

# Accessing MySQL from Intalio BPMS

---

## 1 Contents

1	Introduction .....	2
2	Prerequisites .....	2
3	Setup .....	2
3.1	Populate MySQL Database.....	2
3.2	Set up ODBC Access .....	3
4	Discovery.....	4
4.1	Web Service Creation using SOA Gateway .....	4
4.2	Accessing the WSDL .....	6
5	Creating BPMS Process .....	8
5.1	Process Walkthrough .....	8
5.2	Process Execution .....	9
6	Troubleshooting.....	9
6.1	Troubleshooting Process Execution .....	9
7	Conclusion.....	10
8	Appendix .....	10

## 1 Introduction

In this tutorial we will show you how to use an Intalio BPMS process to access MySQL via the SOA Gateway.

## 2 Prerequisites

It is assumed that you are running the 4 components, MySQL, Intalio|BPMS Designer, Intalio|BPMS server, and the SOA Gateway on Windows.

Intalio|BPMS 5.2 is the minimum version required. Some basic knowledge of Intalio|BPMS is also required.

It is assumed you already have a SOA Gateway server and Control Centre installed. See [here](#) for more info about installing the SOA Gateway.

## 3 Setup

If you have not already done so, install the Intalio|BPMS Designer and Server.

You will also need a MySQL database. The Open Source version (known as the *MySQL Community Server*) can be freely downloaded from the MySQL website. See [this link](#) for download, and [here](#) to step you through the installation and configuration.

### 3.1 Populate MySQL Database

Now that you've got MySQL installed and configured, you will need to populate it with some demo data. For this we use the RisarisBank sample. This is available [here](#).

Save this file to "C:\Temp\RisarisBank.sql"

- Connect to the MySQL Server using the **mysql** command.

```
E.g shell> mysql -u root -p
```

This command connects to the server using the MySQL `root` account to make sure that you'll have permission to create the `RisarisBank` database. The `-p` option tells **mysql** to prompt you for the `root` password. Enter the password when prompted. (Remember that the MySQL `root` account is not the same as the operating system `root` account and probably will have a different password.)

- Create the `RisarisBank` database.

```
mysql> CREATE DATABASE RisarisBank;
```

```
mysql> use RisarisBank;
```

- Load the contents of `RisarisBank.sql` into the `RisarisBank` database. E.g.

```
mysql> SOURCE c:\Temp\RisarisBank.sql
```

- After the SOURCE command finishes, you can view your new tables.

```
mysql> SHOW TABLES;
```

```
mysql> DESCRIBE CustomerInformation;
```

```
mysql> DESCRIBE Branch;
```

*etc ...*

- Optionally, you can disable the requirement for a userid and password. Enter the following statements to do this:

```
mysql> grant all on RisarisBank.* to root@localhost;
```

```
mysql> flush privileges;
```

#### Note

If you wish to revoke this later enter the following statements:

```
mysql>revoke all privileges, grant option from root@localhost;
```

```
mysql>flush privileges;
```

## 3.2 Set up ODBC Access

The final thing to do with your MySQL Database is to set up an ODBC DSN which will be used by the SOA Gateway to access this database.

Click Start, Control Panel, Administrative Tools, Data Sources (ODBC)

From the resulting screen, choose the "System DSN" Tab.

Click Add

From the list of data source drivers, select "MySQL ODBC 3.51 Driver".

*If you do not see this driver in the list, you need to install the MySQL Connector. See [here](#) for more information. We recommend installing v3.51.*

Click Finish, and a window will appear allowing you to enter the DSN information. Add the following:

Data Source Name: RisarisBank

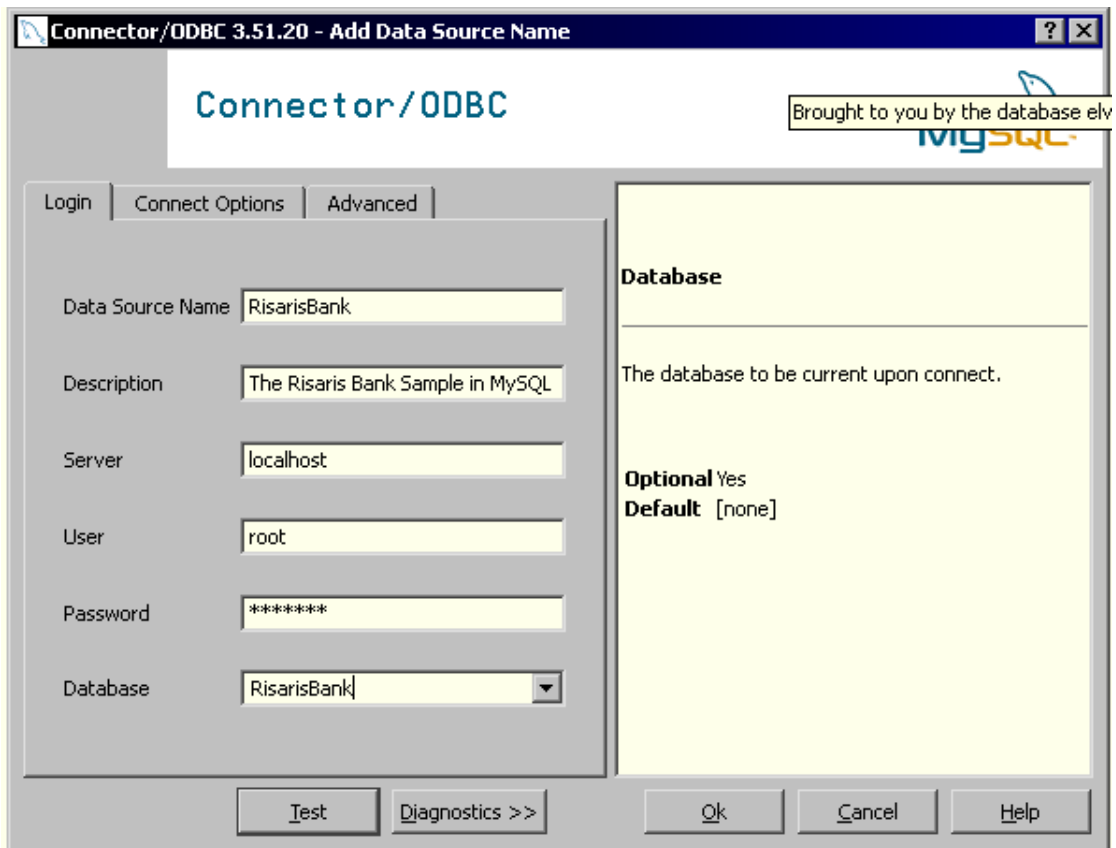
Description: The Risaris Bank Sample in MySQL

Server: localhost

User: root

Password: *\*\*\* your MySQL root password \*\*\**

Database: RisarisBank (*select from the drop down list*)



All other options can be left as-is. Click OK.

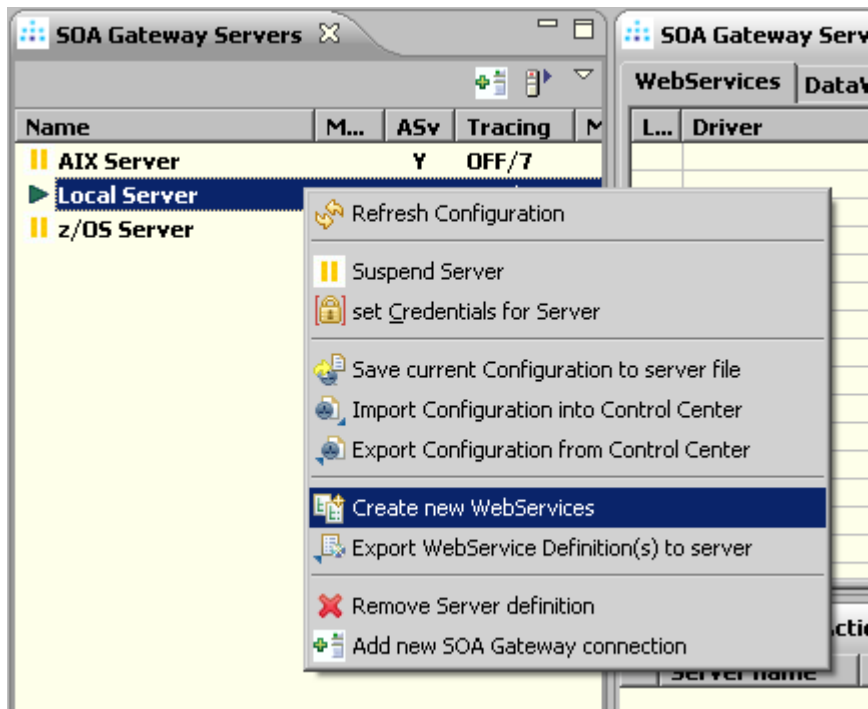
## 4 Discovery

At this stage you've got a MySQL database with some sample data in it. In this section we'll show you how to create web services from each of the MySQL tables. These web services can be used in Intalio BPMS Web Service queries to give you direct real-time access to your MySQL Data.

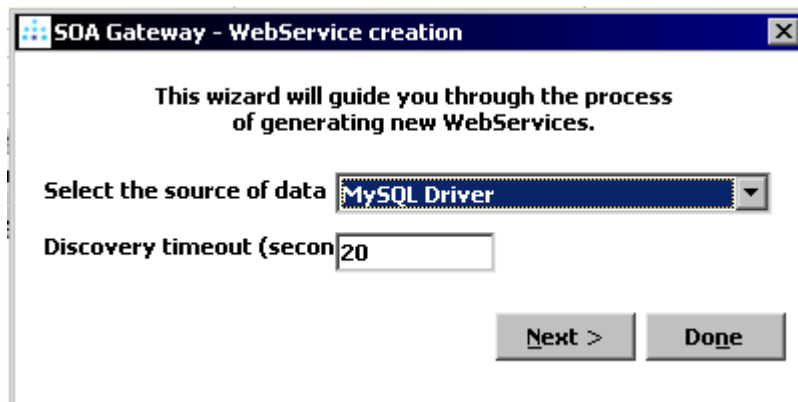
### 4.1 Web Service Creation using SOA Gateway

Start your SOA Gateway Control Centre. See [here](#) for an introduction to the Control Centre.

In your servers view, right click the entry which represents your local SOA Gateway Server. Select "Create New Web Services".

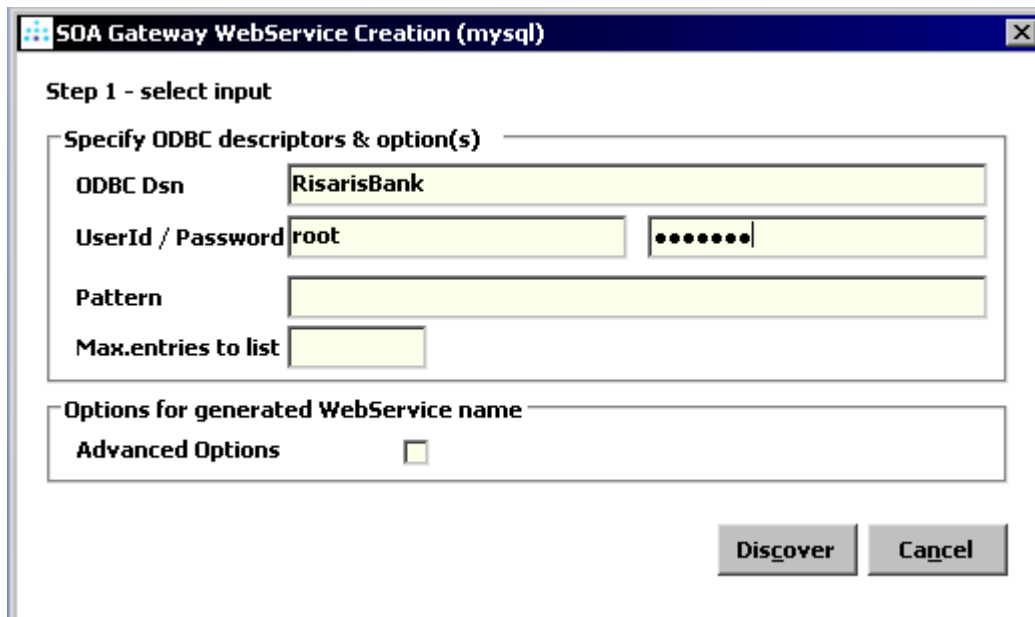


From the next dialog, choose “MySQL Driver”. If you do not see have a MySQL Driver in the list, see how to create one [here](#).



Click Next.

The next screen gives you the ability to add information about your DSN



Enter the above information and click Discover.

The wizard will display all the tables it finds at this (RisarisBank) DSN.

Click "Select All", and click "Import".

The wizard will create web services from each one of these tables.

SOA Gateway Servers		SOA Gateway Server Configuration - Local Server				
		WebServices   DataViews / XSDs / XSLs				
Name	M... ASv	Mod	Driver	WebService	DataSource Id	DataView
AIX Server	Y		MySQL Driver	accountsmovements	odbcDsn=RisarisBank, tableName=accountsmovements	accountsmovements
DMZ	Y		MySQL Driver	audit	odbcDsn=RisarisBank, tableName=audit	audit
dublin dev	Y		MySQL Driver	branch	odbcDsn=RisarisBank, tableName=branch	branch
jk server	Y		MySQL Driver	currentaccount	odbcDsn=RisarisBank, tableName=currentaccount	currentaccount
jk server linux	Y		MySQL Driver	customeraccountxref	odbcDsn=RisarisBank, tableName=customeraccountxref	customeraccountxref
jom server	Y		MySQL Driver	customerinformation	odbcDsn=RisarisBank, tableName=customerinformation	customerinformation
Local Server	Y		MySQL Driver	depositaccount	odbcDsn=RisarisBank, tableName=depositaccount	depositaccount
lxbre server	Y		MySQL Driver	tellertable	odbcDsn=RisarisBank, tableName=tellertable	tellertable
risaris.com server	Y		MySQL Driver			
vse	Y					
z/OS Server	Y					
z/vse	Y					

You've just created 8 Web Services from your 8 MySQL Tables!

## 4.2 Accessing the WSDL

Web Service Description Language (WSDL) is a standard, XML-based language that is used to describe a Web Service.

For each of the 8 web services you've created in the previous section, the SOA Gateway provides you with a WSDL to describe the Web Service. The WSDL itself is usually interpreted by a web service client, but it is useful to know where to find the WSDL for each of your Web Services.

As WSDL is XML-based, it will open in your browser of choice. To see the WSDL for one of your Risarisk Bank web services, do the following in your SOA Gateway Control Centre:

- Click on the web service you are interested in, for example the branch service.
- The properties for this web service should appear in your [Properties View](#). If you do not see the Properties view, select Window -> Show View -> Other -> General -> Properties and click OK.
- In the properties view, there is a link to your WSDL. Click it to open the WSDL in a browser.

The screenshot shows the SOA Gateway Server Configuration interface. The top window, 'SOA Gateway Server Configuration - Local Server', displays a table of web services. Below it, the 'SOA Gateway Action Log' shows messages such as 'ODBC discovery completed, 8 WebService(s) generated'. The bottom window, 'Properties', shows the 'WebService properties' for the 'branch' service. A green arrow points to the 'WSDL URL is' field, which contains the URL <http://localhost:56000/branch?WSDL>.

Mod	Driver	WebService	DataSource Id
	MySQL Driver	accountsmovements	odbcDsn=RisariskBank, tableN
	MySQL Driver	audit	odbcDsn=RisariskBank, tableN
	MySQL Driver	branch	odbcDsn=RisariskBank, tableN
	MySQL Driver	currentaccount	odbcDsn=RisariskBank, tableN
	MySQL Driver	customeraccountxref	odbcDsn=RisariskBank, tableN
	MySQL Driver	customerinformation	odbcDsn=RisariskBank, tableN
	MySQL Driver	depositaccount	odbcDsn=RisariskBank, tableN
	MySQL Driver	tellertable	odbcDsn=RisariskBank, tableN

**SOA Gateway Action Log**

Server name	Message
Local Server	ODBC discovery completed, 8 WebService(s) generated
Local Server	Configuration autosaved due to published WebService modification(s)
Local Server	Configuration refreshed

**WebService properties**

Resource: **WebService properties**

Name:

DataView:

Driver:  SBCS-Codepage:

Read-only:  MBCS-Codepage:

WSDL URL is: <http://localhost:56000/branch?WSDL>

**WebService Identification and options**

odbcDsn:

schemaName:

tableName:

You can view the WSDL for the other web services by clicking the link from their properties view.

This WSDL is the starting point for using Web Services, and can be used time and again by different web service clients.

## 5 Creating BPMS Process

The BPMS process to use is available in the appendix. Download this file to your system.

Select File -> Import -> Existing Projects Into Workspace -> Select Archive File and select the ZIP file that you've downloaded.

The process will be imported into your workspace.

The Forms folder contains 2 forms for use with this process. The SelectNames.xform will allow the user to enter a Customer ID. This will call the SOA Gateway web service to return all the customers with that ID. The DisplayCustomers.xform will display the details for each customer found.

The WSDLs directory contains references to the WSDLs that you created earlier.

The SoaGatewayTutorial.bpm is the Business Process Diagram for this process.

The QueryResultstoFormList.xsl is an XSL stylesheet which transforms the results returned from the SOA Gateway web service into a structure that fits into the DisplayCustomers XForm.

### 5.1 Process Walkthrough

The following section outlines how the process works.

The process starts with the SelectNames.xform as a BPEL4People People Initiating Process Activity (PIPA) BPEL4People task. The process will continue to the "List Customers" task and then maps the output from the XForm to the input of the SOA Gateway CustomerInformation web service.

The "Display Customers" task will use the QueryResultstoFormList XSLT to transform the SOA Gateway response to the DisplayCustomers XForm input. To do this, a BPEL method called "doXsltTransform()" is used.

The DisplayCustomers XForm is a BPEL4People People Activity task.

All BPEL4People tasks are to be used with the "examples\employee" role.

The "Review List" task doesn't do anything in the process, but in the real world, it could be used for the processing the selected customer. For example, it could be used to call another web service which returns the account details for this person.

## 5.2 Process Execution

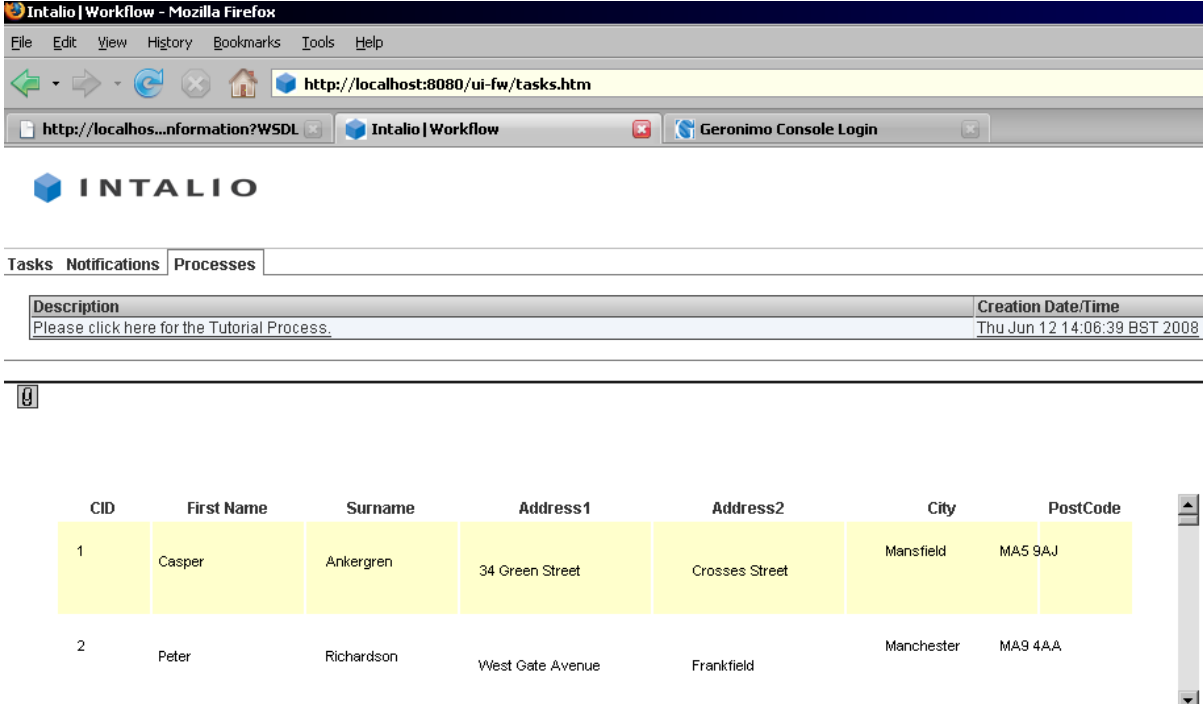
Verify that the Userid and password used in the “List Customers” task, matches the user and password required to access your MySQL Table.

Deploy your SoaGatewayBPMSTutorial to the BPMS Server.

Login to the UI-FW (<http://localhost:8080/ui-fw>) as the employee role, which is usually “examples\msmith”.

Under the Processes tab, you should see a process named “Please click here to run the Tutorial”. Click this, and enter the asterisk symbol (\*) as the Customer Number. Click “Start Process”. This will call the SOA Gateway web service and return all customers.

A list of customers is returned:



The screenshot shows a Mozilla Firefox browser window with the URL <http://localhost:8080/ui-fw/tasks.htm>. The page displays the Intalio logo and navigation tabs for Tasks, Notifications, and Processes. Under the Processes tab, a table lists a process with the description "Please click here for the Tutorial Process." and a creation date of "Thu Jun 12 14:06:39 BST 2008". Below this, a table displays a list of customers with the following data:

CID	First Name	Surname	Address1	Address2	City	PostCode
1	Casper	Ankergrén	34 Green Street	Crosses Street	Mansfield	MA5 9AJ
2	Peter	Richardson	West Gate Avenue	Frankfield	Manchester	MA9 4AA

Click “Complete” to finish the process.

## 6 Troubleshooting

### 6.1 Troubleshooting Process Execution

- Use the BPMS console to view the stage that your process is in, and any potential error messages.

- See the Geronimo window to view possible error messages.
- Verify that the user id and password provided in List Customers task matches the user and pass required to access your MySQL database.
- Verify that the end point in the WSDL is correct. You can do this by right-clicking the WSDLs/customerinfomation.wsdl file and selecting “Update Imported Resource”.

## 7 Conclusion

This tutorial shows how to access MySQL from Intalio BPMS using the SOA Gateway.

## 8 Appendix

[Click here for SoaGatewayBPMSTutorial.zip](#)