# Database Setup in IRI Workbench

Two types of database connectivity are required by the IRI Workbench. They are:

- Microsoft Open Database Connectivity (ODBC) for data movement between the database and IRI software
- Java Database Connectivity (JDBC) for visual browsing of, and SQL access to, the tables

## ODBC

Open Database Connectivity (ODBC), an industry-standard application programming interface (API), is used in SortCL to access data in a heterogeneous environment of relational and nonrelational database management systems (RDBMS and DBMS). Using the ODBC process in SortCL, you can address rows in tables along with records in flat files at the same time. Both input- and output-level support of connected database sources is provided. All Workbench dialogs and wizards that support tables, including Import ODBC Schema, Metadata Discovery, and ODBC table selection, and all CoSort command line programs that support tables, including sortcl.exe and odbc2ddf.exe, require ODBC.

Go to <u>Connect to a Database with ODBC</u> for more information.

### JDBC

Java Database Connectivity (JDBC) is an API used for database-independent connectivity between the Java programming language and a wide range of databases and other tabular data sources, such as flat files or spreadsheets. Although it is similar to ODBC, JDBC is designed specifically for Java programs, while ODBC is a language-independent application.

JDBC connection support is provided through the optional Eclipse Data Tools Platform (DTP) that is included in **CoSort** Workbench. DTP includes the Data Source Explorer that enables you to view your connection profiles and visually explore your data.

For complete information about the connection-management functionality in the DTP, search for **Data Tools Platform** by clicking **Help** in the top menu bar, and then selecting **Search**.

Go to <u>Connect to a Database with JDBC</u> for more information.

## **Data Connection Registry**

Use the Data Connection Registry in IRI Preferences to map the ODBC connections to JDBC connections. This allows IRI Workbench to populate information from whichever connection it needs for a particular task.

Go to Data Connection Registry for more information.

## **Connect to a Database with ODBC**

Use the ODBC Data Source Administrator in Windows to set up connections to your databases. A 64-bit Microsoft Windows version has the following versions of the ODBC Data Source Administrator tool (odbcad32.exe):

- The 32-bit version of the Odbcad32.exe file is located in the %systemdrive%\Windows\SysWoW64 folder.
- The 64-bit version of the Odbcad32.exe file is located in the %systemdrive%\Windows\System32 folder.

**NOTE:** The 64-bit ODBC Administrator tool can be invoked from Control Panel to manage user DSNs and system DSNs that are used by 64-bit processes. On a 64-bit operating system, the 32-bit ODBC Administrator tool is used for Windows 64 (WOW64) processes. You must directly invoke the 32-bit ODBC Administrator tool from the SysWoW64 folder. You can use the 32-bit ODBC Administrator tool to manage user DSNs and system DSNs that are used by WOW64 processes.

1. Open the ODBC Data Source Administrator, and then click the **System DSN** tab.

er DSN	System DSN	File DSN	Drivers	Tracing	Connection F	ooling Abou	
Name	Driver				-	Add	
lahar orad	Oracle in .	Oracle in XE			-	Remove	
mysqi MYTwiste twister	MySQL O MySQL O	MySQL ODBC 5.1 Driver MySQL ODBC 5.1 Driver MySQL ODBC 5.1 Driver				Configure	
ĸe	Uracle in .	XE					
	An ODBC Sy the indicated on this mach	stem data s data provic ine. includin	ource sto ler. A Sy la NT sen	res informa stem data vices.	tion about how source is visibl	to connect to e to all users	

#### 2. Click Add.

The Create New Data Source driver selection page opens.

	Name	۷ ۴
	Microsoft Text Driver (*txt; *.csv)	6
011 0	Microsoft Text-Treiber (*.txt; *.csv)	6
	Microsoft Visual FoxPro Driver	1
	Microsoft Visual FoxPro-Treiber	1
	MySQL ODBC 5.1 Driver	5
	Oracle in XE SQL Server	
	•	+

3. Select the appropriate driver for the database to which you are connecting, and click **Finish**.

The connection page opens for the database you selected. This example provides an Oracle connection.

- 4. Complete each field. For this Oracle example, do the following:
  - In the Data Source Name field, type the name for this ODBC data source.
  - In the TNS Service Name field, type the name of your Oracle service. This name is specified in the tnsnames.ora file defined for your Oracle client.
  - In the User ID field, type the username that you use to log into the Oracle database.
  - The Oracle ODBC Driver Configuration page will be similar to the following:

Data Source Name	Oracle To	Oracle Test				
Den i din			Cancel			
Description						Help
TNS Service Name	×E	i 👻			•	
User ID	sharonh	sharonh				
Application Oracle W	/orkarounds	SQLServer Migra	ation			
Application Oracle M Enable Result Sets Enable Closing Cursors	Vorkarounds	SQLServer Migra ble Query Timeout ble Thread Safety	ation V V	Read-Only C	onnection	]
Application Oracle M Enable Result Sets Enable Closing Cursors Batch Autocommit Mod	Vorkarounds Ena Ena Je Cor	SQLServer Migra ble Query Timeout ble Thread Safety mmit only if all state	ation	Read-Only C succeed	onnection	]

- Click **Test Connection**, type the password, and then click **OK**. Your connection should be successful. If it is not, check your specifications and contact your DBA.
- When you are done completing the configuration page for your specific database, click OK. The ODBC Data Source Administrator will now show your new connection on the System DSN tab.

er DSN Sy	stem DSN	File DSN	Drivers	Tracing	Connection F	ooling Abo
Name	Driver					Add
lahar oracle mysql MYTwister Oracle Test	Oracle in 2 MySQL 0 MySQL 0 Oracle in 2 MySQL 0	KE DBC 5.1 Dri DBC 5.1 Dri KE DBC 5.1 Dri	ver ver			Configure
xe	Oracle in 2	KE				
A th	n ODBC Sy e indicated n this mach	stem data s data provid ne, includin	ource stor ler. A Sy g NT serv	res informa stem data rices.	tion about how source is visibl	to connect to all users

6. Click **OK**.

**NOTE:** For additional database information, contact your system or database administrator (DBA).

## **Connect to a Database with JDBC**

Use the New Connection Profile wizard to connect to a database using Java Database Connectivity (JDBC). If you need assistance on any page of the wizard, click the help button for detailed help.

- 1. Open the DTP Data Source Explorer by clicking **Window** on the top menu bar, and then selecting **Show View > Data Management > Data Source Explorer**, and then click **OK**.
- 2. Click the new connection profile icon 🚳 to create a connection profile. The Connection Profile wizard opens.

Connection Profile	
Create a MySQL connection profile.	
Connection Profile Types:	
type filter text	
HSQLDB Informix Ingres MaxDB	*
<ul> <li>MySQL</li> <li>Oracle</li> <li>PostgreSQL</li> <li>SQL Server</li> <li>SQLite</li> <li>Sybase ASA</li> <li>Sybase ASE</li> <li>Web Services Data Source</li> </ul>	E
Name:	
New MySQL	
Description (optional):	

- 3. Select the type of connection you are creating, such as MySQL.
- 4. Complete the fields on this page, and then click **Next**. The New Connection Profile wizard opens at the Specify a Driver and Connection Details page.

New Connection Profile	
Specify a Driver and Connection Details Enter a database name.	
Drivers: MySQL JDBC Driver	• • <u>\</u>
Properties	
General Optional	
Database: URL: User name: Password: Save password	
Connect when the wizard completes	Test Connection
Compared Rext > Finish	Cancel

5. In the **Drivers** field, click the new driver definition icon icon to add a new driver to the connection profile.

The New Driver Definition page opens.

ame/Type JAR List Properties		
vailable driver templates:		
Name	System Vendor	System Version
MySQL JDBC Driver MySQL JDBC Driver MySQL JDBC Driver	MySQL MySQL MySQL	4.1 5.0 5.1
)river name:		

- 6. Complete the fields on the **Name/Type** tab. Click the help button for detailed help with this page.
- 7. Select the **Jar List** tab. You must include the complete path to the JAR or ZIP file associated with the driver. If you do not have the required JAR file, go to the web site for the database you are using and download the file.

**NOTE:** If a JAR file is shown without a complete path (used as a place holder), remove the file and replace it with the complete path and file name.

New Driver Definition	X
Specify a Driver Template and Definition Name Modify details in the fields below to provide a unique name, a list available and applicable property values.	of required jars, and set any
Name/Type JAR List Properties	
Driver files:	
C:\DDLand JDBC drivers\mysql-connector-java-5.1.13-bin.jar	Add JAR/Zip Edit JAR/Zip Remove JAR/Zip Clear All
•	OK Cancel

8. Select the **Properties** tab and modify the default properties for the driver definition template. Options vary based on the type of server.

Name/Type JAR List Properties		
Properties:		_
Property	Value	
General		
Connection URL	jdbc:mysql://localhost:3306/database	
Database Name	database	
Driver Class	com.mysql.jdbc.Driver	
Password		
User ID	root	

#### 9. Click **OK**.

You are now back to the New Connection Profile page, on the General tab.

- 10. You have completed the information in the Drivers field, so now you must complete the fields in the Properties section on the General tab.
- 11. Select the **Optional** tab to include additional connection properties. The Optional tab opens showing the Additional properties field.

New Connection Profile	
Select a driver from the drop-down and provide login details for connection.	the
Drivers: MySQL JDBC Driver	• 🕷 🛆
Properties General Optional	
Additional properties:	
	Add
	Up
	Down
	Remove
	Clear All
1	
Connect when the wizard completes	Test Connectio
Connect every time the workbench is started	L.
(?) < Back Next > Finish	Cancel
	Curren

- 12. When you are done adding properties, click **Test Connection** to ping the server and verify that the connection profile is working.
- 13. Click **Finish** to complete your new connection profile.

# **Data Connection Registry**

Use the Data Connection Registry to view, add, remove, and modify your database connections. The page displays all your registered connections and specific information about each. You can also import or export the data connection registry.

N Preferences						
type filter text	Data Cor	nection Registry				⇔ - ⇔ -
<ul> <li>▷ General</li> <li>&gt; Acceleo</li> <li>&gt; Ant</li> <li>&gt; ATL</li> </ul>	Registered fields. Clic ODBC Adr	data connections. Click e k edit or double-click the nin screen.	edit to modify Type (S entry to make change	ystem or es. Click F	User vs File), Authentication, and Refresh to add any missing DSN e	I Connection Profile ntries from the
Data Management	Active	DSN	Туре	Auth	Connection Profile	Add
Easy Shell	$\sim$	MYTwister			Twister MySQLorg	Ealit
Ecore Tools Diagram	$\sim$	Oracle	8		Oracle	Edit
b Help	$\sim$	Sunset				Remove
▷ Install/Update = IDI	$\checkmark$	oracle_local		<b>_</b>	Oracle	
⊿ IKI C=S=±	~	oratwist			Oracle twister	Refresh
Data Classes and Gro						Import
Data Connection Re						Export
FACT						
Flow						
Library						
Mapping Manager						
NextForm						
Project Folders						
RowGen						
Scheduler						
> Java						
Maven					Restore Defaul	ts Apply
					Restore Deladi	Арру
?					ОК	Cancel

While the **DSN** column on the page lists all DSNs listed in ODBC Admin screen under System and User, the **Active** box shows that those DSNs should be visible in DSN combo boxes in IRI Workbench.

A green check mark displays in the **Auth** column if you saved, on this preference page, the authentication of any ODBC connection that does not store the user name and password for you.

Referring to the JDBC connection you've made in the Data Tools Platform (DTP) plug-in in the Workbench (shown in the Data Source Explorer windows), the **Connection Profile** column provides the mapping information for the specific data source.

The **Add** and **Edit** buttons open the Data Connection Registry dialog to add new connections to the registry, or to modify existing connections:

N Data Con	nection Registry
Data Conn Select opti	ection Registry ons for the data connection.
DSN Type	
System 🔘	or User DSN
Open	ODBC Admin
Schema	Filter:
File DSN	1
File:	C:/Users/sharonh/Documents/ALL WIP PROJECTS/ABC NEW WORI Browse
Name:	Sunset
Authentica Add use User: Passwo	rd:
Mapping Connection	n Profile: 🗾 🔹 New Profile)
?	OK Cancel

This dialog provides four options for data connections:

• **DSN Type** – Add a new system or user data source via the ODBC Data Source Administrator, which opens when you click the button in this section. Complete the ODBC Data Source Administrator session to add a new connection. The new system or user data source is automatically included in the Data Connection Registry. Use the Schema Filter field to filter schema to any ODBC or system DSN. For example, if your schema is SALES, only the tables in the SALES schema are shown.

- File DSN Use the browse option to locate and select a *file*.dsn. The path and file name display in the File field, and the name of the *file*.dsn is in the Name field. Note that to create a file DSN connection, you must first <u>create the file which includes the connection information and a .dsn extension</u>. While a system or user DSN is automatically included in the Data Connection Registry, you must add a file DSN because the system cannot automatically locate the file that defines the DSN.
- Authentication Add authentication for any ODBC connection by adding the username and password. When a connection has authentication added, a green check mark displays in the Auth column on the Data Connection Registry.
- Mapping To map your specified data source, select a connection profile from the list in the Mapping section. Or, create a new connection profile that contains the connection property information for a data source in your enterprise. Mapping your data connections to the Data Tools Platform (DTP) is required. If the connection is not mapped, you are prompted to do so while using a job wizard.

To remove a connection from the registry list, select that connection, and then click **Remove**. To import or export your entire data connection registry in an XML-formatted document, use the corresponding **Import** and **Export** buttons on the Data Connection Registry preferences page. The following is a piece of the XML file of the exported data connection registry shown in the screens above.

```
<7xml version="1.0" encoding="UTF-8" standalone="true"?>

    <connMap>

    <info>

      + <entry>
      - <entry>
            <key>Oracle</key>
           <value>
               <active>true</active>
               <authorization/>
               <dsnName>Oracle</dsnName>
               <dtoName>Oracle</dtpName>
               <fileDsnPath/>
           </value>
        </entry>

    <entry>

            <key>Sunset</key>
          - <value>
               <active>true</active>
               <authorization/5
               <dsnName>Sunset</dsnName>
               <dtpName>Oracle</dtpName>
               <fileDsnPath>C:/Users/sharonh/Documents/ALL WIP PROJECTS/ABC NEW WORK/Blog/Sunset.dsn</fileDsnPath>
            </value>
        </entry>
```

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