financials`

would open to the Financials folder beneath the default folder.

The Folder View page provides larger icons and links. It may be preferable for use with smaller numbers of files or with touch interfaces.



To open the folder view in a browser, use a web address in the form

`http://servername/ReCrystallizeServer/ViewFolder.aspx`

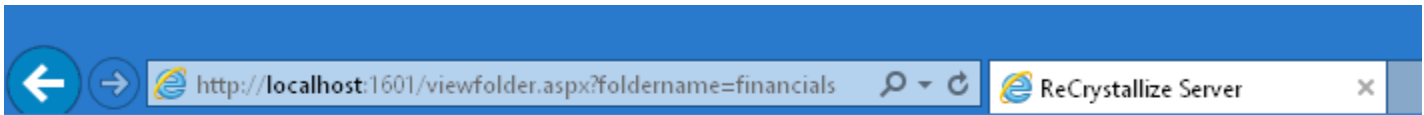
where **servername** is the name or IP address of your server (or localhost if viewing on the server) . On the server, a Browse Reports – Folder View shortcut is available in the Start Menu.

By default, the folder view will open to the Reports folder beneath the ReCrystallize Server application. The default folder is configurable on the Settings page under Administration.

The folder view page will also accept a parameter *folderName* to open directly to another location. For example,

`http://youserver/ReCrystallizeSever/ViewFolder.aspx?folderName=financials`

would open to the Financials folder beneath the default folder.



ReCrystallize Server Folder View



In addition to relative paths beneath the default folder, the Folder View and Explorer View pages accept absolute paths to a folder using either a drive letter or UNC path to a network location. For example,

`http://youserver/ReCrystallizeServer/ViewFolder.aspx?folderName=D:\Crystal`

would open to the Crystal folder on the web server's drive D:. Similarly,

`http://youserver/ReCrystallizeServer/ViewExplorer.aspx?folderName=\\myFileServer\myFiles`

would open to the myFiles folder on server myFileServer.

Use of absolute paths is disabled by default because it could allow users to view sensitive files in folders that would otherwise be inaccessible. Absolute paths may be enabled on the Settings page.

Adding a Custom Folder Image

To add a custom image to be displayed beside a specific folder, place an image file matching the folder name in the directory

`ReCrystallizeServer\images\treeview`

The image must be a .gif, .jpg, or .png file. For example, to display a custom image with the "financials" folder, add an image named "financials.jpg" to the treeview directory.

Managing Files with ReCrystallize Server

ReCrystallize Server includes web-based file management, allowing a ReCrystallize Server administrator to add or remove reports and other files without requiring direct access to the web server's file system. To access the file management page, log in under Administration and click the Manage Files button. The file management page may also be accessed directly at

<http://youserver/ReCrystallizeServer/Admin/FileManagement.aspx>

Administration Home >> File Management

Path: Reports

Filter by:

Name	Date modified	Size
Aged_Accounts_Receiveable-dynamic.aspx	7/28/2016 5:08:56 PM	562 B
Aged_Accounts_Receiveable-dynamic.aspx.vb	7/28/2016 5:08:56 PM	3.67 KB
Aged_Accounts_Receiveable-parameters.aspx	7/30/2016 3:27:14 PM	3.23 KB
Aged_Accounts_Receiveable.rpt	7/28/2016 2:55:09 PM	441 KB
Annual Report Template.docx	9/8/2016 5:20:42 PM	455.16 KB
banner.psd	8/25/2017 10:28:50 AM	121.91 KB
Catalog with date parm.rpt	10/14/2016 3:12:13 PM	440.5 KB
Catalog with hyperloink.rpt	9/1/2017 4:05:38 PM	438 KB
Catalog.rpt	5/12/2014 5:39:07 PM	437.5 KB
CatalogWithoutSavedData.rpt	10/17/2016 4:14:26 PM	203 KB
CrystalReportWithParms.rpt	7/30/2016 5:40:47 PM	18 KB
PCG-PROCESS_Client.rpt	8/10/2017 1:24:31 PM	19.46 MB
Sales uploaded.rpt	2/5/2018 4:43:35 PM	412 KB
Sales.rpt	7/20/2016 4:04:22 PM	412 KB

Drop file(s) here [Browse...](#) Upload

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Viewing Reports with ReCrystallize Server

To view a Crystal Report click on the file from the Explorer View page, from the Folder View page or use a web address in the form

`http://servername/ReCrystallizeServer/ViewReport.aspx?reportName=yourreport.rpt`

where *servername* is the name or IP address of your server (or localhost if viewing on the server) and *yourreport.rpt* is the name of a Crystal Report file.

In this example, the report file is located in the Reports folder beneath C:\ReCrystallizeServer. The default folder may be changed in Settings. To view a report named "Sales.rpt" on a server named "Crystal", the web address would be

`http://crystal/ReCrystallizeServer/ViewReport.aspx?reportName=Sales.rpt`

or the shortened equivalent

`http://crystal/ReCrystallizeServer/ViewReport.aspx?report=Sales.rpt`

The report viewer will prompt for any required parameter values, similar to the way the Crystal Reports designer prompts.

Passing parameter values in the URL

It may be convenient to pre-set some or all parameter values as part of a web link or when opening a report from another application. ReCrystallize Server supports passing parameter values as part of the URL or POSTing an HTML form with appropriately named fields to the ViewReport.aspx page. When a parameter value is set this way, the user is not prompted to select the parameter value before the report is displayed.

Parameter values may be referenced in either of two ways, by name or by number. Consider an example report named "library.rpt" that has two parameter values: author and title. Author is the first parameter in the report and title is the second. The parameters may be set by name using the syntax

promptex-*parametername=parametervalue*

In the library example report, the link could be:

`http://yourserver/ViewReport.aspx?reportName=library.rpt&promptex-author=Shakespeare&promptex-title=Hamlet`

In most cases, the **promptex** prefix may be omitted to use just the parameter name. The following link is equivalent to the example above.

`http://yourserver/ViewReport.aspx?reportName=library.rpt&author=Shakespeare&title=Hamlet`

This link would set the author parameter value to "Shakespeare" and the title parameter value to "Hamlet". The user viewing the report would not be prompted for either parameter value before the report is displayed. If only one of the parameter values were passed in this way, the user would be prompted for the other value before the report is displayed.

Parameters may also be referenced by number. Recall that author is the first parameter in the report and title is the second. An equivalent link to the one above would be

```
http://yourserver/ViewReport.aspx?reportName=library.rpt&P1=Shakespeare&P2=Hamlet
```

When setting multiple values for parameter, separate each value with a comma and enclose each value in quotation marks as shown in the example below. **The parameter must be set to accept multiple values in the Crystal Reports designer.**

```
http://yourserver/ViewReport.aspx?reportName=library.rpt&promptex-author=Shakespeare&promptex-title="Hamlet","Macbeth"
```

Use the following format to specify date values:

Date (YYYY, MM, DD)

For example, setting a date value of May 23, 2016, would look something like

```
http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=sales.rpt&promptex-day=Date(2016,05,23)
```

ReCrystallize Pro style date fields are also supported using the format PxY, PxM, PxD where x represents the parameter number, Y is the year, M is the month, and D is the date. For example, &P2Y=2020&P2M=12&P2D=25 is equivalent to P2=Date(2020,12,25).

Subreport parameters

When setting subreport parameter values, use the same format as other parameters. In addition, add another value to provide the name of the subreport in which the parameter should be set, following the format

yourparameter-subrpt=subreportname

For example, to set a parameter named author that is used in a subreport named books, the URL would be

```
http://yourserver/ViewReport.aspx?reportName=library.rpt&promptex-author=Shakespeare&author-subrpt=books
```

Note that this is required only for parameters that are defined and used exclusively by the subreport. It is not required for subreport parameters that are linked to a main report parameter and share its value.

Posting parameter values from a form

In addition to passing values as part of the web address (GET), ReCrystallize Server will accept parameter values submitted from a form (POST).

The following web link and the HTML form below the link are equivalent:

```
http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=library.rpt
&promptex-author=Shakespeare&promptex-title=Hamlet
```

Example HTML form:

```
<html>
<body>

<form action="http://yourserver/ReCrystallizeServer/ViewReport.aspx">

  <input type="hidden" name="reportName" value="library.rpt">

  Enter Author Last Name:<br>
  <input type="text" name="promptex-author" value="Shakespeare">
  <br><br>

  Enter Title:<br>
  <input type="text" name="promptex-title" value="Hamlet">
  <br><br>

  <input type="submit" value="View Report">

</form>

</body>
</html>
```

In this example, the author and title parameters are visible as text fields and editable by the user. They could instead be hidden like the report name or use another standard input method such as a drop-down list of values, a radio button, or checkbox.

Encrypting parameter values

ReCrystallize Server provides an encryption capability for parameter values. Using encrypted values for parameters will prevent end users from determining the true value of the parameter, even if the encrypted value is visible as part of the web address. Enforcing parameter encryption helps prevent end users from changing the intended value because a non-encrypted value will not be accepted and the end user will be unable to provide a correct encrypted value.

Two encryption methods are available in ReCrystallize Server: AES and Triple DES. Either may be used to provide encrypted parameter values. To use AES, name the field using one of the following formats:

promptAES-*parametername*

Px-AES where x represents the number parameter number.

To use Triple DES, name the field using one of the following formats:

prompt3DES-*parametername*

Px-3DES where x represents the number parameter number.

For example, the non-encrypted "author" parameter in the URL below

`http://yourserver/ViewReport.aspx?reportName=library.rpt&promptex-author=Shakespeare`

with AES encryption becomes

`http://yourserver/ViewReport.aspx?reportName=library.rpt&promptAES-author=3zDqgZAX%2bmLv6m0AFuxDcg%3d%3d`

or

`http://yourserver/ViewReport.aspx?reportName=library.rpt&P1-AES-author=3zDqgZAX%2bmLv6m0AFuxDcg%3d%3d`

where Author is the first parameter occurring in the library report.

The actual encrypted strings will vary depending on the encryption key, which may be customized in Settings.

To require encrypted parameters, change the Require Parameter Encryption setting to true. When Require Parameter Encryption is set to true, parameters must use the **promptAES** or **promptDES** format. Non-encrypted values using **promptex** will be ignored.

Three tools are available to assist with encrypting text values.

- An interactive web page that accepts a string and provides encrypted versions for both AES and Triple DES is available at **ReCrystallizeServer/EncryptTool.aspx**

- The page at

ReCrystallizeServer/EncryptFile.aspx

will accept a text file with one value string on each line. It will then return a file with the corresponding AES encrypted values, one string on each line of the file.

- A web service is available at

ReCrystallizeServer/EncryptService.asmx

The web service accepts two inputs, the text string to be encrypted and the encryption method, either **AES** or **3DES**.

It returns the corresponding encrypted text string.

Encrypting the entire report request

The entire report request, including the report name, parameters, and all other values may be encrypted. For an encrypted request, use `ViewReportEncrypted.aspx` instead of `ViewReport.aspx`. When calling `ViewReportEncrypted.aspx`, pass the encrypted string in the field "request" in the URL or in a web form. For example, with encryption

```
http://yourserver/ViewReport.aspx?reportName=library.rpt&author=Shakespeare
```

becomes

```
http://yourserver/ViewReportEncrypted.aspx?request=KCLffZ0JX9W7UBWtv9p%2boDwv6%2bT5Mzudpo%2fgI9lUWGUps2v1BA61hMl5Y9NY%2f9xD
```

The actual encrypted string value will vary depending on the encryption key set on the Settings page.

Use the same methods as with encrypting parameter values to obtain the encrypted string. Construct a request as you normally would for `ViewReport.aspx`, then encrypt the portion of the URL after the initial ? character.

For the example request

```
ViewReport.aspx?reportName=chart.rpt&myParameter=ABC
```

encrypt the portion

```
reportName=chart.rpt&myParameter=ABC
```

Only AES encryption is supported.

Adding an expiration date to the report request

You may add an expiration date and/or time to the report request by including **expires=** as part of the URL or in a form field that POSTs to the `ViewReport.aspx` page. For example, the request below will return an expired message and will not show the report.

<http://yourserver/ViewReport.aspx?reportName=library.rpt&expires=08/18/2018>

ISO 8601, RFC 1123, and other formats are valid for the expires value. The following show date and time formats and the resulting interpreted value. Non-ISO formats may differ depending on your server's region settings.

Description	Original expires value	Interpreted value using US format (MM/DD/YYYY)
Date and time	08/18/2018 07:22:16	8/18/2018 7:22:16 AM
Date only	08/18/2018	8/18/2018 12:00:00 AM
Month and year	8/2018	8/1/2018 12:00:00 AM
ISO 8601 UTC	2018-08-18T07:22:16.0000000Z	8/18/2018 12:22:16 (assumes 5 hour UTC difference from server's local time)
RFC 1123	Sat, 18 Aug 2018 07:22:16 GMT	8/18/2018 12:22:16 (assumes 5 hour UTC difference from server's local time)
Date and time with time zone	08/18/2018 07:22:16 -5:00	8/18/2018 5:22:16 AM (time dependent on server's time zone)

The expires value as plain text may be easily modified by users. When included as part of an encrypted request the value is not observable and is tamper resistant. For example, when encrypted the request

<http://yourserver/ViewReport.aspx?reportName=library.rpt&expires=08/18/2018>

becomes

<http://yourserver/ViewReportEncrypted.aspx?request=KCLffZ0JX9W7UBWtv9p%2boPpatu%2fUcI61YpF9Y1XruZnpuNv5ZgaYxPnosYYPBa0v>

Setting report viewer options

Report viewer controls and functions, including

- Control toolbar
- Print Button
- Export Button
- Zoom Level
- Hyperlink target

may be customized on the Configuration Settings page under Administration. ReCrystallize Server provides 3 customizable sets of viewer options.

The default viewer settings, labeled V1 in Settings, with most report viewer controls and functions enabled will be used if no viewer selection is passed to the report or if

V=1

is passed on the URL or POSTed from a form.

`http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=sales.rpt`

and

`http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=sales.rpt&V=1`

are equivalent.

The second set of viewer settings is labeled V2 in Settings. The defaults for V2 enable most report viewer controls and functions except the print and export buttons. Any of the options may be customized to your requirements in Settings. To use the second set of viewer options, send

V=2

to the report, for example

`http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=sales.rpt&V=2`

The third set of viewer settings, labeled V3 in Settings, removes most user controls and presents the report with a minimal user interface. This may be useful for public display on a large screen where no user interaction with the report is expected. As with the other two sets of viewer options, all the settings may be customized by changing options in Settings. To use the third set of viewer options send

V=3

to the report, for example

`http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=sales.rpt&V=3.`

Automatically refreshing and updating a report on a screen

ReCrystallize Server includes an auto-refresh feature to automatically update a report's data every x minutes without user interaction. This is useful for displaying continuously updated reports in a public setting. For example, a status report could be displayed on a large monitor in a waiting room, factory, or warehouse setting where the report would automatically update to show current information.

To use the auto-refresh feature, include

autoRefresh=x

in the URL or as a form field where x indicates the interval in minutes to refresh the report.

For example, to refresh a report named status.rpt every 5 minutes,

`http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=status.rpt&autoRefresh=5`

Using data saved within the Crystal Reports .rpt file

Crystal Reports offers an option labeled "Save Data with Report" in its File menu. Saving the report file with this option selected stores the current data shown in Crystal Reports within the .rpt file.

By default, ReCrystallize Server ignores data saved within the .rpt file and refreshes the report data from the database each time the report is viewed. It can be convenient to take advantage of the saved data feature in cases where

- The report data does not change frequently.
- The report takes too long to refresh from the database, making it impractical to refresh the data interactively in the web browser, or refreshing the report places an excessive burden on the database server. Therefore, you may wish to update the report data manually using the Crystal Reports designer or using another process such as report scheduling software outside of ReCrystallize Server and then display the most recently updated data.
- You do not wish to enable connectivity from the web server to the report's database.

To display saved data in the web browser include

useSavedData=true

in the report URL or as a form field. For example,

```
http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=catalog.rpt&useSavedData=true
```

The following limitations apply when using the saved data option:

- Report parameters are not used.
- The report viewer's Refresh control is disabled.
- Drill-down subreports are unavailable because data from drill-down subreports is not saved within the .rpt file.

Forcing immediate data refresh

If a report has been recently viewed and the report is then viewed again by the same browser, there may be a short period of time when the most current data from the database is not initially displayed. In this case, clicking the Refresh button in the report viewer toolbar will display the most current data, but clicking the web browser's Refresh button may not.

To force the report to show the most current data immediately upon opening, add

forceRefresh=y

to the report request, for example

```
http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=catalog.rpt&forceRefresh=y
```

Exporting Reports with ReCrystallize Server

Instead of viewing reports in the browser using the interactive HTML-based viewer, ReCrystallize Server can export reports directly to a file. To export a report, add the

exportfmt=

or equivalent

exttyp=

parameter to the URL or include it as a field when POSTing a form to ReCrystallize Server's viewreport.aspx page.

The following export formats are available:

File format	File extension	Exportfmt parameter value
Adobe Acrobat	.pdf	PDF
Comma Separated Values	.csv	CSV
Crystal Reports	.rpt	RPT
Crystal Reports protected / read-only	.rptr	RPTR
Editable Rich Text	.rtf	EDITABLERTF
Excel 97-2003	.xls	EXCEL
Excel 2007 – 2016	.xlsx	EXCELWORKBOOK
Excel Data Only (without formatting)	.xls	EXCELDATA
Excel Data Only with Maintain Relative Object Position	.xls	EXCELDATAMAINAINPOS
Microsoft Word	.doc	WORD
Rich Text	.rtf	RTF
Tab Separated Text	.ttx	TAB
Text	.txt	TEXT
XML	.xml	XML
HTML 4	.html	HTML

Supported only for saving to disk with the saveTo option.

For example, to export a report to PDF format the URL would be similar to

<http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=library.rpt&promptex-author=Shakespeare&exportfmt=PDF>

Important: All parameter values required by the report must be included in the report request, either as part of the URL or POSTed in form fields. Users will not be prompted for parameter values. The report will fail to export if all required parameter values are not set.

The exported file will open in the browser or be saved to disk, based on the client browser configuration. To request the exported file to be treated as a download and saved to disk, include the option **download** parameter with a value of YES or TRUE.

```
http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=library.rpt&promptex-  
author=Shakespeare&exportfmt=PDF&download=y
```

As with parameter values, the export format may be posted from a form rather than included in the link.

To specify a filename for downloaded files, include **exportname** in the request. The filename may be a literal string or may use substitutions of parameter values enclosed with asterisks. The following examples produce the same results:

```
http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=library.rpt&promptex-  
author=Shakespeare&exportfmt=PDF&download=y&exportname=Shakespeare
```

```
http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=library.rpt&promptex-  
author=Shakespeare&exportfmt=PDF&download=y&exportname=*promptex-author*
```

Emailing Report Output

Instead of displaying a report on screen, ReCrystallize Server can email the report output to one or more recipients.

Your SMTP server settings must be entered on the ReCrystallize Server Administration Settings page before sending email.

To email a report add the

mailto=

parameter to the URL or include it as a field with POSTing a form to ReCrystallize Server's ViewReport.aspx page.

Include an email address as the value for the mailTo parameter. To send the report to multiple recipients, separate each email address with a comma or semicolon.

Use the **exportfmt** value to specify the report output format. If no **exportfmt** is specified along with **mailTo**, PDF will be used as the default. As with exporting a report, any required Crystal Reports parameter values must be included in the request.

ReCrystallize Server will display a success or failure message after attempting to send email. If the connection to the SMTP server is slow or fails, the web page may appear to hang for up to 15 seconds.

```
http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=library.rpt&promptex-  
author=Shakespeare&mailto=info@recrystallize.com
```

```
http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=monthly.rpt  
&mailto=info@recrystallize.com,sales@recrystallize.com&exportfmt=EXCEL
```

The following email options may be included in the web request. If these values are provided, they will be used instead of the default values configured on the settings page.

Email Option	Function	Values Allowed
mailFrom	Sets the email From address.	Any email address.
mailFromName	Sets the email From display name.	Any text.
mailCC	Add recipients to the email CC list.	One or more email addresses separated by commas or semicolons.
mailBCC	Adds recipients to the email BCC list.	One or more email addresses separated by commas or semicolons.
mailSubject	Sets the email subject line.	Any text.
mailBody	Sets the email body text.	Any text.
mailBodyFile	Sets the email body text to the contents of the specified file located on the server.	<p>A filename.</p> <p>A folder path relative to the ReCrystallize Server application folder (for example, email\mytext.txt) may be included with each filename.</p> <p>An absolute folder path beginning with a drive letter or UNC path (for example, C:\EmailFiles\email.htm) may be included only if the Allow Absolute Paths setting is enabled.</p> <p>Files ending with .txt will be formatted as text. Files ending with .htm will be formatted as HTML.</p>
mailAttach	Adds one or more files to the email as attachments.	<p>One or more filenames separated by commas.</p> <p>A folder path relative to the ReCrystallize Server application folder (for example, email\myAttachment.pdf) may be included with each filename.</p> <p>An absolute folder path beginning with a drive letter or UNC path (for example, D:\Documents\Contacts.docx) may be included only if the Allow Absolute Paths setting is enabled.</p>
mailPriority	Sets the email priority.	High, Normal, or Low

Saving Report Output to Disk

Instead of displaying a report on screen, ReCrystallize Server can save the report output to a disk file.

To save a report add the

saveTo=

parameter to the URL or include it as a field with POSTing a form to ReCrystallize Server's ViewReport.aspx page.

Include a file name and optional path as the value for the `saveTo` parameter. If a filename with no path is used, the file will be saved to the default Reports root folder. If a relative path is included as in

```
http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=library.rpt&promptex-  
author=Shakespeare&saveTo=output\library.pdf
```

the report will be saved to the specified folder beneath the default Reports folder. An absolute path including a local drive letter or UNC location may be used.

Use the `exportfmt` value to specify the report output format. If no `exportfmt` is specified along with `saveTo`, PDF will be used as the default. As with exporting a report, any required Crystal Reports parameter values must be included in the request.

ReCrystallize Server will display a success message if the file is saved.

Printing Reports with ReCrystallize Server

ReCrystallize Server can print reports directly to printers that are configured on the web server. To print a report, add the `serverPrinter=`

parameter to the URL or include it as a field when POSTing a form to ReCrystallize Server's `viewreport.aspx` page.

The value assigned to `serverPrinter` should exactly match the name of the printer as defined in the Windows Printers folder or Windows Printers & Scanners, for example

```
http://yourserver/ViewReport.aspx?reportName=library.rpt&promptex-author=Shakespeare&serverPrinter=HP LaserJet
```

where the printer on the web server is named "HP LaserJet".

Note that this option does not affect user-initiated printing from the web browser and it cannot automatically print to a printer attached to a client PC.

Optional parameters:

`copies=` Prints multiple copies of the same report.

`fromPage=` Specifies the first page of a range to be printed. If omitted, page 1 is used.

`toPage=` Specifies the last page of a range to be printed. If omitted, the last page is used.

Troubleshooting Printing Issues

By default, ReCrystallize Server runs in the context of the LocalSystem account to ensure that it can read and write all required files on the server. Printers that are available to other Windows user accounts may not be defined to the LocalSystem account, and therefore may not be available to ReCrystallize Server. To make the printers available to the LocalSystem account, a utility program named `ReCrystallizeServerPrinterFix.exe` is available in the ReCrystallizeServer folder.

If ReCrystallize Server indicates that the named printer is not available, right-click the `ReCrystallizeServerPrinterFix.exe` and Run As Administrator. All available printers will be copied in the Windows registry so that they are visible to LocalSystem and therefore available to ReCrystallize Server.

Alternatively, the IIS Application Pool named ReCrystallizeServer may be changed to another Identity such as NetworkService which normally has access to installed printers. Please note that changing the Application Pool's Identity may prevent ReCrystallize Server from reading or writing some files. If errors or unexpected behavior occurs after making this change, modify file system permissions for the affected files or change the Application Pool Identity back to LocalSystem.

Modifying a Report's Record Selection Formula

ReCrystallize Server supports changing the Record Selection Formula when viewing a report. The Record Selection Formula is generally used to limit the set of data included in a report.

You may add condition(s) to the report's existing Record Selection Formula using

appendRSF=

or replace the existing formula entirely using

replaceRSF=

As with parameters, these may be passed on the URL or POSTed to the viewreport.aspx page from a form.

NOTE: For modified Record Selection to take effect, the Allow Record Selection Formula setting must be enabled in Settings. Carefully consider any potential data security concerns when enabling this feature. It could allow end users to see more data or different data than the report was originally designed to include.

The *replaceRSF* option will completely replace the original Record Selection Formula. The *appendRSF* option will combine the value with the existing Record Selection Formula using a logical AND. In either case, the value provided must be valid Crystal formula syntax in the context of the specific report. ReCrystallize Server does not perform any Record Selection Formula syntax checking. If an invalid formula value is provided, an error will result.

Use of the *exportfmt* option combined with *appendRSF* or *replaceRSF* is not supported and may have unpredictable results.

Record Selection Formula Examples

Consider a report with a database field "author" where you wish to limit the report contents to those records where the author field is equal to "Shakespeare". Using *replaceRSF*, the web address would be similar to

```
http://yourserver/ViewReport.aspx?reportName=library.rpt&replaceRSF={author}="Shakespeare"
```

In this example,

```
{author}="Shakespeare"
```

is the complete Crystal formula syntax for the Record Selection Formula to be applied. Please consult Crystal Reports documentation or the formula editor in the Crystal Reports designer to work out the correct formula syntax.

ReCrystallize Server does not check for correct formula syntax.

Now assume that the report in the previous example had

```
{author}="Orwell"
```

set as its default Record Selection Formula at design time using the Crystal Report designer. You could further limit data in the report by adding to the existing Record Selection Formula with appendRSF.

```
http://yourserver/ViewReport.aspx?reportName=library.rpt&appendRSF={title}="1984"
```

This would modify the effective Record Selection Formula to

```
{author}="Orwell" AND {title}="1984"
```

As with parameter values, the selection formula may be posted from a form rather than included in the link.

In many cases, including a parameter value in the Record Selection Formula at design time and passing in that parameter value at runtime may be preferable to modifying the Record Selection Formula.

In the example above, an equivalent approach would be to create a parameter "authorname" in Crystal Reports and then set the Record Selection Formula to

```
{author}={?authorname}
```

When viewing the report with ReCrystallize Server, the author name could simply be passed as a parameter to control record selection:

```
http://yourserver/ViewReport.aspx?reportName=library.rpt&promptex-authorname=Shakespeare
```

or

```
http://yourserver/ViewReport.aspx?reportName=library.rpt&promptex-authorname=Orwell
```

Advanced Database Configuration

Database logon prompting

The "Allow Database Logon Prompting" setting in Report Viewer Settings controls whether users may be prompted interactively for database credentials.

The default setting is off and is recommended for most use cases. If the automatic database logon fails, an error will be displayed. This is often preferred when database user accounts are unknown to end users.

If the setting is turned on and the automatic database logon fails, the user will be prompted for a database logon. This may be helpful for troubleshooting. It also allows for cases where individual users have different database accounts and those accounts must be used to retrieve the correct data for a report.

Using alternate database login credentials

Advanced Database Settings allows you to provide up to 20 different sets of database login credentials. Any one of these 20 may be used in place of the default username and password when viewing a report.

To specify alternate database credentials when viewing a report add

dbLogin=x

to the web address or form when calling ViewReport.aspx. x represents a number from 1 to 20 corresponding to the Advanced Database Connections values. For example,

```
http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=catalog.rpt&dbLogin=1
```

The Connection and Database values in Settings are ignored when using **dbLogin**.

Explicitly providing the database user and password in a report request

The database user and password entered in Settings may be overridden by including a different user name and password in the web request. The change is in effect only during that specific web request. No changes are made to the .rpt files or the permanent settings.

The database username and password may be passed in as plain text using

dbUser=

and

dbPw=

for example,

`http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=catalog.rpt&dbUser=sa&dbPw=secret`

where the user account “sa” will log in to the database using the password “secret”.

For sensitive data, the database username and password may be passed in as encrypted values using

dbUser-3DES=

and

dbPw-3DES=

for example,

`http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=catalog.rpt
&dbUser-3DES=m0%2fTaSpWg78%3d&dbPw-3DES=v0AQ4VKvliE%3d`

The encrypted strings in this example correspond to the user “sa” and password “secret”.

An encryption tool is available to create the encrypted strings at

`http://yourserver/ReCrystallizeServer/EncryptTool.aspx`

Similarly, AES encrypted values maybe be provided using **dbUser-AES=** and **dbPw-AES=**

Overriding all database location properties

To override all database location properties that were originally set in the Crystal Reports designer, use

dbOverride=x

where *x* specifies the numbered set of Connection, Database, Username, and Password entries defined in Settings.

For example, it may be convenient to design reports using a development database and then run the same report pulling from a production database. The databases must have the same table structure.

Use dbOverride only when it is necessary to override all database location properties at runtime. Any mistakes in the database settings may cause the report to fail. Using dbLogin is preferable when only the username and/or password must be set.

Overriding all database connection properties using ad hoc values

Instead of predefining the numbered database connections in ReCrystallize Server Settings, you may replace all database location properties that were originally set in the Crystal Reports designer with ad hoc settings. This approach may be useful when there are many possible database configurations or when the connection settings are not known in advance.

To use this method, include each of the following in the report request:

dbConn -- The database server or ODBC DSN name.

dbDatabase – The database name, typically used for SQL Server and left empty for Oracle.

dbUser -- The database username for login.

dbPw -- The database password for login.

If **dbConn** is included in the request, **dbUser**, **dbPw**, and **dbDatabase** (if required) must also be included in the request. When dbConn is detected, ReCrystallize Server will not attempt to validate these values and will not attempt to match any predefined database settings. If any of these settings is omitted or incorrect, the database login will fail.

For example, the following request overrides all table connection settings with these values:

Database server or DSN: MyDatabase

Database name: AdventureWorks

Database user: sa

Database password: secret

```
http://yourserver/ReCrystallizeServer/ViewReport.aspx?reportName=catalog.rpt  
&dbConn=MyDatabase&dbDatabase=AdventureWorks&dbUser=sa&dbPw=secret
```

Triple DES or AES encrypted values may be used with the same effect by including

DbConn-3DES, **dbUser-3DES**, **dbPw-3DES**, and **dbDatabase-3DES** or

DbConn-AES, **dbUser-AES**, **dbPw-AES**, and **dbDatabase-AES**.

Use this approach with dbConn only when it is necessary to override all database location properties at runtime, without utilizing value predefined in ReCrystallize Server Settings. Any mistakes in the database settings may cause the report to fail.

Database options order of precedence

ReCrystallize Server evaluates database options in the order below. The first criteria to be met is honored exclusively.

1. If **dbConn** is used, location and login properties for all tables will be set using the provided **dbConn**, **dbDatabase**, **dbUser**, and **dbPw** values. Encrypted values (**dbConn-AES**, **dbUser-AES** and so on) have the same effect and will take precedence over unencrypted values if both are present.

2. If **dbOverride** is used, location and login properties for all tables will be set based on the numbered set of values.
3. If **dbUser-3DES** and/or **dbPw-3DES** is used, those username and password values will be set for all connections in the report.
4. If **dbUser** and/or **dbPw** is used, those username and password values will be set for all connections in the report.
5. If **dbLogin** is used, the username and password will be set based on the numbered username and password values in Settings.
6. If any numbered Connection values in Settings is populated, ReCrystallize Server will attempt to match each table's connection name with a corresponding set of numbered connection values.

This matching allows a report to include tables from multiple database servers and/or ODBC DSN connections. Only the username and password will be set. The original connection name and database values stored in the report file are not modified.

If no matching connection name is found, the username and password for the table will be set to the default Username and Password values.

7. If no set of numbered connection values is populated in Settings, ReCrystallize Server will set the database username and password using the default Username and Password.

Miscellaneous

Calling ReCrystallize Server from a command line, PowerShell script, batch file, or other application.

ReCrystallize Server may be called from a script, batch file or another application that does not involve a web browser. Reports may be printed, emailed, or saved to disk using web requests.

Using Windows PowerShell, the Invoke-WebRequest cmdlet can initiate a request to ReCrystallize Server.

Run a report named chart.rpt on the local server and save it to disk in the Excel Data Only format:

```
Invoke-WebRequest -Uri
"http://localhost/ReCrystallizeServer/ViewReport.aspx?reportName=chart.rpt&exportFmt=ExcelData&saveTo=chart.xls"
```

On the local server, export a report named chart.rpt and email the report as a PDF:

```
Invoke-WebRequest -Uri
"http://localhost/ReCrystallizeServer/ViewReport.aspx?reportName=chart.rpt&exportFmt=PDF&mailto=test@test.com"
```

On the local server, using a report named chart.rpt, set the report parameter named dateparm and print to the printer named HP Laserjet:

```
Invoke-WebRequest -Uri
"http://localhost/ReCrystallizeServer/ViewReport.aspx?reportName=chart.rpt&dateparm=Date(2021,03,15)&serverPrinter=HP Laserjet"
```

If PowerShell scripts are disabled on the server, they may be enabled by opening PowerShell as Administrator and running

```
Set-ExecutionPolicy RemoteSigned
```

Similarly, curl may be used from a command line or batch file.

```
curl "http://localhost/ReCrystallizeServer/ViewReport.aspx?reportName=chart.rpt&mailto=test@test.com"
```

The curl command is included with recent versions of Windows. If the curl command is not a recognized on your server, it may be downloaded from <https://curl.se/windows/> where documentation is also available.

An example PowerShell script and an example batch file are available in the “ReCrystallizeServer\Example Scripts” folder.

Displaying an Animated “Please Wait” Message While a Report Loads

When the ViewReport.aspx page is opened and no prompting for parameters is required, users see only a blank page until the report is ready for display or export. If a report takes more than a few seconds to run, it may be helpful to show a “Please Wait” message to indicate that the report is processing.

To display a “Please Wait” message, use the ViewReportSpin.aspx page instead of ViewReport.aspx. All parameters and other items available to use with ViewReport.aspx remain available when using ViewReport Spin.aspx. For example,

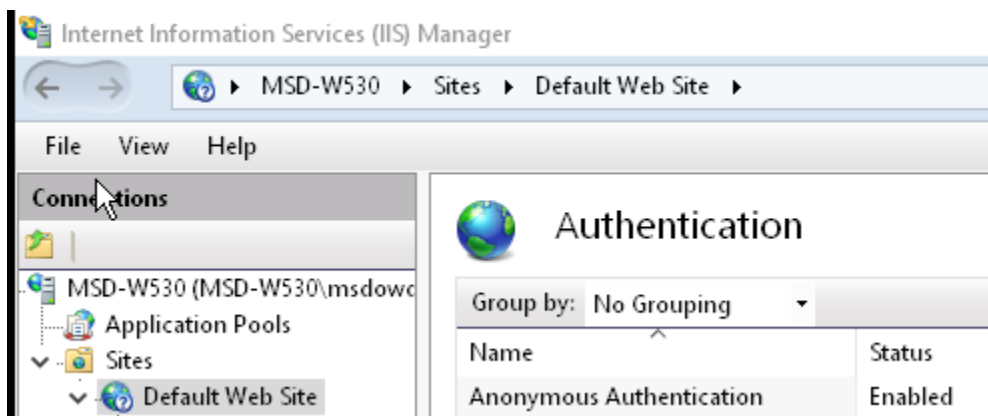
```
http://yourserver/ViewReportSpin.aspx?reportName=library.rpt&promptex-author=Shakespeare&exportfmt=PDF
```

The ViewReportSpin.aspx page will display an animated image and a message until the report is ready for display or export. The message text is localized to display in the web browser’s preferred language. When the report is ready, it will be displayed or exported normally just as if the ViewReport.aspx page had been called directly.

Restricting Access to Files with User Authentication and Permissions

ReCrystallize Server respects Windows file system permissions. It will display only those files to which a Windows user account has been granted access under the file’s Properties, Security tab in Windows Explorer.

If Anonymous Authentication is allowed, ReCrystallize Server cannot check file system permissions and will display all available files. To enforce file permissions, ensure that user authentication is required. You may require authentication for the entire website by disabling Anonymous Authentication for the website in IIS Manager.



If you wish to allow Anonymous Authentication in portions of your website, but not in ReCrystallize Server, edit the web.config file in the ReCrystallizeServer folder to remove the comment tags enclosing the following lines near the bottom of the file:

```
<!--  
    <authentication mode="Windows" />  
    <authorization>  
        <deny users="?" />  
    </authorization>  
-->
```

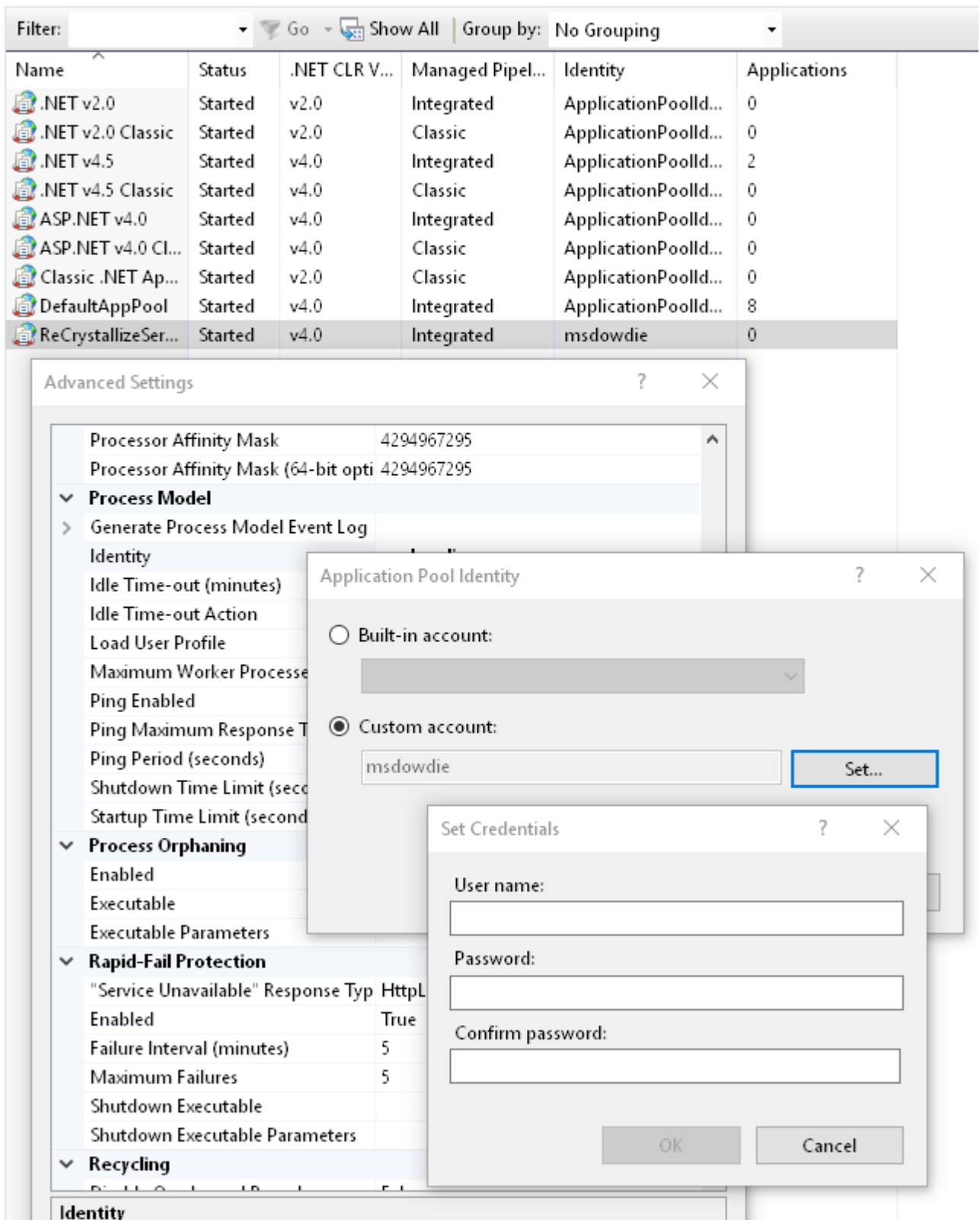
Using a Network Location for Folders and Reports

Reports and folders available for users to browse are typically located in a local drive on the server where ReCrystallize Server is installed. If your reports (.rpt files) and/or the folders you'd like to publish are located on another networked server, these additional steps will allow the network location to work with ReCrystallize Server.

- In IIS Manager, locate the ReCrystallizeServer Application Pool. In Advanced Settings, change the Identity setting to a domain user account that has required access both to the file system on the local server and to the network shared location.

Application Pools

This page lets you view and manage the list of application pools on the server. Application pools are associated with work one or more applications, and provide isolation among different applications.



The screenshot shows the IIS Manager interface for Application Pools. The main table lists various application pools with their status, .NET CLR version, Managed Pipeline Mode, Identity, and the number of applications associated with them. The 'ReCrystallizeSer...' pool is selected, and three dialog boxes are overlaid on top of it.

Name	Status	.NET CLR V...	Managed Pipel...	Identity	Applications
.NET v2.0	Started	v2.0	Integrated	ApplicationPoolId...	0
.NET v2.0 Classic	Started	v2.0	Classic	ApplicationPoolId...	0
.NET v4.5	Started	v4.0	Integrated	ApplicationPoolId...	2
.NET v4.5 Classic	Started	v4.0	Classic	ApplicationPoolId...	0
ASP.NET v4.0	Started	v4.0	Integrated	ApplicationPoolId...	0
ASP.NET v4.0 Cl...	Started	v4.0	Classic	ApplicationPoolId...	0
Classic .NET Ap...	Started	v2.0	Classic	ApplicationPoolId...	0
DefaultAppPool	Started	v4.0	Integrated	ApplicationPoolId...	8
ReCrystallizeSer...	Started	v4.0	Integrated	msdowdie	0

Advanced Settings dialog box:

- Processor Affinity Mask: 4294967295
- Processor Affinity Mask (64-bit opti): 4294967295
- Process Model**
 - Generate Process Model Event Log
 - Identity
 - Idle Time-out (minutes)
 - Idle Time-out Action
 - Load User Profile
 - Maximum Worker Processes
 - Ping Enabled
 - Ping Maximum Response T
 - Ping Period (seconds)
 - Shutdown Time Limit (sec
 - Startup Time Limit (second
- Process Orphaning**
 - Enabled
 - Executable
 - Executable Parameters
- Rapid-Fail Protection**
 - "Service Unavailable" Response Typ: HttpL
 - Enabled: True
 - Failure Interval (minutes): 5
 - Maximum Failures: 5
 - Shutdown Executable
 - Shutdown Executable Parameters
- Recycling**

Application Pool Identity dialog box:

- Built-in account:
- Custom account: msdowdie
- Set... button

Set Credentials dialog box:

- User name:
- Password:
- Confirm password:
- OK button
- Cancel button

- The path to reports or folders must use UNC format. Drive letters mapped to network locations will not work properly. Example of UNC formatted paths for a folder and a report are

```
\\networkserver\sharedfolder\
```

```
\\networkserver\sharedfolder\crystalreport.rpt
```

where networkserver is the name of the server and sharedfolder is the name of the shared folder on the server.

A UNC folder path may be passed to the ViewFolder.aspx page instead of a local path.

```
http://youserver/ReCrystallizeSever/ViewFolder.aspx?folderName=  
\\networkserver\sharedfolder
```

A UNC report path may be passed to the ViewReport.aspx page instead of a local path.

```
http://servername/ReCrystallizeServer/ViewReport.aspx?reportName=  
\\networkserver\sharedfolder\crystalreport.rpt
```

- The Report Root Folder may use a UNC path. This will cause the default folder view location and the default report location to point to the network share.
- You may optionally use IIS Manager to create a virtual directory to the network shared folder beneath the ReCrystallizeServer application. This step is not required to use UNC paths, but may be more convenient and concise than the UNC path. If a virtual directory is created, it may be referenced as

```
/virtualdirectoryname
```

where virtualdirectoryname is the name you give the virtual directory.

Installing ReCrystallize Server without User Interaction

The ReCrystallize Server setup program supports silent / unattended installation. This can be useful for installing ReCrystallize Server as part of an application bundle or scripted server setup. It may also be helpful when setting up cloud server instances. On Azure, for example, ReCrystallize Server setup could be automated as part of a cloud service startup task.

To install ReCrystallize Server without user interaction, run the setup program with these options:

```
ReCrystallizeServerSetup.exe /quiet /qn
```

Logging a Correlation ID and Other Values

A correlation ID and/or other arbitrary values may be included in a report viewing request to the ViewReport.aspx page. The following will be recognized and logged:

X-Correlation-ID

X-ReCrystallize-*

where * represents the name of the value to log.

Values may be added for logging in three ways.

- By adding as HTTP headers.
- By adding as a parameter on the web link/address, for example

`ViewReport.aspx?reportName=sales.rpt&X-Correlation-ID=98723&X-ReCrystallize-UserGroup=Manager`
would log Correlation ID 98723 and UserGroup Manager.

- By adding a field named X-Correlation-ID or X-ReCrystallize-* and populated with the value to a form and then POSTing the form to ViewReport.aspx.

Listing parameter fields in a report

The GetParms.aspx web service returns an XML listing of each parameter field in a report, including its name, value type, and subreport name. The subreport name will be blank if the parameter is not used in a subreport.

The web service accepts and requires two inputs:

- Report Name – the full name of the .rpt file with path relative to the Reports folder.
- Parameter Number – 0 to list all parameters or the parameter number to get details for a single parameter.

Setting a report parameter value to the authenticated web username.

ReCrystallize Server will automatically set the value of any report parameter named "WebUsername". The parameter value is set to the username of the current authenticated web user in the form DOMAIN\user. This can be useful to filter data based on the WebUsername parameter in the report's Record Selection Formula or SQL WHERE clause. For example, the data could be filtered so that each user sees only her data in a report. The parameter could also be displayed in the report.

Where to Buy

ReCrystallize Server may be purchased using a credit card at our secure website.

ReCrystallize.com LLC can also accept purchase orders, PayPal payments, and bank wire transfers; please email sales@recrystallize.com or see <http://www.recrystallize.com/merchant/howtobuy.htm> for more information.

<http://www.recrystallize.com/merchant/products.htm>

ReCrystallize Server is covered by a 30-day money-back guarantee for risk-free purchasing.

Troubleshooting Resources

For solutions to common issues, check the support Frequently Asked Questions at

<https://www.recrystallize.com/merchant/ReCrystallize-Server-Support-FAQ.htm>

Appendix A: Report Viewing Request Quick Reference

The following options are supported when viewing a report with the ViewReport.aspx page.

Report File

<p>reportName</p> <p>report</p>	<p>Required.</p> <p>Specifies the Crystal Reports .rpt file to be viewed. If only the report filename is provided with no path, the default Reports Folder will be used. File paths relative to the default Reports Folder are supported. Absolute paths including a drive letter are supported if enabled in Settings.</p> <p>The reportName and report options are equivalent.</p> <p>Examples:</p> <p>ViewReport.aspx?reportName=yourreport.rpt</p> <p>ViewReport.aspx?report=\Accounting\statement.rpt</p>
---	---

Report Parameters

<p>promptex-name</p> <p>name</p>	<p>Sets the value of the report parameter corresponding to <i>name</i>. Multiple values for the same parameter are separated by a comma. For date values, use the format Date(YYYY,MM,DD). To set multiple values for a parameter, enclose each value in quotation marks and separate values with a comma.</p> <p>Examples:</p> <p>The following two are equivalent:</p> <p>ViewReport.aspx?reportName=library.rpt&promptex-author=Shakespeare</p> <p>ViewReport.aspx?reportName=library.rpt&author=Shakespeare</p> <p>ViewReport.aspx?reportName=sales.rpt&promptex-day=Date(2017,07,22)</p> <p>ViewReport.aspx?reportName=library.rpt&promptex-title="Hamlet","Macbeth"</p>
<p>promptAES-name</p> <p>prompt3DES-name</p>	<p>Sets the value of the report parameter corresponding to <i>name</i> to the decrypted value of an AES or Triple DES encrypted string.</p> <p>Example:</p> <p>ViewReport.aspx?reportName=library.rpt &promptAES-author=3zDqgZAX%2bmLv6m0AfuxDcg%3d%3d</p>
<p>Px</p>	<p>Sets the value of the report parameter corresponding to <i>x</i>, where <i>x</i> is the 1-based numeric index of the parameter in order of occurrence in the report</p> <p>This syntax may be used interchangeably with promptex-name with the same effect.</p>

	<p>Examples:</p> <pre>ViewReport.aspx?reportName=library.rpt&P1=Shakespeare</pre> <pre>ViewReport.aspx?reportName=sales.rpt&P2=Date(2017,07,22)</pre> <pre>ViewReport.aspx?reportName=sales.rpt&P2Y=2017&P2M=07&P2D=22)</pre> <pre>ViewReport.aspx?reportName=library.rpt&P1="Hamlet","Macbeth"</pre>
--	--

Output

autorefresh	<p>Automatically updates report data every x minutes.</p> <p>Example:</p> <pre>ViewReport.aspx?reportName=status.rpt&autoRefresh=1</pre>
V	<p>Specifies one of three sets of interactive report viewer customizations defined in Settings.</p> <p>Example:</p> <pre>ViewReport.aspx?reportName=sales.rpt&V=2</pre>
scroll	<p>Causes the report to be displayed as a continuous scrolling page when true or separate pages when false.</p> <p>Example:</p> <pre>ViewReport.aspx?reportName=sales.rpt&scroll=true</pre>
exportfmt exttyp exportname download	<p>Specifies a file format to directly export the report without interactive viewing. Supported formats include PDF, CSV, RPT, RPTR, EDITABLE RTF, EXCEL, EXCELWORKBOOK, EXCELDATA, EXCELDATAMAINAINPOS, WORD, RTF, TAB, TEXT, XML.</p> <p>exportfmt and exttyp are equivalent.</p> <p>exportname is optional. If included, it specifies the default filename to be used when saving the exported file on the client.</p> <p>download is optional. It may be included to treat the exported file as a download rather than opening it in the browser.</p> <p>Example:</p> <pre>ViewReport.aspx?reportName=library.rpt&exportfmt=PDF&download=y</pre>
getPageCount	<p>Causes the total number of pages in the report output to be written at the top of the web page using the format</p> <p>X pages in this report.</p> <p>Example:</p> <pre>ViewReport.aspx?reportName=library.rpt&getPageCount=true</pre>
mailto	<p>Specifies one or mail email addresses to send the report output instead of displaying the report in the browser. The report format defaults to PDF; to specify a different format, also include exportfmt. Separate multiple email addresses with commas or semicolons. Enter your SMTP Server details in Settings before</p>

<p>mailFrom</p> <p>mailFromName</p> <p>mailCC</p> <p>mailBCC</p> <p>mailSubject</p> <p>mailBody</p> <p>mailBodyFile</p> <p>mailAttach</p> <p>mailPriority</p>	<p>using mailTo.</p> <p>Example:</p> <p>ViewReport.aspx?reportName=monthly.rpt &mailTo=info@recrystallize.com,sales@recrystallize.com&exportfmt=EXCEL</p> <p>Specify a From email address.</p> <p>Specify a From display name.</p> <p>Specify one or more CC email address separated by commas or semicolons.</p> <p>Specify one or more BCC email address separated by commas or semicolons.</p> <p>Specify the email Subject line.</p> <p>Specify email body text.</p> <p>Specify a file for use as the email body text.</p> <p>Specify one or more files to attach to the email message.</p> <p>Specify High, Normal, or Low priority for the email message.</p>
<p>saveTo</p>	<p>Specifies a file name used to save a copy of the updated report to disk. The file name may include a path relative to Reports root folder or may include an absolute local or UNC path. The report format defaults to PDF; to specify a different format, also include exportfmt .</p> <p>Example:</p> <p>ViewReport.aspx?reportName=monthly.rpt&saveTo=\output\JuneReport.pdf</p>
<p>serverPrinter</p> <p>copies</p> <p>fromPage</p> <p>toPage</p>	<p>Specified the name of a Windows printer name of a server-attached printer where the report output will be printed.</p> <p>Example:</p> <p>http://yourserver/ViewReport.aspx?reportName=library.rpt&serverPrinter=HP LaserJet</p> <p>May be included to specify multiple copies of the report should be printed.</p> <p>May be included to specify the first page of a range to be printed. If omitted, the first page is used.</p> <p>May be included to specify the last page of a range to be printed. If omitted, the last page is used.</p>

dblogin	Specifies the numbered username and password from the Settings page for use when logging into the database. Example: <code>ViewReport.aspx?reportName=catalog.rpt&dbLogin=2</code>
dbUser dbPw	Explicitly specifies a username and/or password for use when logging into the database. Example: <code>ViewReport.aspx?reportName=catalog.rpt&dbUser=sa&dbPw=secret</code>
dbUser-3DES dbUser-AES dbPw-3DES dbPw-AES	Explicitly specifies the Triple DES or AES encrypted username and/or password values for use when logging into the database. Example: <code>ViewReport.aspx?reportName=catalog.rpt &dbUser-3DES=m0%2fTaSpWg78%3d&dbPw-3DES=v0AQ4VkvliE%3d</code>
dbConn dbConn-3DES dbConn-AES dbDatabase dbDatabase-3DES dbDatabase-AES	Explicitly specifies the database server name or ODBC DSN, which will be applied to all tables in the report overriding original values. When dbConn is used, dbUser , dbPw , and dbDatabase (if required) must also be provided. dbDatabase explicitly specifies the database name (such as AdventureWorks or Pubs). This value is often used for SQL Server databases but is typically not used for Oracle databases.
appendRSF replaceRSF	Appends to or replaces the report's existing Crystal Reports Record Selection Formula using Crystal Reports formula language syntax. Example: <code>ViewReport.aspx?reportName=library.rpt&appendRSF={title}="1984"</code>

Request expiration

expires	Sets an expiration date and/or time after which the request is no longer valid and will not display the report. Use of request encryption calling the ViewReportEncrypted.aspx page is recommended. Examples: <code>ViewReport.aspx?reportName=library.rpt&expires=08/18/2018</code> <code>ViewReport.aspx?reportName=library.rpt&expires=08/18/2018 07:22:16</code> <code>ViewReport.aspx?reportName=library.rpt&expires=2018-08-18T07:22:16.000000Z</code> <code>ViewReport.aspx?reportName=library.rpt&expires=Sat, 18 Aug 2018 07:22:16 GMT</code> <code>ViewReport.aspx?reportName=library.rpt&expires=08/18/2018 07:22:16 -5:00</code>
----------------	--

Logging

log	<p>Temporarily overrides the logging level while processing the report. This option has no effect if logging is disabled in settings.</p> <p>The valid logging levels are Debug, Info, Warn, and Error.</p> <p>Example:</p> <pre>ViewReport.aspx?reportName=yourreport.rpt&log=Debug</pre>
------------	--

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