



Working with Database Connections

Intellicus Enterprise Reporting and BI Platform



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For details, visit: <http://www.intellicus.com/acknowledgements.htm> .

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Configuring database connections

Intellicus Server supports multiple database connections. A database connection needs to be configured for Intellicus to fetch data for reports and to access metadata.

You need to have Super Administrator privileges to be able to setup database connections.

To get Database connections page click Navigation > Administration > Configure > Databases.

Figure 1: Connection Configuration page



Note: If Intellicus is running under security disabled, specify following URL in the browser's address bar to get this page.

If you are using the computer used as web server,

<http://localhost/intellicus/pattern/conf> and then click Databases tab if this tab is not in front.

In other cases,

<http://<IP of the server>/Intellicus/pattern/conf> and then click Databases tab if this tab is not in front.

The table on the top of the page displays existing connections in application.

- **Name:** Name of the database connection.
- **Provider:** Data provider used for the connection.

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- **Default:** A tick indicates that the connection is default database connection.
- **Repository:** Intellicus metadata is stored in repository. A tick indicates that the connection is repository connection.
- **Status:** Indicates availability of a connection. A green circle indicates that the connection is valid (available). Red circle indicates that the connection is presently not available. An R near the status indicates that the connection requires User name and Password at run time.

Click connection name to view its complete details.

On this screen, you can

- Add a new database connection
- Update an existing database connection
- Remove an existing database connection
- Test a database connection's validity
- Work with Access rights on selected data connection

Buttons on the page

- **Add:** To start configuring a new connection.
- **Modify:** To modify selected connection.
- **Delete:** To delete selected connection.
- **Refresh Schema:** To manually refresh schema of the selected connection.
- **Import OLAP Cubes:** For OLAP type connections, open the dialog to import cubes.

To filter list of Connections

List of connections can be filtered by:

- Starting character (Starts with)
- Characters that appear anywhere in the connection name (Contains)

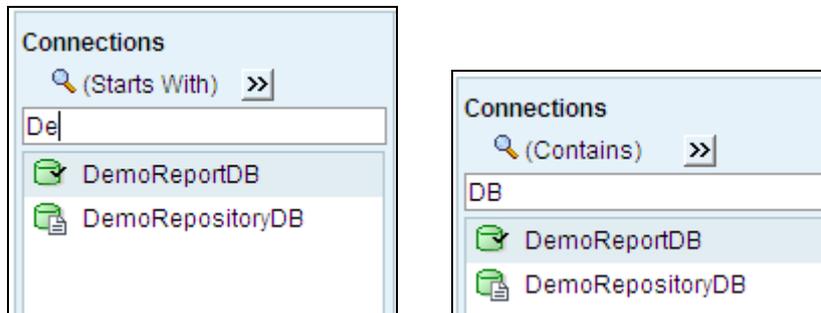


Figure 2: Filtering list of connections

1. On **Connections** page, check the option on right of 🔍 .
2. To get the right option there, click >> and select *Start with* or *Contains*.
3. Specify character(s) in the textbox.

The list will be filtered (not case sensitive) as per the criteria.

To add a connection

Figure 3: Adding a data connection

1. Click **Add** button. All the entry boxes are getting cleared.
2. In **Connection Name** entry box, specify name of the new connection.
3. In respective entry boxes, specify information for new connection.
4. Optionally, click **Test** button to test the validity of the connection detail.
5. Click **Save** Button.

The new connection is set.

The entry details

Connection Name uniquely identifies the connection. The name will be listed in connection related dropdowns across the application. Users who design query objects and reports will select a connection they want to use to fetch report data.

Important: Connection Name is a case sensitive field. For example, "SalesDataConnection" is not same as "salesdataconnection".

A **Provider** is a set of libraries that communicates with a database. Intellicus supports all popular databases. Select the provider from the dropdown that will be used by this connection. The driver class that will be loaded for the selected provider will be displayed next to the dropdown.

Note: If you are using a database that is derived from PostgreSQL, (for example, EnterpriseDB) select POSTGRES as database provider.

Provider specific details for database connection

When you select a database, text boxes specific to the selected database are made available on screen.

Asterdata

- **Host:** The IP or name of the machine where database is installed.
- **Port:** The port at which database server listens.
- **Database:** Specify name of the database to connect to.

CACHEDB

- **Server:** The IP or name of the machine where database server is running.
- **Port:** The port at which database server is listening.
- **Namespace:** This is a unique name that identifies a specific namespace on CACHE database.

DB2

- **Server:** The IP or name of the machine where database server is running.
- **Port:** The port at which database server is listening.
- **Database:** Specify name of the database to connect to using this connection.
- **Schema (optional):** Specify the schema to be used for the specified user for this database connection.

H2 (Embedded)

- **Path:** The path (including the file name) to the location where database file is available.

H2 (Standalone)

- **Server:** The IP or name of the machine where database server is running.
- **Port:** The port at which database server is listening.
- **Path:** The path to the folder where database files are residing.

HIVE

Select Hive if your data is stored on hadoop.

- **Driver Version:** Presently 0.5.0 is supported.
- **Host:** The IP or name of the machine where database is installed.
- **Port:** The port at which database server listens.
- **Database:** Specify name of the database to connect to.

MSSQL

- **Driver version:** Select the driver version of MSSQL Database to connect to using this connection.
- **Authentication Mode:** Select *Server Authentication* if you want the Database server should authenticate. You need to provide user name and password for the database. Select *Windows Authentication* to use the credentials used for windows authentication. In this case, Windows user name and password used to log into the machine where Intellicus report server is running will be used for authentication.
- **Driver Type:** Select *Microsoft* or *JTDS* based on the driver you want system to use.
- **Server:** The IP or name of the machine where database server is running.
- **Port:** The port at which database server is listening.
- **Database:** Specify name of the database to connect to using this connection.
- **Domain:** Specify the name of the network domain .(Domain is asked when you select Authentication Mode as Windows and Driver Type as JTDS)
- **Instance:** Specify the name of the instance with which you want to connect.

HSQldb

- **Server:** The IP or name of the machine where database is installed.
- **Database:** Specify name of the database to connect to using this connection.

MYSQL

- **Driver Version:** Select the desired driver version for MYSQL.
- **Server:** The IP or name of the machine where database server is running.
- **Port:** The port at which database server is listening.
- **Fetch size:** Specify -1 to receive one by one record as a stream. This is good if you have a very large recordset. Leave it blank to receive entire recordset at a time.



Important: Value set in Report Server property Data Source Fetch Size will not remain effective for MySQL database.

- **SID:** This is a unique name that identifies a specific database from number of databases on a server.

ODBC

- **DSN:** Specify the System DSN created for the ODBC connection.

ORACLE

- **Driver type:** Select one of the driver you are using to connect to the database.
- **Driver version:** From options, select the driver version.
- **Server:** The IP or name of the machine where database server is running.
- **Port:** The port at which database server is listening.
- **SID:** This is a unique name that identifies a specific database from number of databases on a server.

ORACLE_THIN

- **Server:** The IP or name of the machine where database server is running.
- **Port:** The port at which database server is listening.
- **SID:** This is a unique name that identifies a specific database from number of databases on a server.

POSTGRES

- **Server:** The IP or name of the machine where database server is running.
- **Port:** The port at which database server is listening.
- **SID:** This is a unique name that identifies a specific database from number of databases on a server.



Note: If you are using a database that is derived from PostgreSQL, (for example, EnterpriseDB) select POSTGRES as database provider.

SYBASE

- **Driver type:** Select the driver type to be used to connect with this database.
- **Server:** The IP or name of the machine where database server is running.
- **Port:** The port at which database server is listening.
- **Database:** Specify name of the database to connect to using this connection.

OTHERS



Note: Before specifying driver details for OTHERS connection, you need to add respective driver using **Add Driver** button on **Databases** page.

- **Driver class name:** Specify the driver class name for the driver.
- **URL:** Construct the URL including all the parameters required to access the database server.

CUSTOM JDBC

Select this provider when you use non-sql way to access from data source.

- **Driver class name:** Specify the driver class name for the driver.

MONDRIAN / MSAS

Presently Intellicus supports Mondrian and MSAS as OLAP data providers.

Refer to WorkingWithOLAPReports.pdf for provider details of MONDRIAN and MSAS.

VERTICA

User is now able to upload, download and edit the pluggable function library script files from Configuration Files UI. A new file group can be added for the same.

The user needs to have driver of Vertica. The same needs to be placed at C:\Program <Install path>Intellicus\ReportEngine\lib.

- **Host:** The IP or name of the machine where database is installed.
- **Port:** The port at which database server listens.
- **Database:** Specify name of the database to connect to using this connection.

- **Schema** (optional): Specify the schema to be used for the specified user for this database connection.

SAND

The user needs the driver of SAND. The same needs to be placed at <Install path>\ReportEngine\lib\SAND. Create this folder if it is not already created.

- **Host**: The IP or name of the machine where database is installed.
- **Port**: The port at which database server listens.
- **Database**: Specify name of the database to connect to using this connection.
- **Schema** (optional): Specify the schema to be used for the specified user for this database connection.

Uploading a database driver

If the provider you are looking for is not listed in the **Provider** dropdown but you have its library files, click **Add Driver** button to add respective driver files (if not added already) and then select **Others** option in **Provider**. In this case you will also have to specify Driver Class Name.

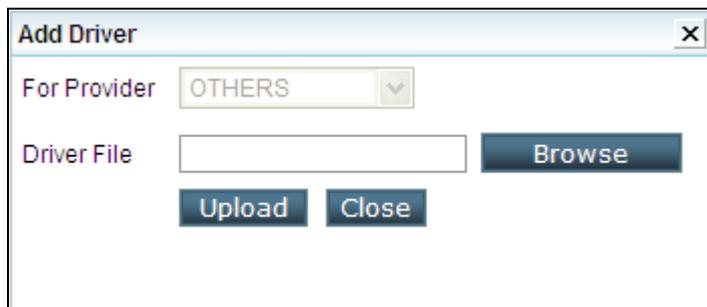


Figure 4: Add Driver dialog box

1. Click **Add Driver** button to open **Add Driver** dialog box.
2. In **Driver File** entry box, specify the driver file name along with the path.
3. Click **Upload** button.

The file will be updated and success message will appear. Failure message will appear in case driver could not be uploaded.

Click **Close** button to close the dialog box.

Details on Database tab

Specify **Username** and **Password** that should be used to open a connection with the database. Check **Blank** checkbox, if user name and password is not required to connect to the database.

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If you check **Runtime** checkbox, each application user will have to provide username and password when he/she tries to access database (for example, to generate a report or to open SQL Editor, etc.).

As you fill in the details for the connection, application auto-generates a **URL** that it will use to connect to the database. By default the URL is masked. To view the URL, uncheck **Mask URL** checkbox.



Note: In case of OTHER database driver, URL will not be automatically created. It needs to be specified.

In **Charset Encoding**, select UTF-8 if the database is created or started with UTF-8 encoding. Otherwise, leave it blank.

User may create an SQL while working with the application. To keep your database safe against any accidental or incorrect execution of any Create, Update or Delete queries, check **Read Only** checkbox to make sure only SQLs having read operations are executed on this connection.



Important: Intellicus does not have any control over Procedures executed on Read Only connections. A procedure will execute even if it has statements performing other than read operations.

Check **Is Default** checkbox to use this connection as the application default data connection. Unless specified exclusively, application will use default connection to fetch report data. This connection will be selected when you select (default) in Connection dropdown across the application.



Note: When OLAP provider is selected, Is Default changes to OLAP Default.

Most of the Intellicus metadata is stored on database (known as repository database). If this connection should be treated as repository connection, check **Is Repository** checkbox.



Note: (1) Add, update and delete operations are performed on repository database. The user must have Create table privilege on this database. (2) If repository connection is changed, you need to re-start the report server. (3) Repository connection cannot be setup on some of the providers like Asterdata, HIVE and OLAP.

Pool Settings Details

Every database access request will consume one data connection. When report server boots up, it opens a pool of all configured connections and caches their metadata.

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Pool Settings			
Initial Connection(s)	<input type="text" value="5"/>	Incremental Size	<input type="text" value="5"/>
Resubmit Time	<input type="text" value="30"/> Sec(s)	Max. Connections	<input type="text" value="30"/>

Figure 5: Connection pool settings

In **Initial Connections**, specify the number of connections that should be opened initially. Default: 5.



Note: Connections are opened when report server starts. For connections where Runtime checkbox is selected, Report Server opens connections at the setup time only if user credentials were provided at that time. If not, then they are opened at the time of first request.

In **Incremental Size**, specify the number of connections to open when the all open connections are consumed. For example, if 10 connections are presently opened and Incremental Size is 3, then when these 10 connections are consumed, 3 more connections will be opened. Default: 5.

In **Max. Connections**, specify the maximum number of connections that can be opened to the selected database at a time. Default: 10.

Note: Maximum number of connections that a database will actually allow to open is database license dependent.

If a connection is idle, it should be resubmitted. So that other applications can use those connections. Connections can be submitted when the number of open connections is more than number of Initial Connections. Connections can be resubmitted in a lot of number specified in "Incremental Size". Connections are resubmitted by running a resubmit request. In **Resubmit Time**, specify the waiting-time in seconds before generating re-submitting request. Default: 30 seconds.

Example:

- Initial connections: 10
- Incremental size: 3
- Open connections: 16

When resubmit thread runs:

- Idle connections: 1 or 2 > no connection will be resubmitted
- Idle connections: 3 or 4 or 5, 3 connections will be resubmitted
- Idle connections: 6, or more, 6 connections will be resubmitted

Database Time Zone

When application users are spread across multiple time zones, they may need to receive output of date / time fields as per time zone in which the data was entered in database. For example, if the data in "BirthTime" field of a table in the database is entered as per US Pacific Time, select corresponding option in **Database Time Zone**.

In application, wherever SYS_CON_TZ is selected as database time zone (like parameter creation, query creation and during report designing), date data will be converted from time zone specified here to the user time zone.

Keep it blank when you want users to select database time zone at run time.

Cache

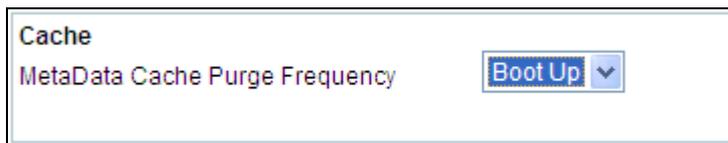


Figure 6: Cache settings

When a database connection is setup for the first time, metadata is cached. **MetaData Cache Purge Frequency** defines the time when metadata (table names, field names, etc.) cached for the selected connection should be deleted and refreshed:

- If this is set to *Never*, application will never delete and refresh the metadata.
- If this is set to *Boot Up*, every time server is booted, metadata for this data connection will be deleted and refreshed. Select this option only when a database is undergoing frequent changes in terms of number of tables, fields, etc.



Important: When you are setting up a connection for a database on Oracle database server, make sure you have installed the right version of driver that is compatible with the version of database server.

Multiple Instances of MS SQL Server 2000

Each of the instances of MS SQL Server listens on a specific port. To use multiple instances of MS SQL Server in Intellicus, you need to create one database connection for each of the instances. For these connections, server IP will remain the same for all the connections, but port will be unique to each of the connection.

OCI and OCI_TNS connections on Solaris

Appendix

Before creating OCI and OCI_TNS connections on Solaris, make sure the machine has Oracle client installed and Oracle Client library file (libocijdbc9.so) is set in PATH environment variable (LD_LIBRARY_PATH).

To set the file PATH,

1. Open run.sh file in vi editor This file is located at <Install>/reportengine/bin.
2. Append <OracleHome>/OraHome1/lib32 path like

```
LD_LIBRARY_PATH=  
$JRE_HOME/lib:$JRE_HOME/lib/sparc/  
server:$JRE_HOME/lib/sparc:/export/home/oracle/OraHome1/lib32  
(all in continuation)
```

3. Save the file run.sh.
4. Restart Intellicus server.



Note: While creating an OCI connection with Oracle 8 or above, remove the number 8 from connection URL created automatically in Intellicus. For example, change URL from jdbc:oracle:oci8:@tns_name to jdbc:oracle:oci:@tns_name.

When Oracle 8 client or Oracle 9 client is installed on Windows

Intellicus recommends Oracle JDBC THIN connections for smooth and compatible access to Oracle Databases of various versions – 8, 9 or 10.

Intellicus also supports OCI_TNS (Oracle Call Interface Net Service Names) for those who want to use their Oracle client installations to connect to Oracle databases.

If Oracle client is not installed on report server machine, then Intellicus chooses to use ojdbc14.jar, for THIN connections.

If the report server machine has Oracle 8 or 9 client installed, then Intellicus chooses to use classes12.zip, assuming that client is compatible with the server version being connected to.

Intellicus allows Administrator to decide which driver Intellicus should use by following the below mentioned steps.

Steps:

Make changes in Report Engine loader batch file.

- 1) Open the file from path

```
<install_dir>/ReportEngine/bin/run.bat
```

- 2) Add the highlighted line to the file:

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```
@echo off
set JRE_HOME=..\..\jre
set ORACLE_DRIVER=..\lib\ojdbc14.jar
set
PATH="."; %JRE_HOME%\bin; %JRE_HOME%\lib; %JRE_HOME%\bin\server; %PAT
H%

SET INTELLICA_CLASSPATH=
FOR %%i in ("..\lib\*.jar") DO CALL includelib %%i
notIncludeIEngine

FOR %%i in ("..\lib\*.ZIP") DO CALL includelib %%i
notIncludeIEngine

iEngine -oracledriver%ORACLE_DRIVER% %INTELLICA_CLASSPATH%
"../config/ReportEngine.properties" -Xms20M -Xmx128M
```

In the batch file, a variable is being set to the name & path of the oracle driver we wish Intellicus to use.

```
set ORACLE_DRIVER=..\lib\ojdbc14.jar
```

3) Change the iEngine calling line to pass the variable.

```
iEngine -oracledriver%ORACLE_DRIVER% %INTELLICA_CLASSPATH%
"../config/ReportEngine.properties" -Xms20M -Xmx128M
```

The above example forces Intellicus to use ojdbc14.jar driver for Oracle connections.



Note: Intellicus can use only one type of Oracle driver, so cannot make connections to various server versions, if it needs different drivers.



Warning: If due to Oracle client version or due to administrator decision, classes12.zip is used for connections then there might be some problems in activities like publishing or emailing a report having large number of parameters.



Warning: When ojdbc14.jar is forcefully used on machines with Oracle 8 or 9 client installs, then, OCI_TNS type of connections cannot be created.

To Test a database connection's validity

1. Select the connection by clicking on the connection name in the table. The information set up for the selected connection appears in respective entry boxes.

2. Click **Modify** button.
3. Click **Test** button.

If the selected connection is valid, **Connection Test Succeeded** message will appear.

To update a connection detail

On **Databases** tab of **Configure** page,

1. Select the connection by clicking on a connection name in the table.
2. Click **Modify** button. The information set up for the selected connection appears in respective entry boxes.
3. Specify new information where required.
4. Optionally, click **Test** button to test the validity of the connection detail.
5. Click **Save** button.

To remove a connection detail

On **Databases** tab of **Configure** page,

1. Select the connection by clicking on a connection name in the table. The information set up for the selected connection appears in respective entry boxes.
2. Click **Delete** button. A dialog confirming delete operation appears.
3. Click **Ok** to proceed with the deletion.

To refresh metadata caching

Metadata is cached when a database connection is created. It is refreshed depending on value set in **MetaData Cache Purge Frequency**. To refresh the metadata manually, select the data connection and click **Refresh Schema** button. On **Confirm Refresh** dialog, click **Yes** to proceed. A message *A request for refreshing (name of the connection) schema has been sent to the Report Server* will be displayed.

Which data connection will a report use?

The data that user gets on a report is fetch from a database using a data connection. Based on the edition of Intellicus and license, you can set one or more data connection in Intellicus.

Database (data connection) to be used to run reports can be set in following ways:

- While actually running the report.
- While specifying just after login into Intellicus (at session level). This remains default for any type of database use (report running, running queries, etc).
- By setting up on **User Preferences** page.
- By specifying it as a part of Report Details (while uploading a report through portal or through cab).
- By specifying it in while designing the report (IRL file).
- By specifying a default data connection.

When a report is being run, Intellicus will use the data connection in following order:

1. Use the data connection that was selected while actually running the report from **Report Delivery Options** page.
2. If the connection was not selected on **Report Delivery Options** page, use the database connection selected at the time of login into Intellicus (session level).
3. If the connection was not selected while login, use the connection selected on **User Preferences** page.
4. If a connection is not selected on **User Preferences** page, use the connection selected while deploying the report (report details).
5. If a connection is not selected as report details, use the connection selected while designing the report (irl file).
6. If a connection is not selected in the irl file, use the default connection set in Intellicus on **Connection Configuration** page.

Can I change this order?

Order is controlled by values specified in `<CONNECTIONPRIORITY>` tag in `ProviderInfo.xml` located at path:

`<installation path>\Intellicus\ReportEngine\Config .`

Values (and the default sequence) are:

- CALLBACK: Connection set on Report Delivery Options page.
- SESSION: Connection set from the home page of Intellicus.
- USERPREFERENCE: Connection set on user preference page.
- REPORTDEPLOYMENT: Connection set at the time of report deployment.
- NAMEDCONNECTION: Connection set during report design.
- DEFAULT: Connection set as default on Database page of Intellicus.

To change the order, change the order of appearance of above values in `CONNECTIONPRIORITY` tag. This tag is the last tag in the file.

For example, default order:

```
<CONNECTIONPRIORITY>CALLBACK,          SESSION,          USERPREFERENCE,  
REPORTDEPLOYMENT, NAMEDCONNECTION, DEFAULT</CONNECTIONPRIORITY>
```

Modified order:

```
<CONNECTIONPRIORITY>          SESSION,          CALLBACK,          USERPREFERENCE,  
REPORTDEPLOYMENT, NAMEDCONNECTION, DEFAULT</CONNECTIONPRIORITY>
```

Downloading database configuration file

Database configuration file contains information related to database connections set in Intellicus. It is always a good idea to keep a copy of database configuration file at a safe place. Database configuration file can be downloaded in encrypted form as well as in un-encrypted form. Database configuration detail remains secure when the file is encrypted.

To download database configuration file,

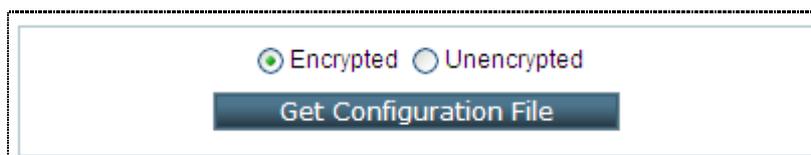


Figure 7: Downloading Database Configuration File

1. Select the type of file Encrypted or Unencrypted.
2. Click **Get Database Configuration File**.
3. Specify location for download.

File in selected format will be downloaded at the location specified.

Appendix

Getting and using third party components

Intellicus supports a set of third-party libraries to extend support to the functionalities that they provide.

These functions are:

- To connect with MSSQL Database
- To connect with MSSQL 2005 database
- To connect with MYSQL database
- To use Intellicus functionalities from Yahoo! Messenger

MSSQL 2000 database connection

You may need to create this type of database connection in Intellicus if choose to use MSSQL 2000 database server as your Intellicus repository database or report database. To be able to create this type of connection, you will need three jars made available by Microsoft.

Files you will need

You need to have following files to create MSSQL 2000 database connection:

- msbase.jar
- mssqlserver.jar
- msutil.jar

Download location

You may download these files from following location:

<http://www.microsoft.com/downloads/details.aspx?familyid=07287B11-0502-461A-B138-2AA54BFDC03A&displaylang=en>

Windows

Download file: setup.exe.

Steps:

Run setup.exe file. It will create "lib" folder having following files:

- msbase.jar
- mssqlserver.jar
- msutil.jar

Appendix

Copy these files to folder:

```
<Intellicus install path>\ReportEngine\lib  
<Intellicus install path>\ReportEngine\MSSQL\2000
```

Linux

Download file: mssqlserver.tar.

Steps: Untar this file and copy the files in folder:

```
<Intellicus install path>\ReportEngine\lib  
<Intellicus install path>\ReportEngine\MSSQL\2000
```

MYSQL database connection

You may need to create this type of database connection in Intellicus if choose to use MYSQL database server as your Intellicus repository database or report database. To be able to create this type of connection, you will need a jar made available by Sun Microsystems.

File you will need

- For MYSQL 3.1: mysql-connector-java-3.1.14-bin.jar or latest.
- For MYSQL 5: mysql-connector-java-5.0.7-bin.jar or latest.

Download Location

For MYSQL 3.1:

You may download the file from the following link if you are using MYSQL 3.1:

<http://dev.mysql.com/downloads/connector/j/3.1.html>

Download file: mysql-connector-java-3.1.14-bin.jar or latest jar (as zip or tar, depending on the OS on which it will be deployed).

Steps: Extract the above file and place the above file in folder:

```
<Intellicus install path>\ReportEngine\lib  
<Intellicus install path>\ReportEngine\MYSQL\3.1
```

For MYSQL 5.0:

You may download the file from the following link if you are using MYSQL 5.0:

<http://dev.mysql.com/downloads/connector/j/5.0.html>

Download file: mysql-connector-java-5.0.7-bin.jar or latest jar (as zip or tar, depending on the OS on which it will be deployed).

Steps: Extract the above file and place the above file in folder:

```
<Intellicus install path>\ReportEngine\MYSQL\5.0
```

Driver for MSSQL (Windows Authentication)

If you choose to use *Windows Authentication* and *Microsoft* driver while configuring the connection to use MSSQL provider, you will need **sqljdbc_auth.dll** file.

Provider	MSSQL	com.microsoft.jdbc.sqlserver.SQLServerDriver			
Driver Version	2000	Authentication Mode	SQL Server	Driver Type	Microsoft

This file is a part of MSSQL jdbc driver installation available at the following location:

<http://msdn.microsoft.com/en-us/data/aa937724.aspx> .

Place this file at path:

```
<install path>\Intellicus\ReportEngine\bin .
```



Note: This will come into effect after report server re-start.

Creating an ODBC type database connection in Intellicus

To create an ODBC type database connection in Intellicus:

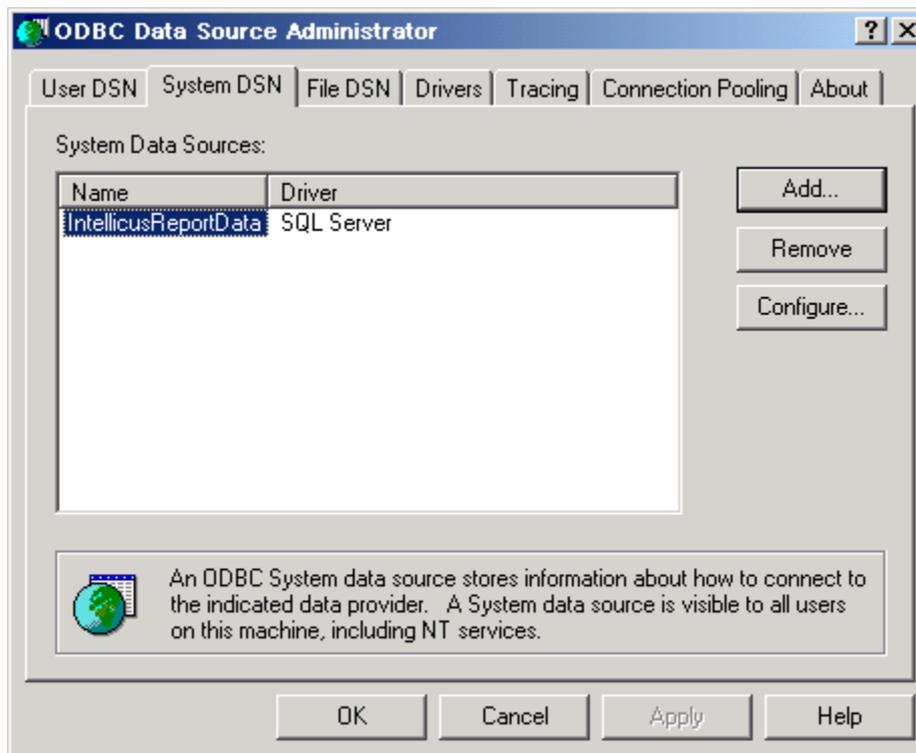
1. Using ODBC Data Source Administrator, create a system data source that points the database you want to connect using Intellicus.
2. Creating a connection in Intellicus using this database.

Creating a system DNS

System DNS is created on ODBC Data Source Administrator dialog.

To open this dialog,

1. Click Start > Settings > Control Panel > Administrative Tools.
2. Double-click ODBC Sources (ODBC).



After you click **Add** and select the right driver, driver-specific dialogs will appear where you will need to provide driver-specific details.

After successful creation, driver's name will appear in list of **System Data Sources**. That name needs to be used at the time of setting up database connection in Intellicus.

Creating a connection in Intellicus

A database connection in Intellicus is created on Databases page. To open database page, click: Administration > Configure > Databases.

The screenshot displays the 'Administration > Configure > Databases' interface. At the top, there are navigation tabs: 'Databases', 'Server', 'Client', 'Viewer', 'Adhoc Wizard', 'Portal Menu', 'Print Settings', 'License', and 'Config Files'. Below these are action buttons: 'Add', 'Modify', 'Delete', 'Refresh Schema', and 'Import OLAP Cubes'. A red status message indicates '* Maximum Connections Allowed: 99'. On the right, there is an 'Add Driver' button.

The main configuration area is titled 'Connections' and includes a search bar '(Starts With) >>'. A tree view on the left shows two connections: 'DemoReportDB' (selected) and 'DemoRepository,DB'. The configuration fields for 'DemoReportDB' are as follows:

- Connection Name: DemoReportDB
- Provider: H2 (org.h2.Driver)
- Path: ./data/DemoReportDB
- Username: [Empty] Password: [Empty] Blank Runtime
- URL: [Masked] Mask URL
- Charset Encoding: [Empty]

Additional settings include:

- Is Default:
- Is Repository:
- Read Only: (Allow Select clause and Procedure only)
- Database Time Zone: [Empty]
- Pool Settings:
 - Initial Connection(s): 5
 - Resubmit Time: 30 (Sec(s))
 - Incremental Size: 5
 - Max. Connections: 30
- Encryption: Encrypted Unencrypted
- Cache: Metadata Cache Purge Frequency: [Boot Up]
- Get Configuration File button

Detailed steps to create a database connection in Intellicus are provided in Creating Database connections topic in this document.

Refreshing of database schema

Database schema is required during:

- Report design
- Report Execution
- Masking configuration

Database schema information of all the database connection configured in Intellicus is cached at:

- Report server
- Portal
- Desktop Studio

It is automatically refreshed as per following:

Report Server: Refreshed at the time of connection creation, modification and server bootup. Information is received from respective database server.

Note: If a database connection is deleted, its schema is also deleted.

Portal / web server: At the time of server bootup. Schema is received from Report Server.

Desktop studio: When desktop studio is launched. Information is received from Report Server.

(Auto) refreshing of database schema

For the database that needs user credentials at run time, database schema is refreshed every time user credentials are passed to the database, for example while selecting such a database connection during report design, masking, running report, etc. For such connections, report server will maintain separate schema for each user credential passed.

When user opens SQL Editor from portal or Desktop Studio, portal (or Studio what ever is the case) compares timestamp of database schema refresh with that on the report server. If both matches, it means database schema cached on portal is updated. If both doesn't match, schema is refreshed from report server.

On demand refreshing of database Schema

On Portal, Administration > Configure > Databases page has **Refresh Schema** button. Select a connection and click **Refresh Schema** button to update schema of the selected connection.

On Desktop Studio, Connections dialog box has Refresh Schema button. Select a connection and click Refresh Schema button to update schema of the selected connection.

When you choose to refresh schema, following happens:

Report server refreshes schema of the selected connection. After caching is complete, the same is sent to portal / Studio.

How it happens:

1. Caching of metadata (at report server) starts. Meanwhile, user continues to use existing metadata.
2. After caching is complete, existing metadata is deleted and newly refreshed data is made available to users.

