

# Working with Database Connections

Intellicus Enterprise Reporting and BI Platform



©Intellicus Technologies  
info@intellicus.com  
www.intellicus.com

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## **Acknowledgements**

Intellicus acknowledges using of third-party libraries to extend support to the functionalities that they provide.

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.

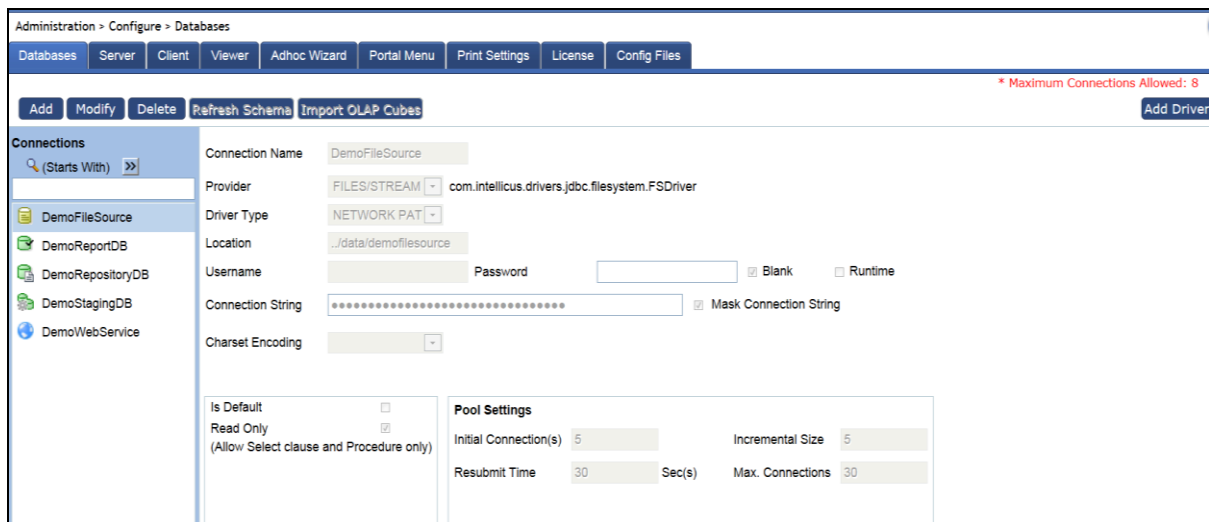


Figure 1: Connection Configuration page



**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.

| <b>Property</b>        |                       | <b>Values</b>    | <b>Comments</b>   |
|------------------------|-----------------------|------------------|---|
| Connection Name        |                       | Type Yourself    | Name of the database connection   |
| Provider               |                       | Select from list | Data provider used for the connection   |
| Username               |                       | Type Yourself    | Username used to open the connection  |
| Password               |                       | Type Yourself    | <p>Password for the connection</p> <p>Blank= If user name and password is not required to connect to the database.</p> <p>Runtime= To provide username and password when he/she tries to access database (for example, to generate a report or to open SQL Editor, etc.).</p> |
| Connection String      |                       | Auto generated   | Connection String to connect to database  |
| Mask Connection String |                       | Check/Uncheck    | If checked connection string is masked  |
| Charset Encoding       |                       | Select from list | Select UTF-8 if the database is created or started with UTF-8 encoding. Otherwise, it is blank  |
| Is Default             |                       | Check/Uncheck    | Check this checkbox to use this connection as the application default data connection to fetch report data  |
| Read Only              |                       | Check/Uncheck    | Check this checkbox to make sure only SQLs having read operations are executed on this connection   |
| Pool Settings          | Initial Connection(s) | Type Yourself    | Specify the number of connections that should be opened initially. Default: 5   |
|                        | Incremental Size      | Type Yourself    | Specify the number of connections to open when the all open connections are consumed. Default: 5  |
|                        | Resubmit Time         | Type Yourself    | Specify the waiting-time in seconds before generating re-submitting request.  |

|                        |                                |                  |   |
|------------------------|--------------------------------|------------------|---|
|                        |                                |                  | Default: 30 seconds   |
|                        | Max. Connections               | Type Yourself    | Specify the maximum number of connections that can be opened to the selected database at a time. Default: 30  |
| Database Time Zone     |                                | Select from list | Select time zone to receive output of date / time fields as per time zone in which the data was entered in database   |
| Get Configuration File |                                | Click the button | You can get the configuration file of Report Server in either Encrypted or Unencrypted format.  |
| Cache                  | Enable Metadata Caching        | Check/Uncheck    | Check = The list of table names with column names (or other data source objects) from this connection will be pulled and stored locally for populating in SQL Editor or respective Query designer screens.  |
|                        | MetaData Cache Purge Frequency | Select from list | <p>MetaData Cache Purge Frequency defines the time when metadata (table names, field names, etc.) cached for the selected connection should be deleted and refreshed:</p> <p><i>NEVER</i> = application will never delete and refresh the metadata.</p> <p><i>BOOTUP</i>= If this is set to <i>Boot Up</i>, every time server is booted, metadata for this data connection will be deleted and refreshed.</p> |

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

## Action Buttons

- **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.



## Finding a Connection

List of connections can be filtered by:

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

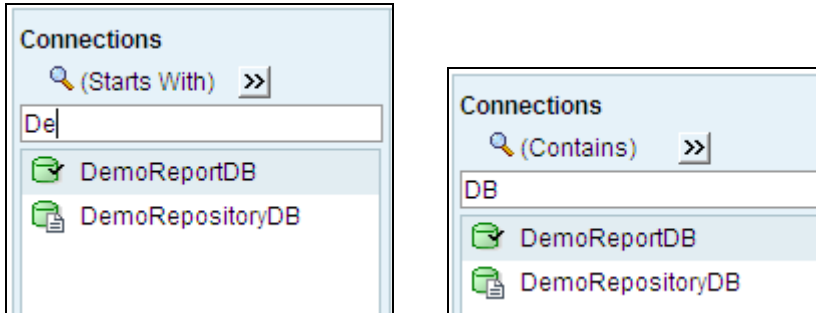


Figure 2: Filtering list of connections

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.

## Adding Database Connections

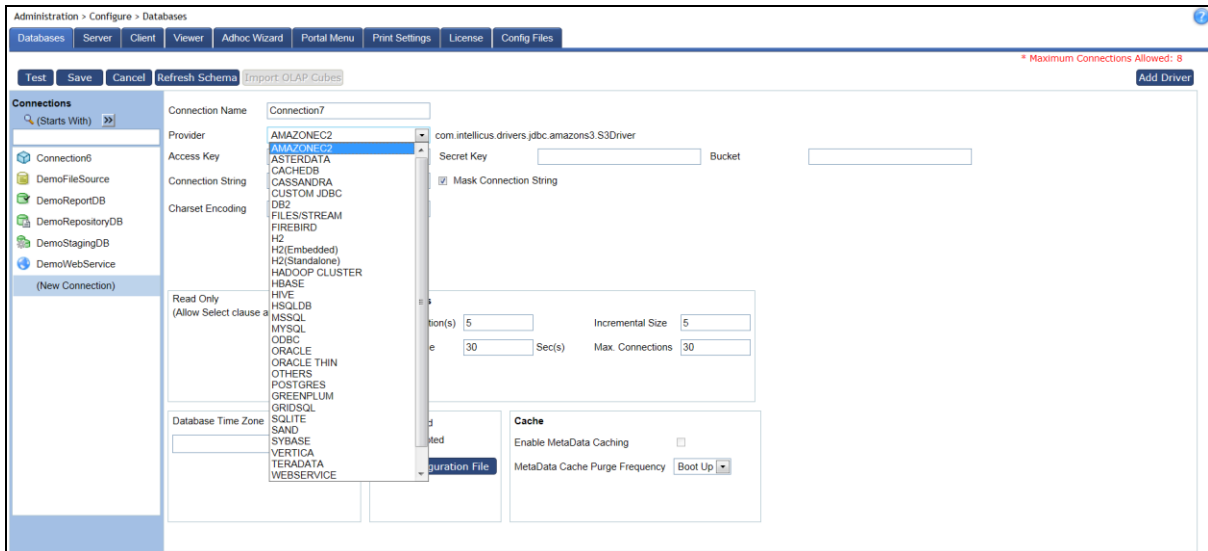


Figure 3: Adding a data connection

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

The new connection is set.

## Provider specific details for database connections

When you select a provider from the list, text boxes specific to the selection are made available on screen.

### BIG DATA

#### ASTERDATA

| Property | Values        | Comments  |
|----------|---------------|---|
| Host     | Type Yourself | The IP or name of the machine where database is installed |
| Port     | Type Yourself | The port at which database server listens                 |
| Database | Type Yourself | Specify name of the database to connect to                |

#### CASSANDRA

| Property | Values        | Comments   |
|----------|---------------|--|
| Server   | Type Yourself | The IP or name of the machine where database server is running |
| Port     | Type Yourself | The port at which database server is listening                 |
| Keyspace | Type Yourself | The keyspace is a container for your application data          |

#### GREENPLUM

| Property | Values        | Comments   |
|----------|---------------|--|
| Server   | Type Yourself | The IP or name of the machine where database server is running                                 |
| Port     | Type Yourself | The port at which database server is listening   |
| SID      | Type Yourself | This is a unique name that identifies a specific database from number of databases on a server |

## GRIDSQL

| Property | Values        | Comments   |
|----------|---------------|--|
| Server   | Type Yourself | The IP or name of the machine where database server is running                                 |
| Port     | Type Yourself | The port at which database server is listening   |
| SID      | Type Yourself | This is a unique name that identifies a specific database from number of databases on a server |

## HADOOP CLUSTER

Copy all libraries from Hadoop and Hadoop\lib folders and place them at <Intellicus\_Install>\ReportEngine\lib\HADOOP\_COMMON\version-specific folder. You should modify run.sh file to point to your Hadoop version. Restart the Intellicus Report Server before creating the connection.

| Property                   | Values               | Comments   |
|----------------------------|----------------------|--|
| Driver Version             | Select from the list | Version of Hadoop Cluster  |
| Job Tracker Server         | Type Yourself        | IP address of Job Tracker Server   |
| Job Tracker Port           | Type Yourself        | Port of Job Tracker Server   |
| HDFS Server                | Type Yourself        | IP address of HDFS named node  |
| HDFS Port                  | Type Yourself        | Named node Port  |
| Location                   | Type Yourself        | Default path for the connection on this HDFS   |
| Group                      | Type Yourself        | User group on HDFS   |
| Temp Path (Optional)       | Type Yourself        | Path to keep the temporary files on HDFS   |
| Extra Arguments (Optional) | Type Yourself        | Any extra set of arguments that are required while executing map reduce job on this connection |

## HBASE

Copy all libraries from HBase and HBase\lib folders and place them at <Intellicus\_Install>\ReportEngine\lib\HBase\version-specific folder. Modify run.sh file to point to your HBase version and restart the Intellicus Report Server before creating the connection.

| Property         | Values        | Comments                       |
|------------------|---------------|--------------------------------|
| Zookeeper Server | Type Yourself | IP address of Zookeeper Server |
| Zookeeper Port   | Type Yourself | Port of Zookeeper Server       |

## HIVE

You need to download the driver and place it in <Intellicus\_Install>\ReportEngine\lib\HIVE folder.

Select Hive if your data is stored on hadoop.

| Property       | Values               | Comments  |
|----------------|----------------------|---|
| Driver Version | Select from the list | Version of HIVE   |
| Host           | Type Yourself        | The IP or name of the machine where database is installed |
| Port           | Type Yourself        | The port at which database server listens                 |
| Database       | Type Yourself        | Specify name of the database to connect to                |

## 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.

| Property          | Values        | Comments  |
|-------------------|---------------|---|
| Host              | Type Yourself | The IP or name of the machine where database is installed                         |
| Port              | Type Yourself | The port at which database server is listening                                    |
| Database          | Type Yourself | Specify name of the database to connect to using this connection                  |
| Schema (optional) | Type Yourself | Specify the schema to be used for the specified user for this database connection |

## TERADATA

You need to download driver and place it at \ReportEngine\lib\TERADATA.

| Property       | Values               | Comments  |
|----------------|----------------------|---|
| Driver Version | Select from the list | From options, select the driver version                   |
| Host           | Type Yourself        | The IP or name of the machine where database is installed |
| Database       | Type Yourself        | Specify name of the database to connect to                |

## VERTICA

You need to download driver and place it in \ReportEngine\lib\VERTICA folder.

| Property          | Values        | Comments  |
|-------------------|---------------|---|
| Host              | Type Yourself | The IP or name of the machine where database is installed                         |
| Port              | Type Yourself | The port at which database server is listening                                    |
| Database          | Type Yourself | Specify name of the database to connect to using this connection                  |
| Schema (optional) | Type Yourself | Specify the schema to be used for the specified user for this database connection |

## CLOUD

### AMAZONEC2

| Property   | Values        | Comments  |
|------------|---------------|---|
| Access Key | Type Yourself | Access Key ID identifies you as the party responsible for service requests. You include it in each request  |
| Secret Key | Type Yourself | Each Access Key ID has a Secret Access Key associated with it. This key is just a long string of characters that you use to calculate the digital signature that you include in the request |
| Bucket     | Type Yourself | Any object that needs to be stored in amazon s3 is organized into buckets   |

## FILES/STREAM

### File Location

You can configure a file location such as FTP, Shared Network Folder, Local Folder, HTTP location, HDFS or Amazon S3 as a connection in report server.

Then Data Administrators can use this connection to pull data files from these locations, as if, they are pulling tables' data from an RDBMS connection.

This model enables access control security and enables abstraction of the file source to the other users beyond System Administrator.

### Common Properties

|                 |  |   |
|-----------------|--|---|
| Connection Name | Type Yourself                                | You and end users will identify this connection by this name. |
| Provider        | FILES  | Fixed value for connecting to File systems                    |
| Driver Type     | NETWORKPATH,<br>FTP,<br>HTTP,<br>HDFS,<br>S3 | Details are given below                                       |

### NETWORK PATH

| Property | Values                                     | Comments   |
|----------|--|--|
| Location | Network path starting with \\, E:\, or ..\ | \\ = a network location address follows<br>E:\ = You are configuring a local drive (local to report server machine) absolute path as location<br>..\ = You are configuring a local drive path relative to \reportengine\bin as location. |
| Username | Type Yourself                              | OS Username  |
| Password | Type Yourself                              | OS password  |

### FTP

| Property | Values                        | Comments  |
|----------|-------------------------------|---|
| Server   | FTP server name or IP address | Internet address of FTP Server  |
| Port     | Port number                   | The port at which FTP server is listening   |
| Secure   | Yes/No                        | Yes=SFTP (Secured FTP)<br>No = Normal FTP   |
| Passive  | Yes/No                        | Yes = PASV mode<br>Required when there is a firewall between report server and FTP server |

|          |               |   |
|----------|---------------|---|
| Location | Type Yourself | Folder path from home or root (whichever is applicable) under which required data files are available |
| Username | Type Yourself | FTP Username  |
| Password | Type Yourself | FTP password  |

## HTTP

| Property | Values        | Comments                                     |
|----------|---------------|--|
| URI      | Type Yourself | Website address                              |
| Location | Type Yourself | Application + path suffixing the web address |
| Secure   | Yes/No        | Yes = HTTPS                                  |

## HDFS

| Property  | Values                   | Comments   |
|-----------|--------------------------|--|
| Server    | Type Yourself            | IP address of HDFS named node  |
| Port      | Type Yourself            | Named node Port  |
| Location  | Type Yourself (Optional) | Default path for the connection on this HDFS<br>Blank = location is root |
| Group     | Type Yourself            | User group on HDFS   |
| User name | Type Yourself            | User name on HDFS  |

## S3

| Property   | Values        | Comments                                       |
|------------|---------------|--|
| Access Key | Type Yourself | Key Value obtained from Amazon                 |
| Secret Key | Type Yourself | Key Value obtained from Amazon                 |
| Bucket     | Type Yourself | Bucket Name where data files will be available |

## Web Service

|                   |  |
|-------------------|--|
| Connection Name   | <input type="text" value="ENTWS1"/>  |
| Provider          | <input type="text" value="WEBSERVICE"/> <input type="text" value="com.intellicus.drivers.jdbc.webservice.WSDriver"/> |
| WSDL URI          | <input type="text" value="myservice.com/wsdl/hr.wsdl"/>  |
| Connection String | <input type="text" value="jdbc:WS:www.myservice.com/wsdl/hr.wsdl"/>  |

Figure 4: Web Service



Provide the following properties to create a connection to a web service:

| Property        | Values        | Comments   |
|-----------------|---------------|--|
| Connection Name | Type Yourself | You and end users will identify this connection by this name |
| Provider        | WEBSERVICE    | Fixed value for connecting to SOAP enabled web services      |
| WSDL URI        | Type Yourself | The URI path of your web service's WSDL file                 |

## OBJECT DB

### CACHEDB

| Property  | Values        | Comments   |
|-----------|---------------|--|
| Server    | Type Yourself | The IP or name of the machine where database server is running               |
| Port      | Type Yourself | The port at which database server is listening                               |
| Namespace | Type Yourself | This is a unique name that identifies a specific namespace on CACHE database |

## OLAP

### MONDRIAN / MSAS

Presently Intellicus supports Mondrian and MSAS as OLAP data providers.

| Property | Values        | Comments  |
|----------|---------------|---|
| Server   | Type Yourself | IP of the machine where OLAP server is available  |
| Port     | Type Yourself | The port at which OLAP server is listening  |
| Path     | Type Yourself | <p>This is path to the XMLA service.</p> <p>For Mondrian data provider, specify mondrian/xmla (where mondrian is name of the web application).</p> <p>For MSAS 2000, specify xmla/msxisapi.dll (xmla is a virtual directory name)</p> <p>For MSAS 2005, specify xmls/msmdpump.dll</p> |

|                       |               |  |
|-----------------------|---------------|--|
|                       |               | (xmla is a virtual directory name)   |
| Catalog               | Type Yourself | A catalog is a collection of cubes. An OLAP Catalog can contain multiple number of cubes. This is an optional field. If kept blank, first catalog present in the OLAP Schema will be taken |
| OLAP Default Checkbox | Check/Uncheck | Select this checkbox to use this connection as OLAP Default connection. Data will be fetched from this connection if user selects (Default) option on OLAP Layouts dialog                  |

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

## RDBMS

### CUSTOM JDBC

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

| Property          | Values        | Comments                                     |
|-------------------|---------------|--|
| Driver Class Name | Type Yourself | Specify the driver class name for the driver |

### DB2

| Property          | Values        | Comments  |
|-------------------|---------------|---|
| System            | Type Yourself | The IP or name of the machine where database server is running                    |
| Port              | Type Yourself | The port at which database server is listening                                    |
| Database          | Type Yourself | Specify name of the database to connect to using this connection                  |
| Schema (optional) | Type Yourself | Specify the schema to be used for the specified user for this database connection |

**FIREBIRD**

| Property | Values        | Comments  |
|----------|---------------|---|
| Host     | Type Yourself | The IP or name of the machine where database is installed |
| Port     | Type Yourself | The port at which database server is listening            |
| Path     | Type Yourself | Path of the database files                                |

**H2**

| Property | Values        | Comments  |
|----------|---------------|---|
| Path     | Type Yourself | The path (including the file name) to the location where database file is available |

**H2 (Embedded)**

| Property | Values        | Comments  |
|----------|---------------|---|
| Path     | Type Yourself | The path (including the file name) to the location where database file is available |

**H2 (Standalone)**

| Property | Values        | Comments   |
|----------|---------------|--|
| Server   | Type Yourself | The IP or name of the machine where database server is running |
| Port     | Type Yourself | The port at which database server is listening                 |
| Path     | Type Yourself | The path to the folder where database files are residing       |

**HSQLDB**

| Property | Values        | Comments  |
|----------|---------------|---|
| Server   | Type Yourself | The IP or name of the machine where database is installed |
| Database | Type Yourself | Specify name of the database to connect to                |

## MSSQL

| Property            | Values               | Comments   |
|---------------------|----------------------|--|
| Driver Version      | Select from the list | Select the driver version of MSSQL Database to connect to using this connection  |
| Authentication Mode | Select from the list | Select <i>Server Authentication</i> if you want the Database server should authenticate. You need to provide user name and password for the database. Select <i>Windows Authentication</i> 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 from the list | Select <i>Microsoft</i> or <i>JTDS</i> based on the driver you want system to use  |
| Server              | Type Yourself        | The IP or name of the machine where database server is running   |
| Port                | Type Yourself        | The port at which database server is listening   |
| Database            | Type Yourself        | Specify name of the database to connect to using this connection   |
| Domain              | Type Yourself        | Specify the name of the network domain .(Domain is asked when you select Authentication Mode as Windows and Driver Type as JTDS)   |
| Instance            | Type Yourself        | Specify the name of the instance with which you want to connect  |

## MYSQL

You need to download the driver and place it in <Intellicus\_Install>\ReportEngine\lib\MYSQL folder.

| Property       | Values               | Comments   |
|----------------|----------------------|--|
| Driver Version | Select from the list | Select the desired driver version for MYSQL                    |
| Server         | Type Yourself        | The IP or name of the machine where database server is running |

|            |               |  |
|------------|---------------|--|
| Port       | Type Yourself | The port at which database server is listening   |
| Fetch size | Type Yourself | 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 |
| SID        | Type Yourself | This is a unique name that identifies a specific database from number of databases on a server   |

## ODBC

| Property | Values        | Comments   |
|----------|---------------|--|
| DSN      | Type Yourself | Specify the System DSN created for the ODBC connection |

## ORACLE

| Property       | Values               | Comments   |
|----------------|----------------------|--|
| Driver Type    | Select from the list | Select one of the driver you are using to connect to the database                              |
| Driver Version | Select from the list | From options, select the driver version  |
| Server         | Type Yourself        | The IP or name of the machine where database server is running                                 |
| Port           | Type Yourself        | The port at which database server is listening   |
| SID            | Type Yourself        | This is a unique name that identifies a specific database from number of databases on a server |

## ORACLE\_THIN

| Property | Values        | Comments   |
|----------|---------------|--|
| Server   | Type Yourself | The IP or name of the machine where database server is running |
| Port     | Type Yourself | The port at which database server is listening                 |

|     |               |  |
|-----|---------------|--|
| SID | Type Yourself | This is a unique name that identifies a specific database from number of databases on a server |
|-----|---------------|--|

## OTHERS



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

| Property          | Values        | Comments                                     |
|-------------------|---------------|--|
| Driver Class Name | Type Yourself | Specify the driver class name for the driver |

## POSTGRES

| Property | Values        | Comments   |
|----------|---------------|--|
| Server   | Type Yourself | The IP or name of the machine where database server is running                                 |
| Port     | Type Yourself | The port at which database server is listening   |
| SID      | Type Yourself | 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.

## SQLITE

| Property | Values        | Comments                   |
|----------|---------------|----------------------------|
| Path     | Type Yourself | Path of the database files |

## SYBASE

| Property    | Values               | Comments  |
|-------------|----------------------|---|
| Driver Type | Select from the list | Select the driver type to be used to connect with this database |
| Server      | Type Yourself        | The IP or name of the machine where database server is running  |

---

|          |               |  |
|----------|---------------|--|
| Port     | Type Yourself | The port at which database server is listening                   |
| Database | Type Yourself | Specify name of the database to connect to using this connection |

## Miscellaneous Actions

### Upload a new 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.

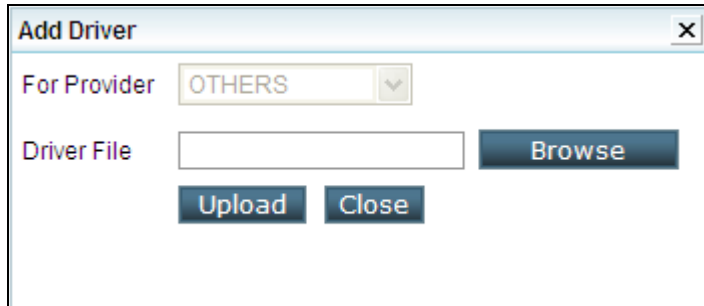


Figure 5: Add Driver dialog box

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 or simply browse the driver file.
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.

### Connect to a named Instance 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

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.

## Connect using Oracle client installed on Windows

Intellicus recommends Oracle JDBC THIN connections for smooth and compatible access to Oracle Databases of various versions – 8, 9, 10 or 11g.

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 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:

```
@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.

---

## Test 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.

## Update connection details

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.

## Remove a connection

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.

## Refresh metadata cache

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.

## Deciding the preference of connections for a report run

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.

### Changing the order of preference

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>
```

## 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 2000 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

Copy these files to folder:

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

## Linux

**Download file:** mssqlserver.tar.

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

```
<Intellicus install path>\ReportEngine\lib\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\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\lib\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 |

Figure 6: Driver for MSSQL

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).

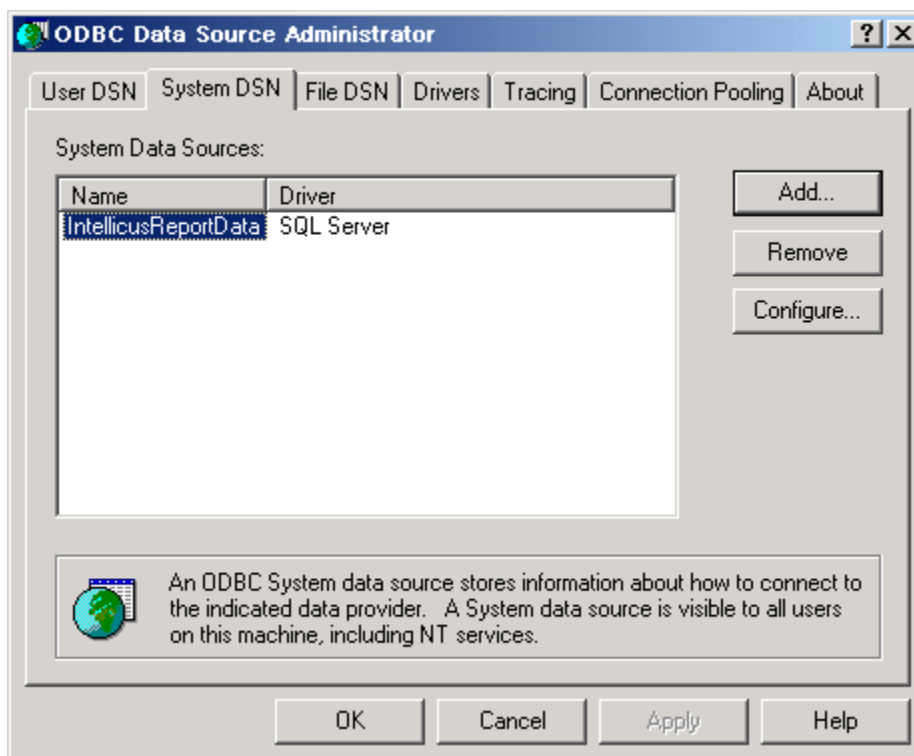


Figure 7: Creating ODBC type Connection

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 shows the 'Administration > Configure > Databases' interface. The top navigation bar includes 'Databases', 'Server', 'Client', 'Viewer', 'Adhoc Wizard', 'Portal Menu', 'Print Settings', 'License', and 'Config Files'. Below this, there are buttons for 'Add', 'Modify', 'Delete', 'Refresh Schema', and 'Import OLAP Cubes'. A red notification at the top right states '\* Maximum Connections Allowed: 8'. The main area is titled 'Connections' and features a search bar '(Starts With) >>'. A list of connections is shown on the left, including 'DemoFileSource', 'DemoReportDB', 'DemoRepositoryDB', 'DemoStagingDB', and 'DemoWebService'. The 'DemoFileSource' connection is selected, and its configuration is displayed in the main area:

- Connection Name:** DemoFileSource
- Provider:** FILES/STREAM (dropdown) com.Intellicus.drivers.jdbc.filesystem.FSDriver
- Driver Type:** NETWORK PAT (dropdown)
- Location:** ../data/demofilesource
- Username:** [text input] **Password:** [password input]  Blank  Runtime
- Connection String:** [masked text input]  Mask Connection String
- Charset Encoding:** [dropdown]
- Is Default:**
- Read Only:**  (Allow Select clause and Procedure only)
- Pool Settings:**
  - Initial Connection(s): 5
  - Incremental Size: 5
  - Resubmit Time: 30 Sec(s)
  - Max. Connections: 30

Figure 8: Creating a connection

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 Run
- 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 boot up. 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 boot up. 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 don'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.