

# BUSINESS OBJECTS OPEN DATA CONNECTOR

Installation and Usage Guide

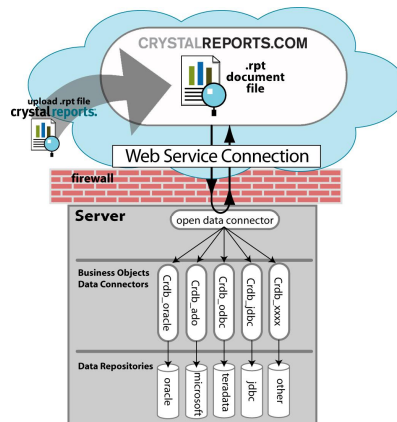
**Live Data Connectivity**  
Refresh web-based reports with data from on-premise systems, passed securely through your company firewall

**Extend Your BI Systems Beyond the Firewall**  
Deliver advanced reports simply and securely to partners or customers outside your corporate network

**Works with:**  
crystalreports.com  
Crystal Reports XIR2

## BUSINESS OBJECTS OPEN DATA CONNECTOR

The crystalreports.com (CRDC) Open Data Connector (ODC) allows you to refresh and schedule your Crystal Reports stored on crystalreports.com against your internal data which resides behind the firewall. The ODC acts as gateway between CRDC and your on premise Crystal Reports data source drivers (crdb .dlls). The ODC loads the appropriate data driver and connects to the internal database server to retrieve the data and transmit it to the Crystal Report residing in CRDC. With the ODC Crystal Reports can also be scheduled from within CRDC



## OVERVIEW

When a professional edition administrator publishes a report (that is a Crystal Reports .rpt file) to CRDC they have an option to enable the ODC. The ODC is a data provider which sits on a web (http) server behind the firewall and acts as an agent between CRDC in the cloud (and its query engine which is a data consumer) and the Crystal Reports data source drivers. The ODC loads the appropriate data source driver and connects to the internal database server to retrieve the data. CRDC then renders the report based on the data received. This open data connector will then access the same data source drivers which Crystal Reports uses to connect to data sources such as Oracle, Microsoft or Teradata based data repositories as well as other Open Database Connectivity (ODBC) and Java Database Connectivity (JDBC) compliant data repositories.

## USAGE

When you publish a Crystal Report to CRDC, you have the option to refresh or schedule that report by enabling the ODC. When you publish a Crystal report (\*.rpt file) to CRDC you can check the "Establish Data Connection" option and choose "Open Data Connector" to specify if you want the report to go through the ODC. Once you enable the ODC, you specify the Uniform Resource Identifier (URI) to your internal web server that contains the ODC driver.

The screenshot shows the 'Upload Document' form in the Crystal Reports web interface. The form is titled 'Upload Document' and is located under the 'Reports' tab. It includes the following fields and options:

- File Location:** A text box containing 'D:\Documents and Settings\jhardy\Desktop\view.rpt' and a 'Browse...' button.
- Document Name:** A text box containing 'Test report'.
- Enable Download:** A checkbox that is currently unchecked.
- Establish Data Connection:** A checked checkbox.
- Open Data Connector:** A radio button that is selected.
- Data Warehouse Name:** A radio button that is unselected.
- Excel Spreadsheet:** A radio button that is unselected.
- Other:** A radio button that is unselected.
- URI:** A text box containing 'https://myserver/gsoap/mod\_gsoap.dll?crdbproxysvr'.
- User name:** A text box containing 'jhardy'.
- Password:** A text box containing '\*\*\*\*\*'.
- Buttons:** 'Upload' and 'Cancel' buttons at the bottom.

Once the report is uploaded to CRDC, the local version of the report is no longer necessary for the implementation. However, a best practice is to keep a local copy of the report to quickly make changes to it when necessary. To modify the report, make changes using the Crystal Reports designer as you normally would, save it, and then upload the report again to CRDC, making sure to select the ODC option. If you have deleted the local copy of the report, you can simply download it from CRDC, make your changes, and then upload it again to CRDC

## PREREQUISITES

### Minimum Software and Hardware Recommendations for the IIS Server

Hardware and software requirements are the same as for IIS 5.0 or IIS 6.0. For performance reasons Business Objects recommends a minimum configuration.

- Windows 2000 Server with Service Pack 4
- PIII 750Mhz Processor with 1GB RAM
- For hard disk space please follow the operating system guidelines

## USAGE NOTES

### Installation Requirements

Version 1 of the Open Data Connector can only be installed on a Windows based system and requires that the web (http) server on which the ODC is installed must also have Crystal Reports XI R2 or the runtime (.dll) files required for data access and the Crystal Reports engine.

### Multiple Data Sources

Version 1 of the Open Data Connector does not support reports with multiple data sources. When a user attempts to upload a report that contains multiple data sources AND checks the ODC option, they will receive an error message. Users may still upload the report, but cannot select the ODC option. *Please note:* reports using more than 1 stored procedure or reports that contain a table and stored procedure are treated as a multiple data source report and are NOT supported with the ODC.

### **SQL Server Data Sources**

Version 1 of the Open Data Connector requires that SQL Server based reports use Standard User security in SQL Server. This requires SQL Server to be configured in mixed mode authentication.

### **ODBC Data Sources**

Reports using an Open Database Connectivity (ODBC) driver require that the Data source Name (DSN) be configured as a System DSN.

### **Refreshing Reports from Access or Excel (These use a DAO connection)**

The ODC, which is an IIS worker process, may be unable to access the MS Excel or Access files from their original location. There are two ways to resolve this situation:

- Move the file(s) into any virtual directory and point the data connection of the report to the new virtual directory location,
- Grant access rights to the folder containing the Access or Excel files to the user group responsible for running the IIS work process (the ODC).

### **Refreshing Reports from File based data sources**

For reports that are based off of files (i.e. text, XML, CSV, etc.) the source file will require folder and file access permissions for the account that the IIS worker process is running under. For security purposes it is recommended that these files are located on a separate server apart from the ODC.

### **Removing a Column from a Report**

When removing a column from a report, refresh the report so the latest saved data is generated before uploading the report to CRDC.

### **Subreports Reports**

The ODC does not support reports that contain subreports. To use a report that has subreports the recommendation is to upload the report with Saved Data. You can keep that report up-to-date by using the Desktop Publisher and publish the latest instance.

## **SECURITY**

To provide a secure connection between CRDC and the Crystal Reports data source drivers the web (http) server on which the ODC is installed should be configured with secure socket layer (SSL), in other words HTTPS. For v1 of the ODC, this would be done within the Internet Information Services (IIS) server on a Windows machine.

HTTPS is the standard security for Internet communication. In other words, with SSL a secure pipe is created for communicating the data via the ODC connector. Since there are a wide variety of means to allow specific servers to be accessed from outside of a firewall, installers of the ODC should consult with their IT department about exposing the ODC to the Internet.

Data access security uses the same data access security as provided by the data source. The end user must login to CRDC; the database will require a database logon to provide information.

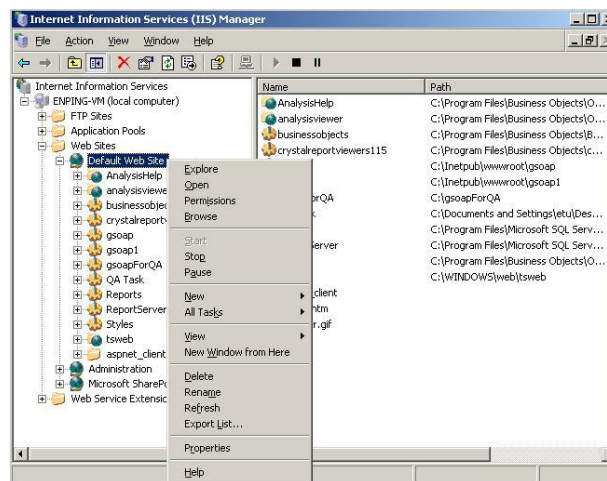
CRDC uses the strongest encryption products available to protect your data and communications, including 128-bit VeriSign SSL Certification. Your data travels between your computer and your report space on CRDC through the public internet using a 128-bit encrypted secure session. This security feature protects report publishers and report viewers alike.

## INSTALLING THE OPEN DATA CONNECTOR

This first version of the Open Data Connector requires that the server on which the ODC is installed must also have Crystal Reports XI R2 or Business Objects Enterprise XI R2 installed.

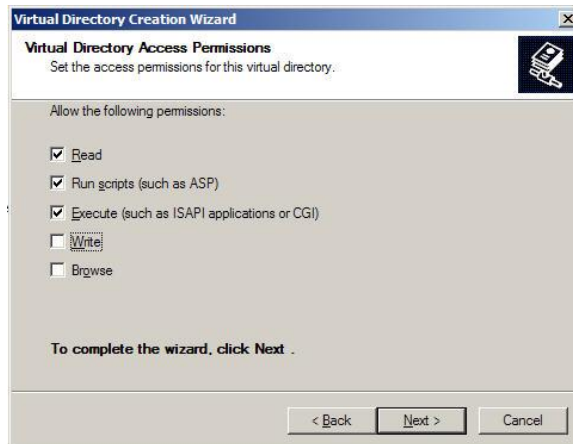
### Windows Installations

1. Create a virtual directory on your server and copy the ODC files to it
  - a. Create a directory on the server and copy *mod\_gsoap.dll*, *crdbproxysvr.dll* and *proxysvr.conf* to the directory.
  - b. Copy the *zlib1.dll* to *Windows\System32* directory (typically found at *c:\windows\system32\* directory location).
  - c. Open **Control Panels | Administrative Tools | Internet Information Services (IIS) Manager** (or **Start | All Programs | Administrative Tools | Internet Information Services (IIS) Manager**)
  - d. Expand the console tree for the local computer which is the server where the ODC resides



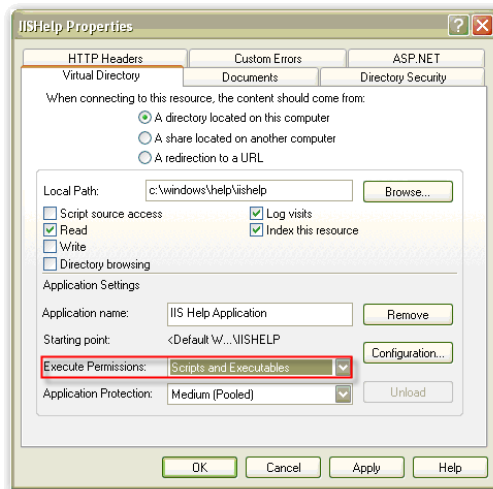
- e. Right click on **Default Web Site**, and then select **New | Directory** to bring up the new directory wizard. Click **Next**
- f. In the **Alias** text box, enter a name for the virtual directory, then click **Next**
- g. Browse to the actual directory, then click **Next**
- h. In the **Virtual Directory Access Permissions** page, select **Read, Run scripts**

(such as ASP) and **Execute** (such as ISAPI applications or CGI) options, then click **Next**.



**For IIS 5.x installations:**

In the **IIS Help Properties** in the **Virtual Directory** tab under the **Application Settings** section set the option **Execute Permissions** to **Scripts and Executables** as shown below.



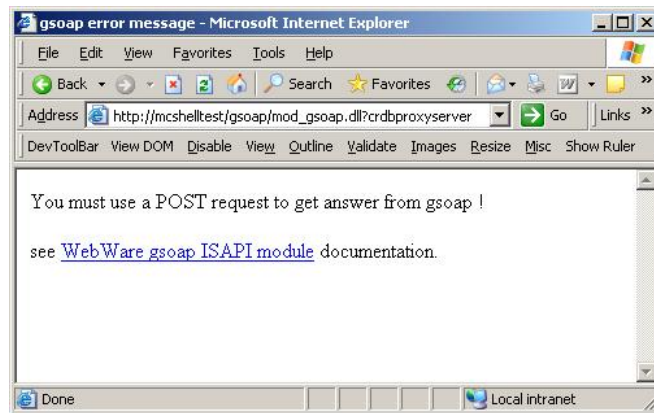
## 2. Configure the Web Service Extension

- a. Right click the **Web Service Extension** folder and select **Add a new web service**. For IIS 5.x installations steps 2a through 2c are not required.
- b. Enter a name
- c. Add `mod_gsoap.dll` to the required files
- d. Test by entering:

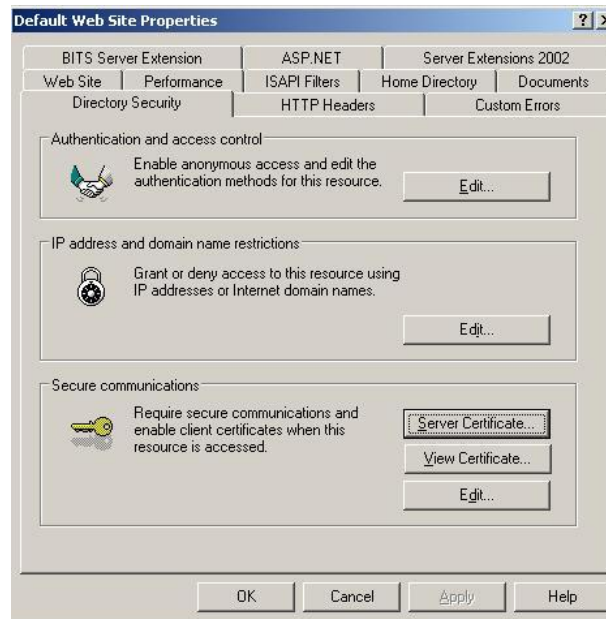
["HTTP://machinename/\(virtualdirectory\)/mod\\_gsoap.dll?crdbproxyserver"](http://machinename/(virtualdirectory)/mod_gsoap.dll?crdbproxyserver) in a browser.

You should get a response from the server that you should use a POST command

which proves that mod\_gsoap.dll could load crdbproxysrv.dll.

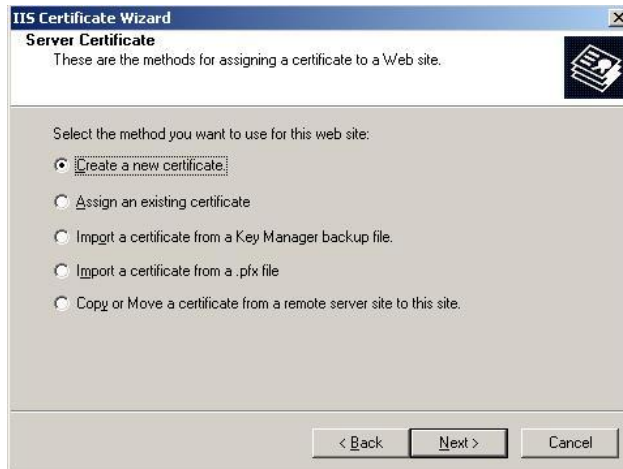


3. *Getting and Setting up SSL: Setup the Server Certificate if you need a new certificate*
  - a. *Right click on **Default Web Site** in the console tree and select **Properties**.*
  - b. *Select the **Directory Security** tab, and then click **Server Certificate***

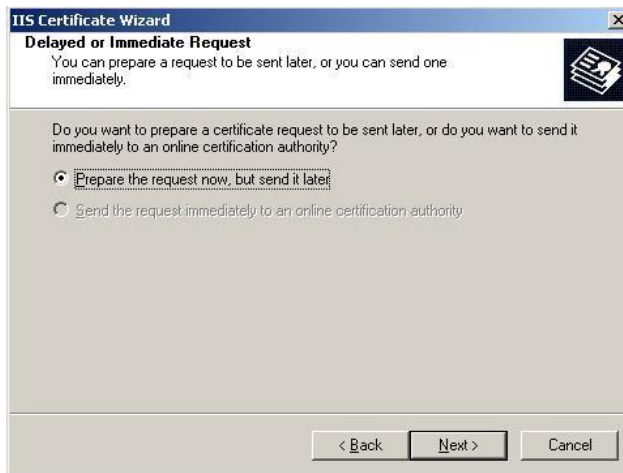


- c. *Follow the steps in the Web Server Certificate Wizard. On the **Welcome** page, click **Next***

- d. On the **Server Certificate** page, select the **Create a new certificate** option, then click **Next**



- e. On the **Delayed or Immediate Request** page, select **Send the response immediately to an online certification authority** (Note: You need to have a CA on your server or a server on your network, otherwise select **Prepare the request now, but send it later**. With this option you will need to manually send the request to the CA)



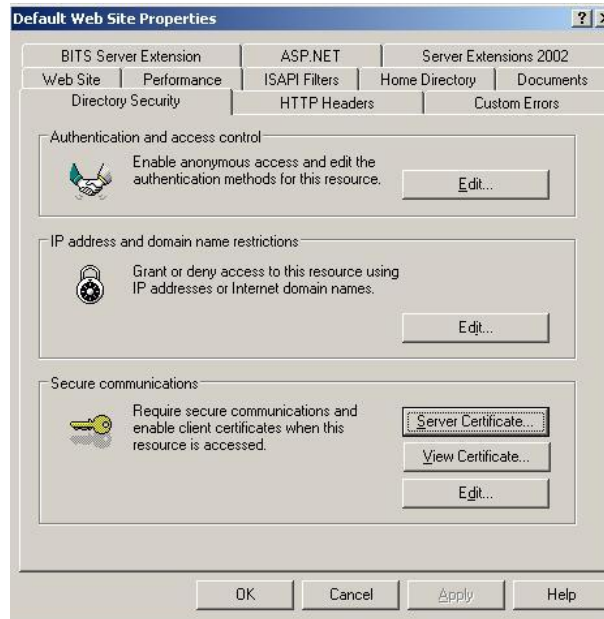
- f. On the **Name and Security Setting** page, enter an easily remembered name, such as the `ODCCertificate` or `ProxyServerCertificate` in the **Name** text box, then click **Next**

- g. On the **Organization Information** page, in the **Organization** drop down text box, enter your company name
- h. On the **Your Sites Common Name** page, in the **Common Name** text box, enter the Domain Name Server, NetBIOS name or IP address of your server
- i. On the **Geographical Information** page, in the **State/province** text box, enter the appropriate information, then click **Next**
- j. Save the certificate request as a .txt file. Manually send the certificate request to a CA server and get the .cer file back
- k. On the **SSL Port Page**, in the **SSL port this web site should use** text box, enter 443 or another customized port number. If you are unsure which port to use, contact your organization's IT department.

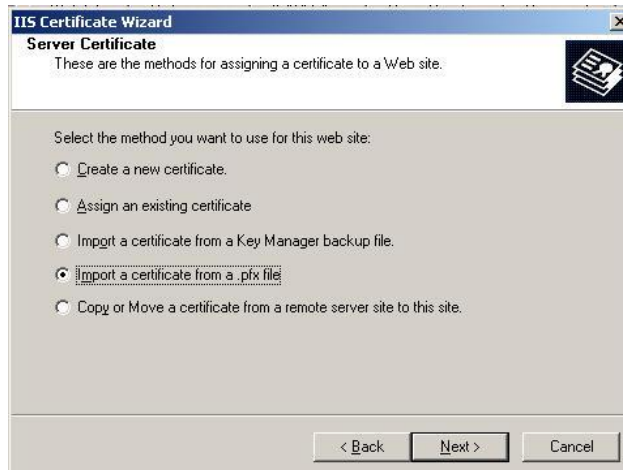
- l. On the **Choose a Certification Authority** page, select an CA, then click **Next**
- m. On the **Certificate Request Submission** page, click **Next**, then **Finish**

4. Getting and Setting up SSL: Setup the Server Certificate if you want to import an existing certificate. If you have requested a certificate manually you will use these steps to import the file you receive from the CA.

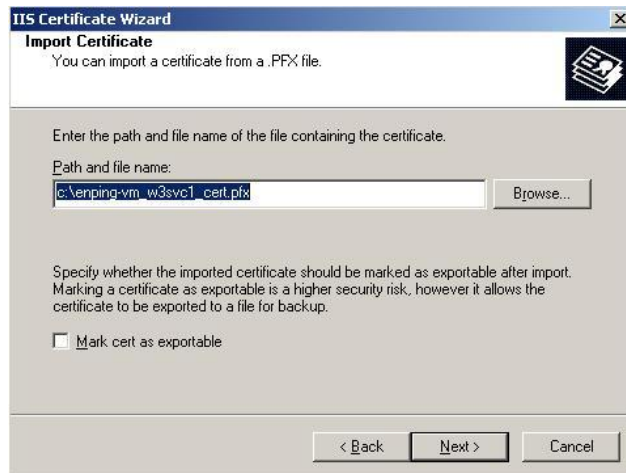
- a. Right click on **Default Web Site** in the console tree and select **Properties**.
- b. Select the **Directory Security** tab, and then click **Server Certificate**.



- c. Select **Import a certificate from a .pfx file**, then click **Next**



- d. On the **Import Certificate** page, browse to your certificate, then click **Next**



- e. On the **Import Certificate Password** page, enter the password for your .pfx file, then click **Next**
- f. On the **SSL Port Page**, in the **SSL port this web site should use** text box, enter 443 or another customized port number. If you are unsure which port to use, contact your organization's IT department.
- g. On the **Choose a Certification Authority** page, select an CA, then click **Next**
- h. On the **Certificate Request Submission** page, click **Next**, then **Finish**
5. Use the certificate for your ODC server
- a. Right click on **Default Web Site** in the console tree and select **Properties**
- b. Select the **Directory Security** tab, and then in the **Secure Communications** section, click **Edit**
- c. In the **Secure Communications** section, select the **Require secure channel (SSL)** check box
- d. Select **Require 128-bit encryption**, then click **OK**



- e. Also in the **Directory Security** tab, in the **Authentication and access control** section, click **Edit**
- f. Check **Enable Anonymous Access**
- g. In the **Authentication Methods** dialog, click **Basic authentication (password is sent in clear text)**



- h. You will receive a warning. Click **Yes**
  - i. Make sure that **Integrated Windows authentication** is not selected, then click **OK**
  - j. In the **Default Web Properties** dialog, click **OK**.
  - k. In the **Inheritance Overrides** dialog, click **Select All**, then Click **OK**
  - l. Click **OK** to close the **Internet Information Services (IIS) Manager**.
6. Test that SSL is working properly
- a. Open a browser
  - b. Enter  
[HTTPS://machinename/\(virtualdirectory\)/mod\\_gsoap.dll?crdbproxysvrer](HTTPS://machinename/(virtualdirectory)/mod_gsoap.dll?crdbproxysvrer)
  - c. If you receive a Security Alert dialog you have setup SSL correctly.

## PUBLISHING A REPORT TO CRYSTALREPORTS.COM

1. Ensure the data source used in the report is accessible by the server on which the ODC is installed.
2. Reports to be published for live data refresh using the ODC can be saved with or without data. For parameterized reports it is recommended these reports be saved without data in order for users to be prompted for input values when viewing the reports. For reports saved with data, users will have to use the refresh option found in the Crystal Viewer tool bar to refresh the report.



3. When uploading the report, check on “Establish Data Connection”, then select “Open Data Connector”, and type in the external web address where the ODC is located.

A screenshot of the CrystalReports.com web interface. The page title is 'CRYSTALREPORTS.COM'. There are tabs for 'Accounts', 'New Reports', and 'Settings'. The 'Accounts' tab is active, showing 'Account: Jason (Administrator)'. Below this are 'Reports' and 'Users' tabs. Under 'Available Downloads', there are links for 'Desktop Publisher' and 'Crystal Reports Viewer XI'. The 'Upload Document' section is visible, with a 'File Location' field containing 'D:\Documents and Settings\jhardy\Desktop\view.rpt' and a 'Browse...' button. The 'Document Name' field contains 'Test report'. There is a checkbox for 'Enable Download' which is unchecked. A red-shaded section contains the 'Establish Data Connection' options: a checked checkbox, and radio buttons for 'Open Data Connector', 'Data Warehouse Name', 'Excel Spreadsheet', and 'Other'. Below these are input fields for 'URI' (containing 'https://myserver/gsoap/mod\_gsoap.dll?crdbproxyserver'), 'User name' (containing 'jhardy'), and 'Password' (containing '\*\*\*\*\*'). At the bottom are 'Upload' and 'Cancel' buttons.

4. Once the report has been successfully uploaded into crystalreports.com click on the report to view it. If the report does not have saved data you should be prompted for a database logon (if applicable). This is an early indication that the report can successfully connect through the ODC to your data source.

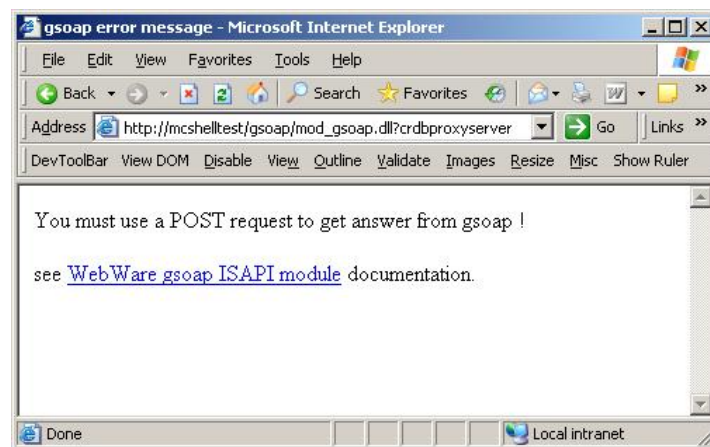
## INSTALLATION NOTES

- For more information about the mod\_gsoap ISAPI extension, please refer to [http://www.aberger.at/SOAP/iis\\_index.htm](http://www.aberger.at/SOAP/iis_index.htm)
- For a tutorial on setting up SSL in IIS, please refer to [http://www.petri.co.il/configure\\_ssl\\_on\\_your\\_website\\_with\\_iis.htm](http://www.petri.co.il/configure_ssl_on_your_website_with_iis.htm)
- For a trial SSL certificate, please refer to <http://www.instantssl.com/ssl-certificate-products/free-ssl-certificate.html>

## FREQUENTLY ASKED QUESTIONS

### How do I test the Open Data Connector once I set up my IIS?

In your browser, type `http://<server name>/<virtual dir>/mod_gsoap.dll?crdbproxysvr`. If you get a response back saying you must use a POST request to get an answer from gsoap, then the ODC is set up.



### When I try to test my ODC connection using browser, I get an error saying crdbproxysvr.dll cannot be loaded

Use dependency walker to check if crdbproxysvr.dll is missing any dependencies. Add the dependency that is missing. Typically, a missing dependency is a result of Crystal Reports XI R2 or BusinessObjects Enterprise R2 not being installed on the ODC server. You can download dependency walker from <http://www.dependencywalker.com/>

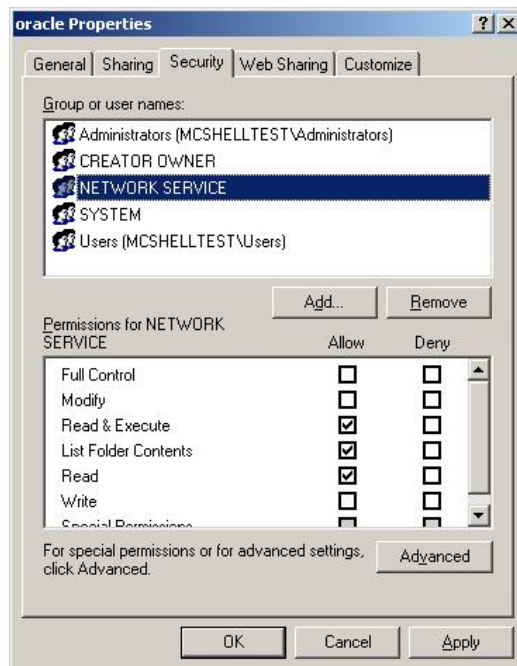
### I tried to upload a report and specified an Open Data Connector URI, however the report failed to be uploaded

1. *Please check that your report only contains one data source. Reports with multiple sources (cross data source joins) are not supported in this version.*
2. *Please check that you have typed the external web address for the ODC correctly.*

3. *If there are any firewalls placed in front of the web server on which the ODC is installed, the firewall will need to be configured to accept communication over the HTTPS port and allow inbound connections from crystalreports.com (ip address ranges 209.34.76.0-209.34.76.255, 209.34.86.\*-209.34.86.255, 209.34.87.\*-209.34.87.255, 209.34.84.\*-209.34.84.255).*
4. *Please refresh the report and then save the report with saved data before uploading*

**I installed Oracle client, and I could refresh Oracle reports with Crystal Report Designer with the native oracle driver (crdb\_oracle.dll), however I get an error that the dll cannot be loaded when refreshing using the ODC.**

1. *This error occurs because the crdbproxysvr.dll that runs within the IIS process does not have access right to load the oci.dll.*
2. *Use task manager to find out the user name that is running the IIS (dllhost.exe or w3wp.exe). (e.g. for w3wp.exe, the user that runs this is usually "NETWORK SERVICE")*
3. *Find out the location for oci.dll in the oracle install (e.g. c:\oracle\bin). Make sure the user who runs IIS can access the oci.dll as well as all its parent folders*



**When my report includes Access or Excel files using DAO (crdb\_dao.dll), and I try to refresh the report using ODC, the viewer keeps prompting me for logon.**

You will be prompted for logon because the crdbproxysvr.dll that runs within the IIS process does not have access right to your .mdb file or .xls file.

Please add the user name that is running the IIS (dllhost.exe or w3wp.exe) to the .mdb file or the .xls file, as well as its parent folders.

## **WHERE CAN I FIND MORE HELP?**

For additional help installing or configuring the ODC, please visit our technical support forums, located at:

<https://www.sdn.sap.com/irj/boc/businessobjects-ondemand>

## ACKNOWLEDGEMENTS

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