

Creating JDBC Connections in Crystal Reports XI

Overview

Crystal Reports (CR) XI makes it easier than ever before to display data using JDBC connections. The Crystal Reports XI reporting JDBC drivers and configuration files are installed with the product.

This document discusses how to create a Java Database Connectivity (JDBC) connection from Crystal Reports XI to a Microsoft SQL Server database.

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Introduction

This document explains the how to create a Java Database Connectivity (JDBC) connection from Crystal Reports XI to Microsoft SQL Server 2000 (SQL Server). Instructions are provided on downloading, installing and configuring the Java Development Kit (JDK), a SQL Server JDBC driver and the CRConfig.xml file. Finally, steps are provided for creating a JDBC connection within Crystal Reports XI.

To create a JDBC connection with Crystal Reports (CR) XI, the following items are needed:

- Crystal Reports XI
- Java Development Kit (J2SE SDK) version 1.4 or later
- Microsoft SQL Server 2000 (SQL Server) database JDBC driver
- A modified CRConfig.xml file

Setting Up the Environment for JDBC Connectivity

Downloading and Installing the JDK

Download and install the Java Development Kit (JDK) Version 1.4 (J2SE) or later. J2SE is available at the following link:

<http://java.sun.com/j2se/1.4.2/download.html>

Downloading and Installing the JDBC Driver

The JDBC database drivers are often provided by the database manufacturer. Generally, the JDBC drivers are installed when the database client is installed or the JDBC drivers can be downloaded from the manufacturer's web site.

Download and install the SQL Server JDBC driver from the following link:

<http://www.microsoft.com/downloads/details.aspx?FamilyID=4f8f2f01-1ed7-4c4d-8f7b-3d47969e66ae&displaylang=en>

Configuring the CRConfig.xml File

Crystal Reports XI uses the **CRConfig.xml** file to initialize the JDBC connection properties. The **CRConfig.xml** file is installed when CR is installed. By default, the **CRConfig.xml** file is found in the following directory:

C:\Program Files\Common Files\Business Objects\3.0\java\

1. Browse for and open CRConfig.xml in a text editor.
2. Configure the following elements as described below:
 - <JavaDir>
 - <Classpath>
 - <JDBCURL>
 - <JDBCUserName>
 - <JDBCClassName>

It is essential to set the <Classpath> element correctly in the **CRConfig.xml** file. All paths contained in the <Classpath> element must be correct. Items such as Database driver class names are case sensitive. Ensure that the proper case is used. The <Classpath> element will not permit extra spaces or line feeds. When word wrap is off, the <Classpath> element should fit on one line. Doing so will prevent hidden line feeds from appearing in the <Classpath>.

NOTE	The <LogonStyle> element may be changed but this modification is optional. If you are using a generic driver instead of a specific driver, the LogonStyle tag specifies the driver whose logon style you want to emulate. Valid values for <LogonStyle> are "DB2", "SQLServer", and "Oracle". Since we are connecting to SQL Server, the style should be set to SQL Server but this is not mandatory.
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Below is a sample **CRConfig.xml** file configured for a JDBC connection to a SQL Server database. Changes that you likely will need to make to the default settings are highlighted in bold>.

Example of CRConfig.xml configured for SQL Server

```
<?xml version="1.0" encoding="utf-8"?><CrystalReportEngine-configuration>
  <reportlocation>../..</reportlocation>
  <timeout>10</timeout>

  <ExternalFunctionLibraryClassNames>
    <classname> </classname>
    <classname> </classname>
  </ExternalFunctionLibraryClassNames>

  <keycode>bxsf23-a2311dz2310-0xya125-y02z3</keycode>
  <Javaserver-configuration>
  <DataDriverCommon>
    <JavaDir>C:\j2sdk1.4.2_06\bin</JavaDir>
```

<!-- When setting the Classpath element check the following items:

- Be sure all file paths listed are correct.
- Watch for hidden line feeds that only appear in your text editor if word wrap is off.
- Ensure that the driver class name in the <JDBCClassName> element uses the proper letter case expected by that driver.

-->

```

<Classpath>C:\Program Files\Common Files\Business Objects\3.0\java/lib/crlovmanifest.jar;C:\Program
Files\Common Files\Business Objects\3.0\java/lib/CRLOVExternal.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/CRDBJavaServerCommon.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/CRDBJavaServer.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/CRDBJDBCServer.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/CRDBXMLServer.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/CRDBJavaBeansServer.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/external/CRDBXMLExternal.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/external/log4j.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/cecore.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/ceelib.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/ebus405.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/corbaidl.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/external/freessl201.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/external/asn1.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/external/certj.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/external/jsafe.jar;C:\Program Files\Common Files\Business
Objects\3.0\java/lib/external/sslj.jar;C:\Program Files\Microsoft SQL Server 2000 Driver for
JDBC\lib\msbase.jar;C:\Program Files\Microsoft SQL Server 2000 Driver for
JDBC\lib\mssqlserver.jar;C:\Program Files\Microsoft SQL Server 2000 Driver for
JDBC\lib\msutil.jar;${CLASSPATH}</Classpath>
  <IORFileLocation>${TEMP}</IORFileLocation>
  <JavaServerTimeout>1800</JavaServerTimeout>
  <JVMMMaxHeap>64000000</JVMMMaxHeap>
  <JVMMMinHeap>32000000</JVMMMinHeap>
  <NumberOfThreads>100</NumberOfThreads>
</DataDriverCommon>
<JDBC>
  <CacheRowsetSize>100</CacheRowsetSize>
  <JDBCURL>jdbc:microsoft:sqlserver://SERVERNAME:PORTNUMBER</JDBCURL>
  <JDBCClassName>com.microsoft.jdbc.sqlserver.SQLServerDriver</JDBCClassName>
  <JDBCUserName>username</JDBCUserName>
  <JNDIURL></JNDIURL>
  <JNDIConnectionFactory></JNDIConnectionFactory>
  <JNDIInitContext></JNDIInitContext>
  <JNDIUserName>weblogic</JNDIUserName>
  <GenericJBCDriver>
    <Option>No</Option>
    <DatabaseStructure>catalogs,tables</DatabaseStructure>
    <StoredProcType>Standard</StoredProcType>
    <LogonStyle>SQLServer</LogonStyle>
  </GenericJBCDriver>
</JDBC>
<XML>
  <CacheRowsetSize>100</CacheRowsetSize>
  <PreReadNBytes>4096</PreReadNBytes>
  <XMLLocalURL></XMLLocalURL>
  <SchemaLocalURL></SchemaLocalURL>
  <XMLHttpURL></XMLHttpURL>
  <SchemaHttpURL></SchemaHttpURL>

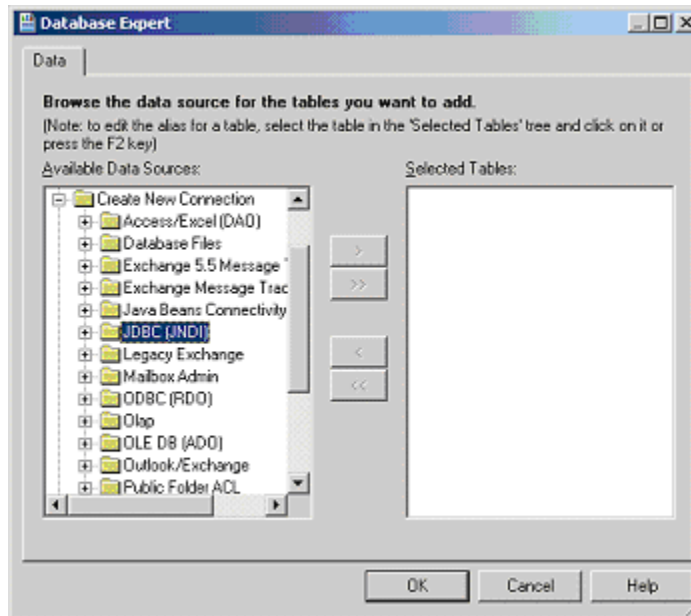
```

```
</XML>
<JavaBeans>
  <CacheRowsetSize>100</CacheRowsetSize>
  <JavaBeansClassPath></JavaBeansClassPath>
</JavaBeans>
</Javaserver-configuration>
</CrystalReportEngine-configuration>
```

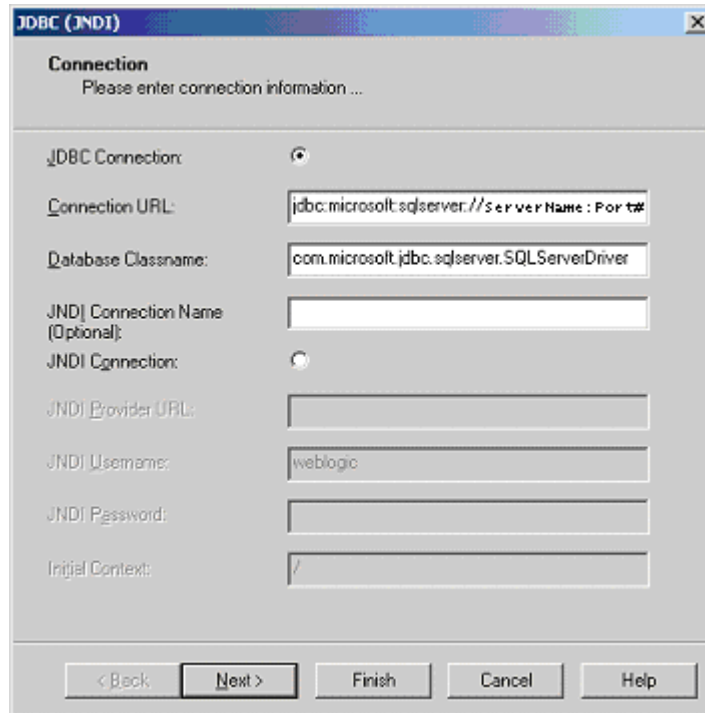
Creating a new Report with JDBC

After making the necessary configurations, you can begin creating a report.

1. In the Database Expert dialog box, expand the **Create New Connection** node and then click **JDBC (JNDI)**.



- The **Connection URL** and the **Database Classname** appear in the JDBC (JNDI) dialog box. Click **Next**.

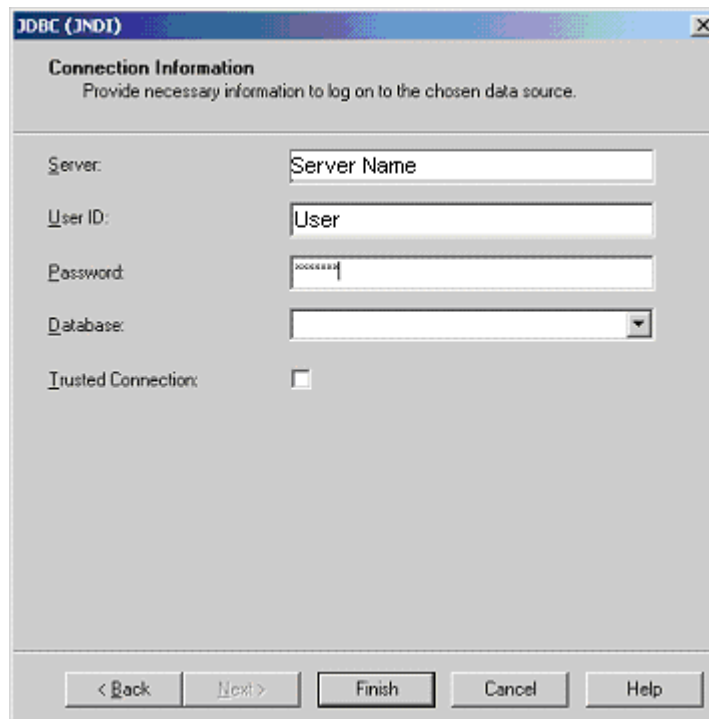


The screenshot shows the "JDBC (JNDI)" dialog box with the "Connection" tab selected. The title bar reads "JDBC (JNDI)". Below the title bar, the text "Connection" is displayed, followed by "Please enter connection information ...". The dialog contains several fields and options:

- JDBC Connection:** A radio button is selected.
- Connection URL:** A text box containing "jdbc.microsoft.sqlserver://Server Name:Port#".
- Database Classname:** A text box containing "com.microsoft.jdbc.sqlserver.SQLServerDriver".
- JNDI Connection Name (Optional):** An empty text box.
- JNDI Connection:** An unselected radio button.
- JNDI Provider URL:** An empty text box.
- JNDI Username:** A text box containing "weblogic".
- JNDI Password:** An empty text box.
- Initial Context:** A text box containing "/".

At the bottom of the dialog, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

- Enter your login information and click **Finish**.

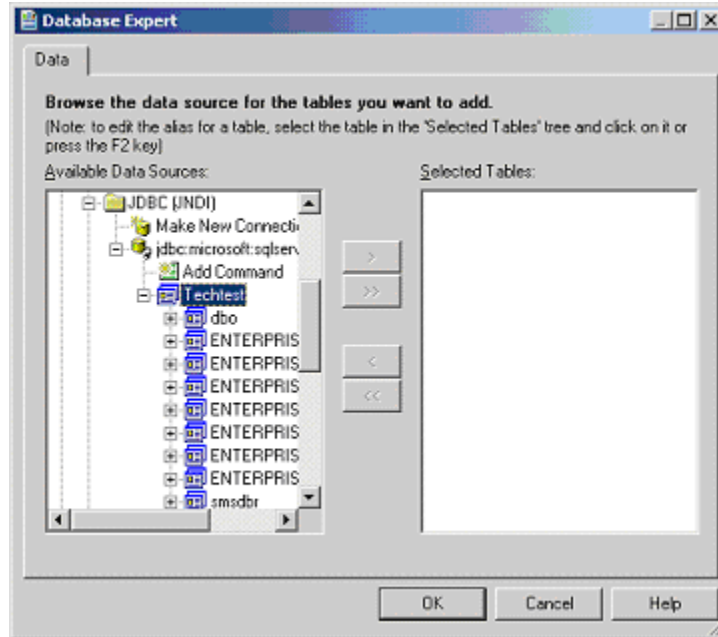


The screenshot shows the "JDBC (JNDI)" dialog box with the "Connection Information" tab selected. The title bar reads "JDBC (JNDI)". Below the title bar, the text "Connection Information" is displayed, followed by "Provide necessary information to log on to the chosen data source." The dialog contains several fields and a checkbox:

- Server:** A text box containing "Server Name".
- User ID:** A text box containing "User".
- Password:** A text box containing "*****".
- Database:** A dropdown menu.
- Trusted Connection:** An unchecked checkbox.

At the bottom of the dialog, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

- The JDBC connection is successful when a list of available tables appears in the Database Expert.



Error Message: “Unknown Database Connector”

When attempting to establish a JDBC connection, the following error message may appear:

“Unknown Database Connector”

This error appears for one of the following reasons:

- <Classpath> element is incorrectly configured.
- Hidden line feeds in the CRConfig.xml file.
- Incorrect case used for driver class names.

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