crystal decisions™

Crystal Enterprise

Virtual Directories and Path Mapping

Overview

This technical brief describes the process of setting up Virtual Directories and Path Mappings to integrate Crystal Enterprise into various web server environments. The paper assumes that administrators are familiar administering Crystal Enterprise and their particular web server (Microsoft IIS, Netscape Enterprise Server, Apache, etc.) and assumes that administrators are familiar with the concepts of managed vs. unmanaged reporting in Crystal Enterprise.

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Introduction

In a web environment, a virtual directory is created to abstract the file location from the URL. For example, with the following URL, "testdirectory" is the virtual directory name.

http://servername/testdirectory/test.htm

Within the web server, "testdirectory" refers to a physical drive location. For this example, we'll say that it is mapped to c:\tests\directory1. The "test.htm" file would live in this directory. When a URL request comes into the web server, it knows where the test.htm file is actually located, retrieves it, and serves it back to the requesting browser.

With Crystal Enterprise, there are two types of URL requests that reference Crystal Enterprise-specific files. These are .CSP requests and .RPT requests. A RPT file is a Crystal Report file—it represents a report designed within Crystal Reports. RPT requests launch a report into a viewer so that the report is viewable through a browser. CSP files (Crystal Server Pages) contain a mixture of HTML and script. The script is processed by the Crystal Web Component Server (WCS) to send information to other components in the Crystal Enterprise framework.

The difference between HTM files and the Crystal Enterprise files is that CSP and RPT files do not get processed by the web server (there are actually four types handled by Crystal Enterprise – CSP, RPT, CWR, and CRI– but the latter ones don't need to be discussed here). Whenever a web server notices these requests, it immediately forwards them to the WCS. The WCS in turn examines the request, loads the appropriate file, performs the required action(s), and sends the information back to the web server who forwards it back to the browser.

Configuring the Virtual Directory

In order to have the files loaded by the appropriate components, the virtual directory/path information must be configured correctly.

Create a Virtual Directory on the Web Server

A virtual directory should be created first on the web server itself. It can be pointed to the appropriate physical drive location. As different web servers have different techniques for creating virtual directories, consult the web server's documentation for additional information.

Create a Virtual Path within Crystal Enterprise

If the actual path differs between the Web Component Server and the Web Server, it is necessary to create a virtual path to the Web Component Server. This is done using the Crystal Configuration Manager.

NOTE	Since UNIX does not have drive letter paths like Windows NT/2000, it is required to use a virtual path to the Web Component Server if the Web Server resides on a UNIX operating system.

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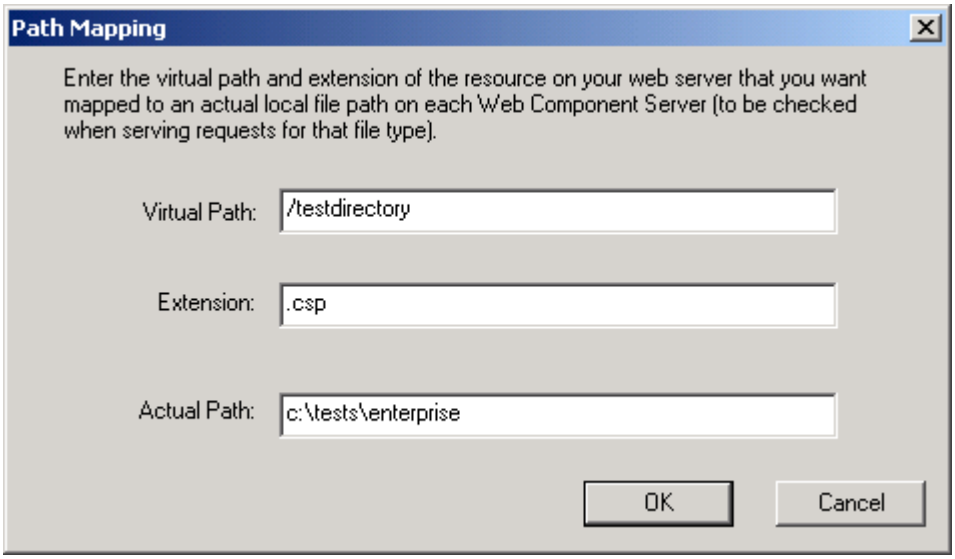
This virtual path should match identically the virtual directory that was created on the Web Server. To create the virtual path, click the Web Connector icon .

In the Path Mapping Section, click Add. Type in the virtual path name, the extension (".csp") and the physical drive path on the Web Component Server (shown in Fig. 1).

Figure 1

The virtual path could be entered either as "/testdirectory" or "testdirectory". If the leading slash is left out, the Configuration Manager will automatically add it.



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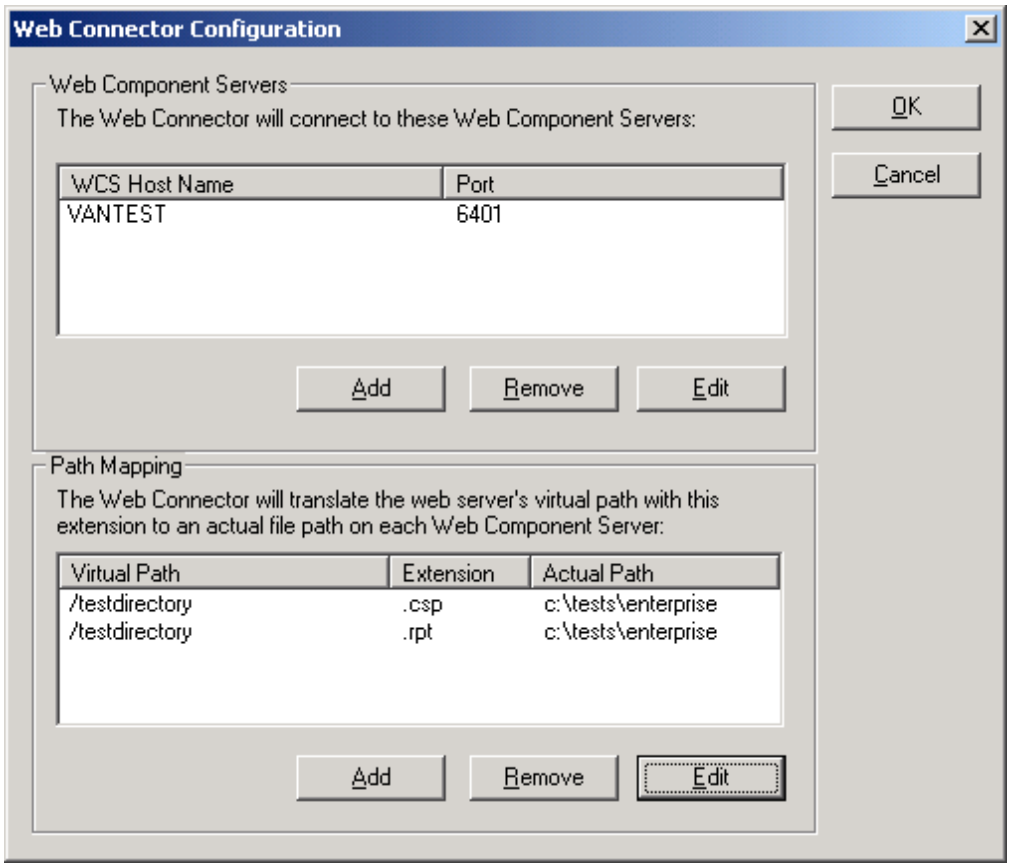
If the reports are being run in an unmanaged environment, follow the same process as above, but change the extension to ".rpt". You can also add both extensions, as seen in Fig. 2.

Figure 2



Location of the Files

It is important to realize that within the Crystal Enterprise system, different files can be processed at different locations. This means that the physical drive path specified within the Crystal Configuration Manager is a drive that exists on the Web Component Server machine, whereas the physical drive path in the web server's virtual directory is located on the web server. Both components can be installed on one machine, or separate machines.

On the Web Component Server

In the managed reporting environment, the WCS accesses all CSP files. It is strongly recommended to place the CSP files on each Web Component Server, rather than using a UNC path to designate the location of the files.

NOTE	The Web Connector does not allow for multiple actual paths for one virtual directory. As a result, the CSP files must be placed in the same directory structure on each WCS.

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On the Web Server

All the HTM, JPG, GIF, ASP, JSP files, along with any other file types that the web server normally processes, will be located on the web server.

On the Page Server

If Crystal Enterprise is being used in an unmanaged environment, the RPT files will be accessed directly by the Page Server. It is strongly recommended to place the report files on each Page Server, rather than using a UNC path to designate the location of the files.

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Getting More Information

For more information, look at the following documentation or contact Technical Support.

Product Documentation

Available in printed documentation or in electronic format on the Crystal Enterprise CD and in the Online Store at: http://store.crystaldecisions.net

- Crystal Enterprise Administrator's Guide.

Technical Briefs

Available from http://support.crystaldecisions.com/docs

- Understanding Managed and Unmanaged Reporting (filename CE8_Managed_Unmanaged_Rpts.doc)

Contacting Crystal Decisions for Technical Support

We recommend that you refer to the product documentation and that you visit our Technical Support web site for more resources.

Self-serve Support:

http://support.crystaldecisions.com/

Email Support:

http://support.crystaldecisions.com/support/answers.asp

Telephone Support:

http://www.crystaldecisions.com/contact/support.asp

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Appendix A: Implementation Scenarios

Here are two sample scenarios that illustrate where the various files might reside. There will be 3 machines used in both scenarios: a web server, a machine to run the WCS, and a machine to run the Page Server (and the rest of the components).

Unmanaged Reporting

For the first scenario, we will highlight the unmanaged environment. There are three files that are accessed in this scenario: index.html, logo.gif, and customers.rpt. The index.htm is automatically loaded when a user browses to http://testmachine/reports. It loads up the logo.gif and it also contains an href to point at (http://testmachine/reports/customers.rpt).

Web Server	Web Server Files and Location	WCS Files and Location	Page Server Files and Location	Virtual Path required on Web Connector?
IIS	C:\inetpub\reports\index.htm C:\inetpub\reports\logo.gif	n/a [1]	C:\inetpub\reports\customers.rpt	No [2]
IIS	C:\inetpub\reports\index.htm C:\inetpub\reports\logo.gif	n/a	D:\crystal\reports\customers.rpt	Yes [3] .RPT only
Netscape (NT)	C:\inetpub\reports\index.htm C:\inetpub\reports\logo.gif	n/a	C:\Netscape\SuiteSpot\Https-Servername\reports\customers.rpt	No
Netscape (NT)	C:\Netscape\SuiteSpot\Https-Servername\reports\index.htm C:\Netscape\SuiteSpot\Https-Servername\reports\logo.gif	n/a	D:\crystal\reports\customers.rpt	Yes .RPT only
Domino (NT)	C:\Lotus\Domino\Data\reports\index.htm C:\Lotus\Domino\Data\reports\logo.gif	n/a	C:\Lotus\Domino\Data\reports\customers.rpt	No
Domino (NT)	C:\Lotus\Domino\Data\	n/a	D:\crystal\reports\customers.rpt	Yes .RPT only
Apache	/usr/local/apache/htdocs/	n/a	D:\crystal\reports\customers.rpt	Yes .RPT only
CGI	/usr/local/reports	n/a	D:\crystal\reports\customers.rpt	Yes .RPT only

1. As noted previously, the WCS processes only CSP files. Since the unmanaged environment does not use CSP, the WCS does not need to load any files (it is utilized in other ways in the unmanaged case).

2. No virtual path is required on the Web Connector, since the directory structures are identical.

3. A virtual path is required since the directory structures do not match.

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Managed Reporting

In the managed scenario, there are also three files that need to be used: index.html, reports.csp, and logo.gif. Index.html acts as a redirect to the reports.csp URL. Logo.gif is called from reports.csp.

Web Server	Web Server Files and Location	WCS Files and Location	Page Server Files and Location	Virtual Path required on Web Connector?
IIS	C:\inetpub\reports\index.htm C:\inetpub\reports\logo.gif	C:\inetpub\reports\reports.csp	n/a [1]	No [2]
IIS	C:\inetpub\reports\index.htm C:\inetpub\reports\logo.gif	D:\crystal\reports\reports.csp	n/a	Yes [3] .CSP only
Netscape (NT)	C:\inetpub\reports\index.htm C:\inetpub\reports\logo.gif	C:\Netscape\SuiteSpot\Https-Servername\reports\reports.csp	n/a	No
Netscape (NT)	C:\Netscape\SuiteSpot\Https-Servername\reports\index.htm C:\Netscape\SuiteSpot\Https-Servername\reports\logo.gif	D:\crystal\reports\reports.csp	n/a	Yes .CSP only
Domino (NT)	C:\Lotus\Domino\Data\reports\index.htm C:\Lotus\Domino\Data\reports\logo.gif	C:\Lotus\Domino\Data\reports\reports.csp	n/a	No
Domino (NT)	C:\Lotus\Domino\Data\	D:\crystal\reports\reports.csp	n/a	Yes .CSP only
Apache	/usr/local/apache/htdocs/	D:\crystal\reports\reports.csp	n/a	Yes .CSP only
CGI	/usr/local/reports	D:\crystal\reports\reports.csp	n/a	Yes .CSP only

1. In the managed environment, reports are added to the File Repository Server (using the Crystal Publishing Wizard or Crystal Reports) and then they are actively managed by the system. Therefore, the reports do not need to manually be placed on the Page Server.

2. No virtual path is required on the Web Connector, since the directory structures are identical.

3. A virtual path is required since the directory structures do not match.

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