

# Using the SOA Gateway to access Microsoft SQL Server database

Using the SOA Gateway to access Microsoft SQL Server database

- Introduction
  - SQL Server ODBC Setup
  - SOA Gateway Configuration
  - Accessing SQL Server using the SOA Gateway
- 

## Introduction

Microsoft SQL Server is a relational database management system (RDBMS) produced by Microsoft. The SOA Gateway uses the ODBC interface to communicate to it.

This HOWTO assumes that the SOA Gateway and SQL Server database are both running on Windows.

It is assumed that the SQL Server has the ODBC Connector installed.

For the purpose of this HOWTO, we've installed the "AdventureWorks" sample that is provided with the SQL Server installation. See here for more information about AdventureWorks and other SQL Server sample databases.

## SQL Server ODBC Setup

This section describes how to set up a system DSN used by the SOA Gateway to connect to a SQL Server database.

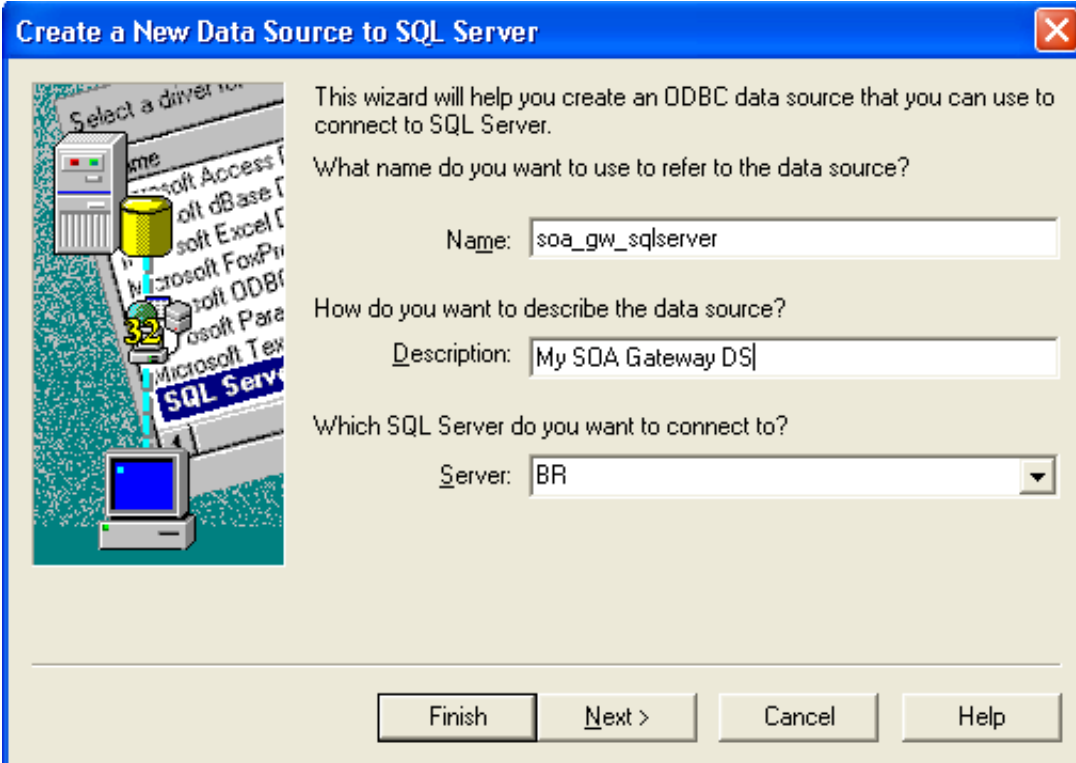
To configure it, follow these steps

- Click **Start, Control Panel, Administrative tools, DataSources(ODBC), System DSN**
- Click **Add**
- From the list of drivers, select **SQL Server**

If you do not see SQL Server here, ensure that you have the ODBC components installed.

- Click **Finish**
- Enter "soa\_gw\_sqlserver" as the Name
- Enter "My SOA Gateway DS" as the Description.

- Enter the name of your SQL Server Instance. In this case it is "BR"



**Create a New Data Source to SQL Server**

This wizard will help you create an ODBC data source that you can use to connect to SQL Server.

What name do you want to use to refer to the data source?

Name:

How do you want to describe the data source?

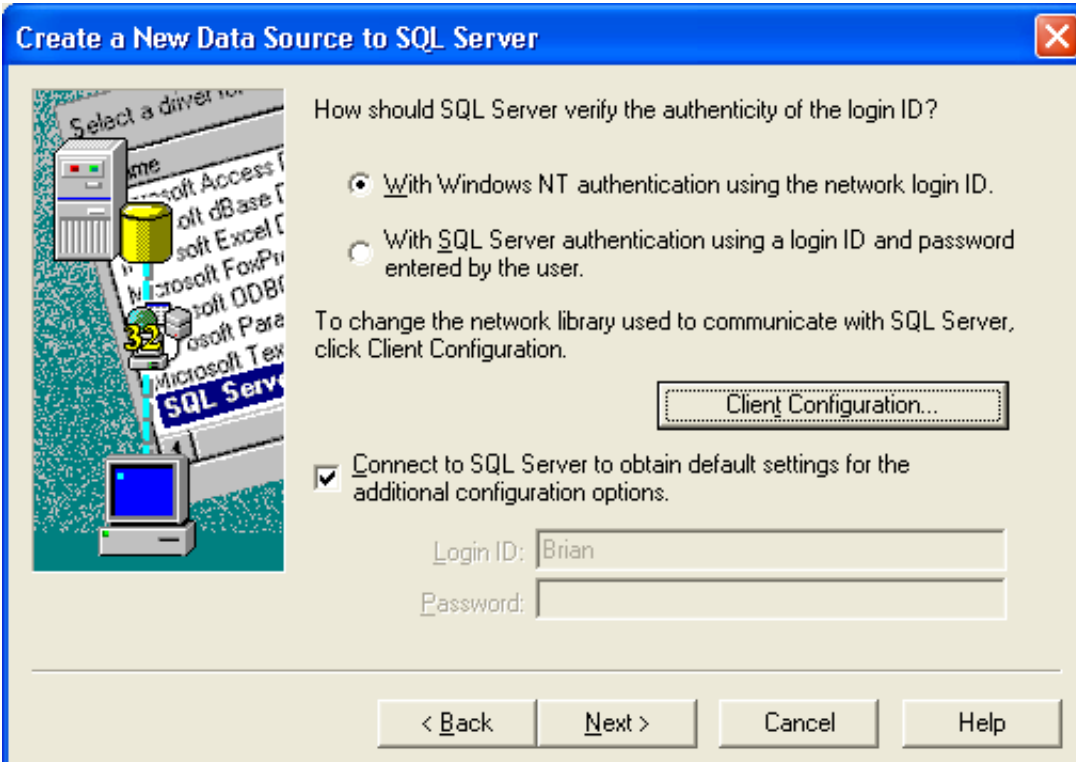
Description:

Which SQL Server do you want to connect to?

Server:

Click Next

- Select how you wish to connect to the SQL Server Instance. These settings will be specific for the SQL Server installation. In our case we choose the following settings



**Create a New Data Source to SQL Server**

How should SQL Server verify the authenticity of the login ID?

With Windows NT authentication using the network login ID.

With SQL Server authentication using a login ID and password entered by the user.

To change the network library used to communicate with SQL Server, click Client Configuration.

Connect to SQL Server to obtain default settings for the additional configuration options.

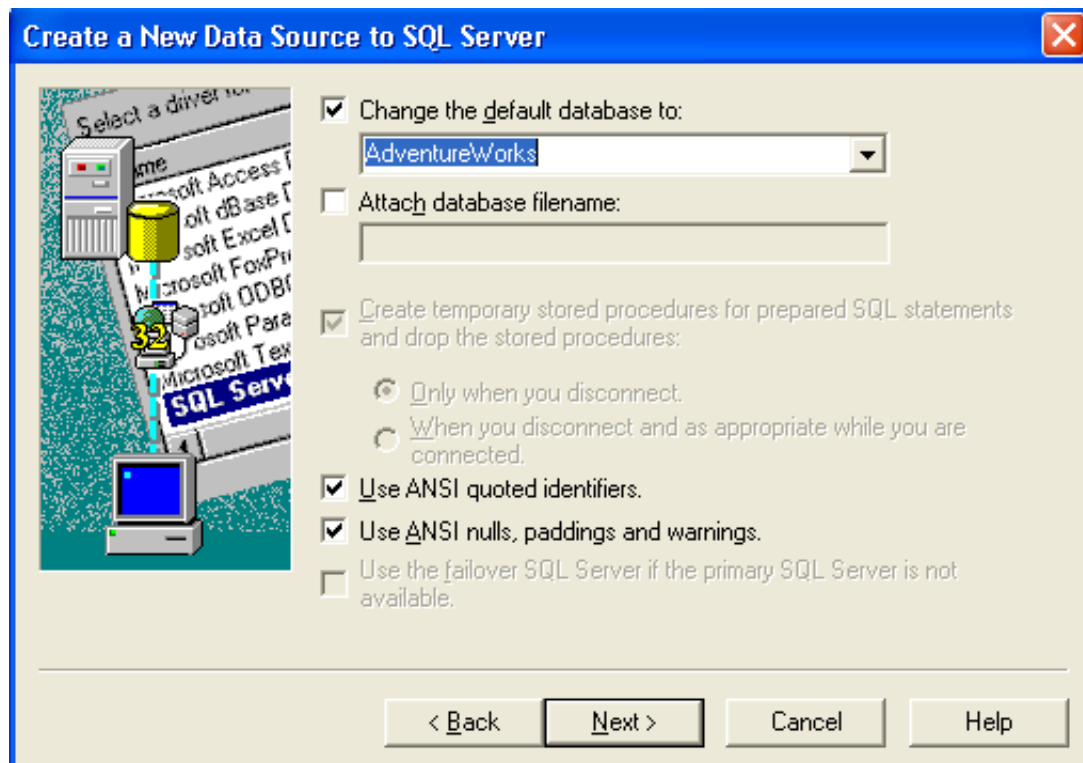
Login ID:

Password:

Click **Next**

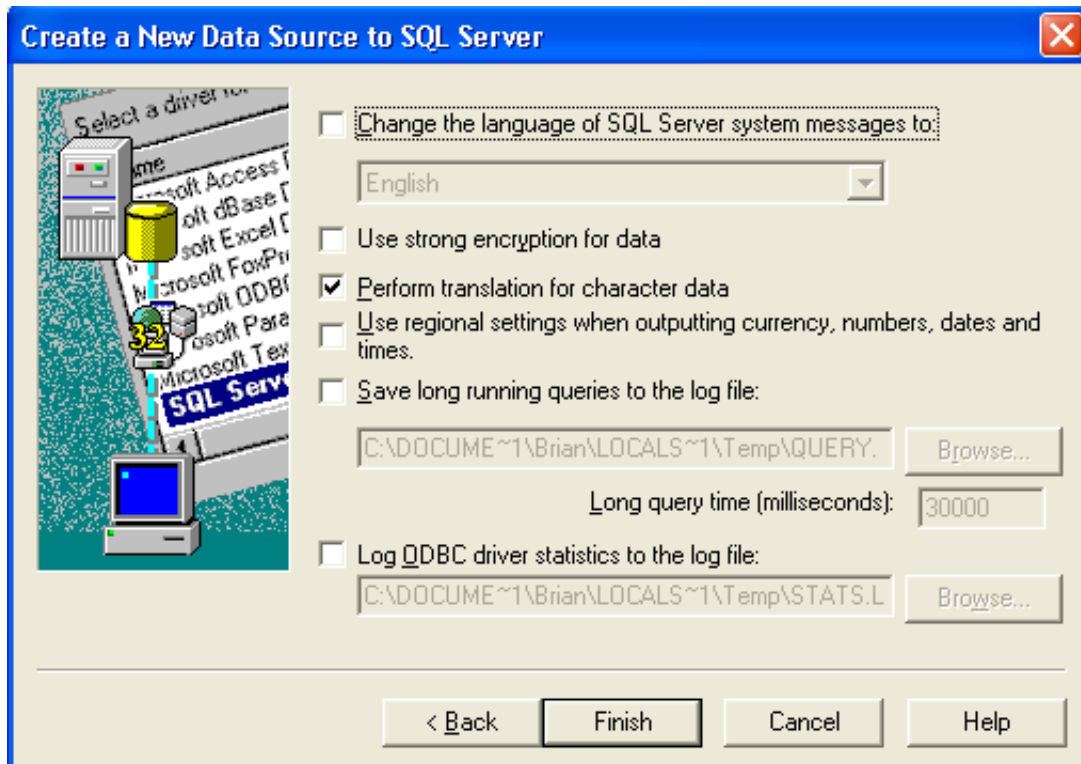
- Choose what the default should be. This will be the database that the SOA Gateway will use to search for tables on.

If you are using the AdventureWorks sample database, this screen should be as follows



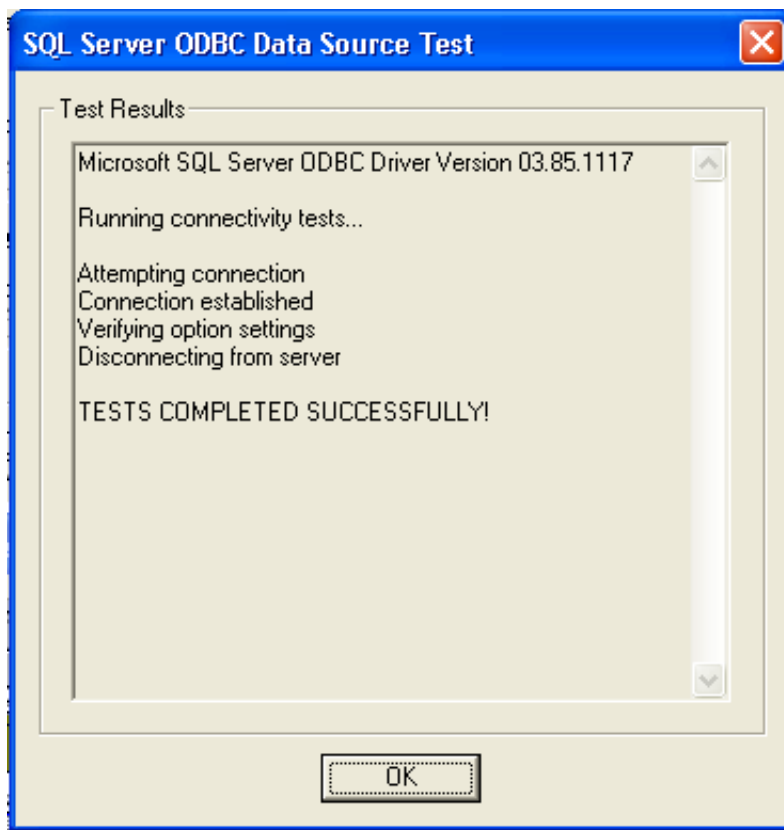
Click **Next**

- The final screen will again be specific to the SQL Server Installation. Change the necessary settings here, and click **Finish**



- It is recommended that you now test your new DSN using the SQL Server Wizard. Click **Test Data source** to begin

If your settings are correct, you should see the following report



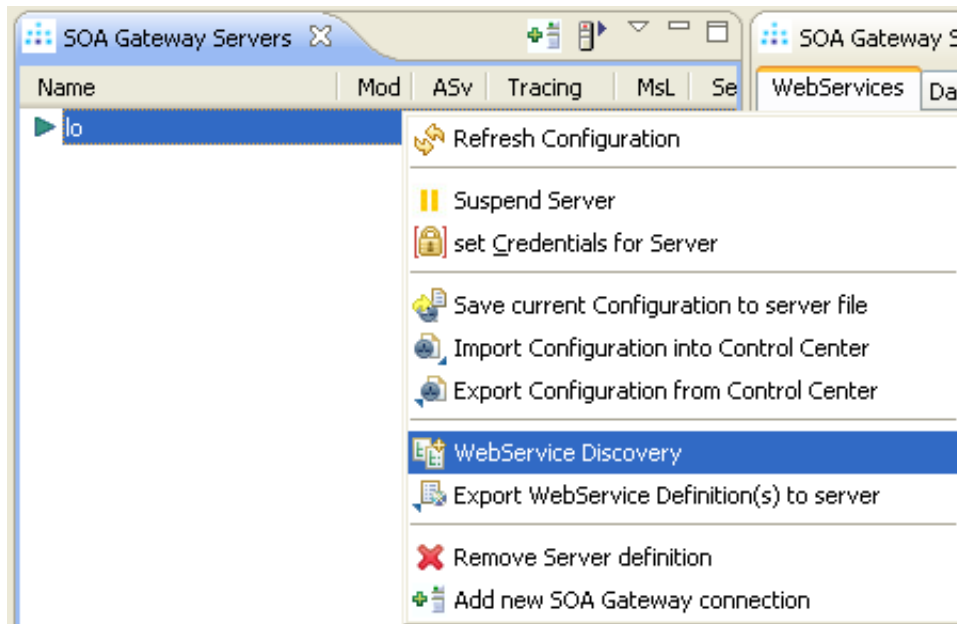
Otherwise, re-check your settings and try again.

- Click **OK** to exit the wizard.
- Click **OK** to exit the ODBC Data Source Administrator.

## SOA Gateway Configuration

The SOA Gateway must now be configured to access and use this new SQL Server DSN

- Start the SOA Gateway Control Center and add a SOA Gateway Server. See here for more information.
- If you do not have an SQL Server driver, add one now. See here for more info
- Left click on your server, and select **Web Service Discovery**

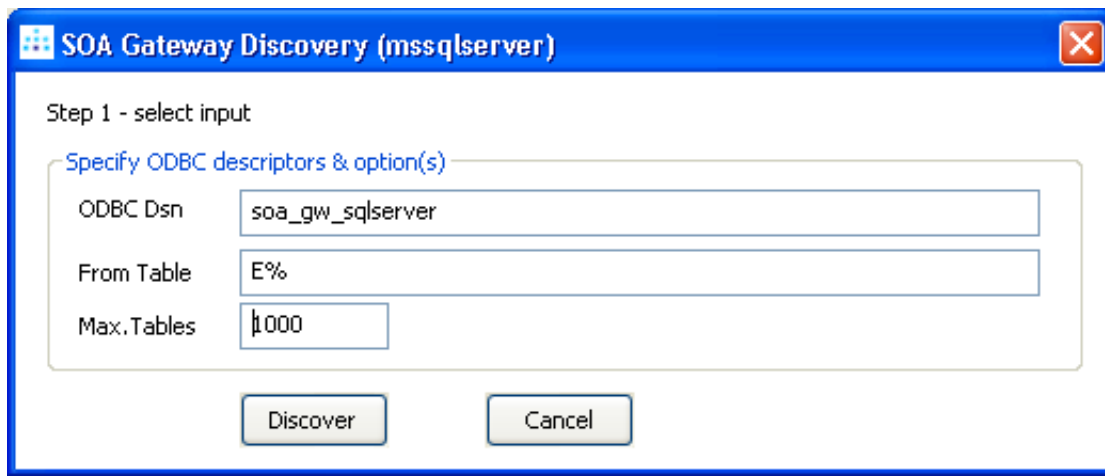


- From the next dialog choose **Microsoft SQL Server Driver** and click **Discover**



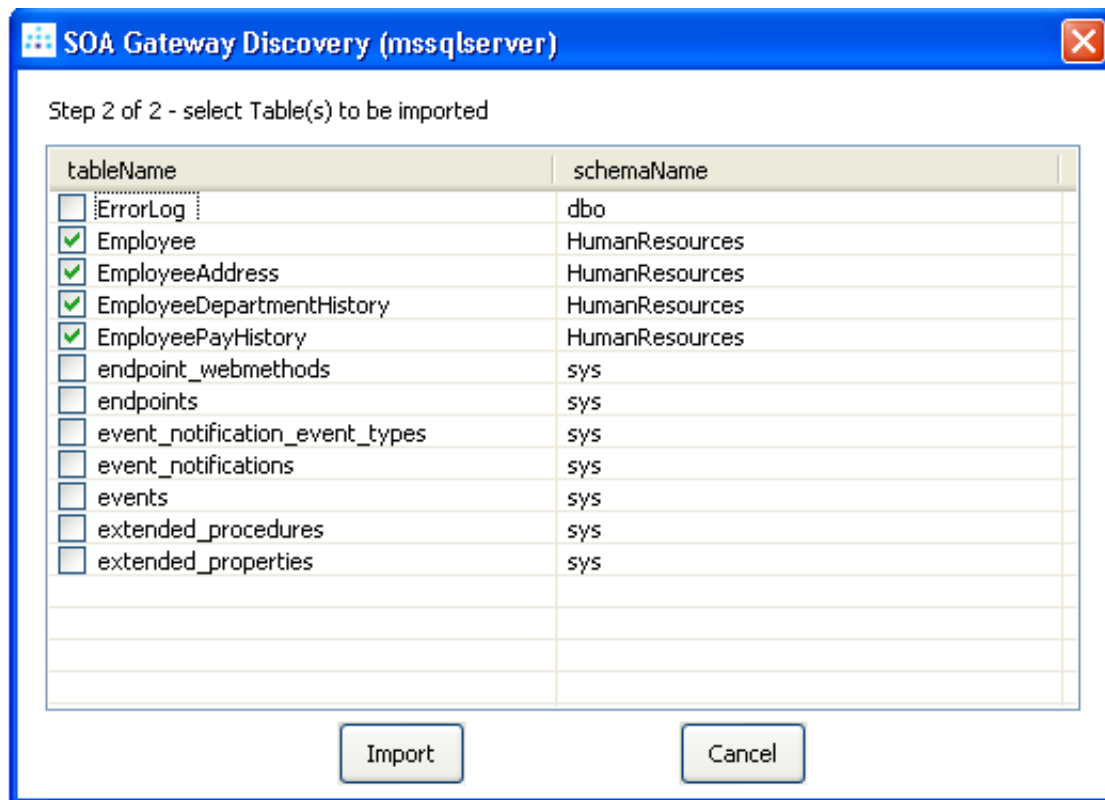
- The next dialog prompts you for the the
  1. **ODBC Dsn:** In this case it will be "soa\_gw\_sqlserver"
  2. **From Table:** This will be a pattern match value passed to the SQL Command. The search pattern characters are: an underscore (\_), which represents any single character and a percent sign (%), which represents any sequence of zero or more characters.
  3. **Max Tables:** This is a hard-limit on the amount of tables the SOA Gateway will attempt to discover.

Example:

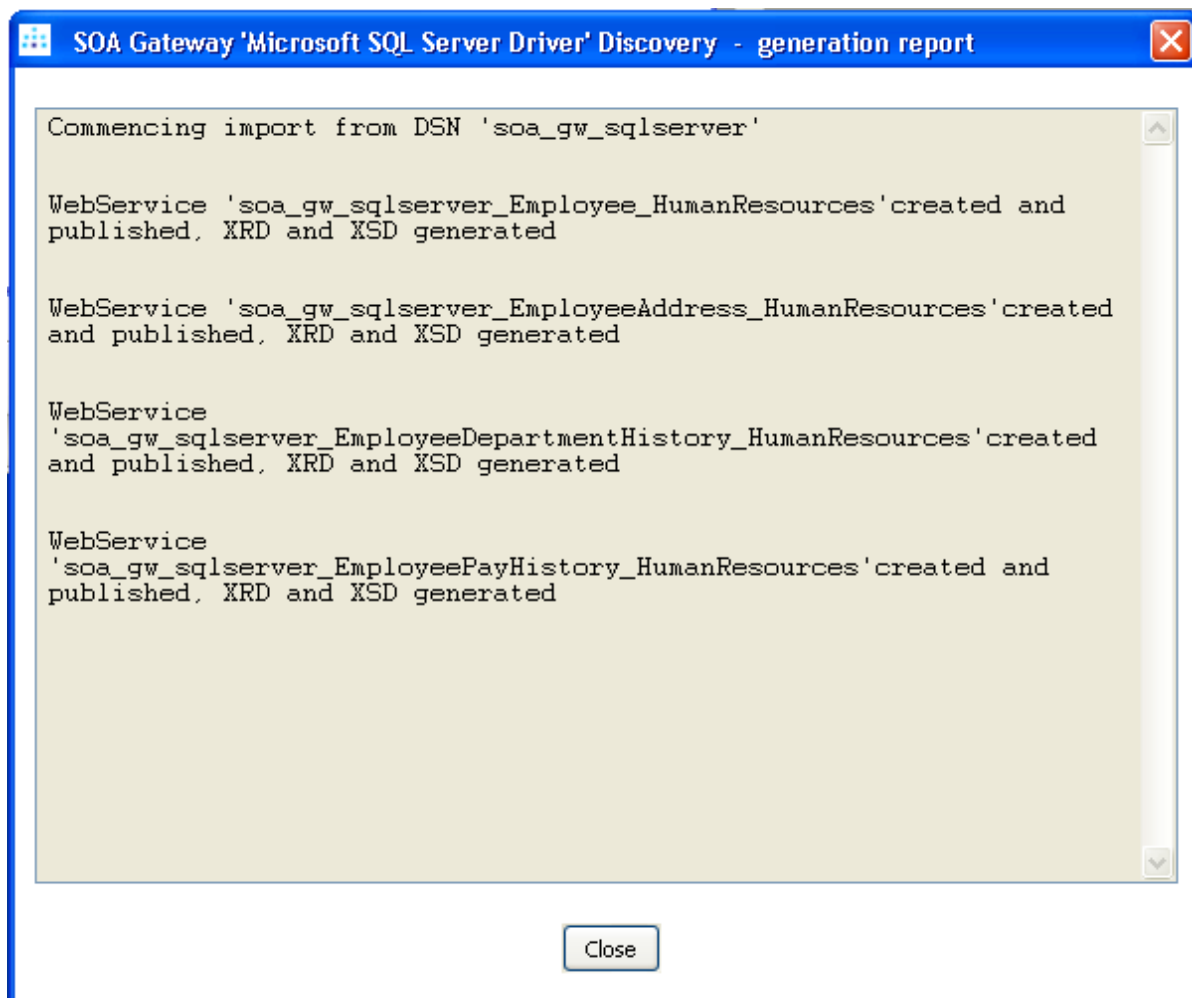


Now click **Discover**

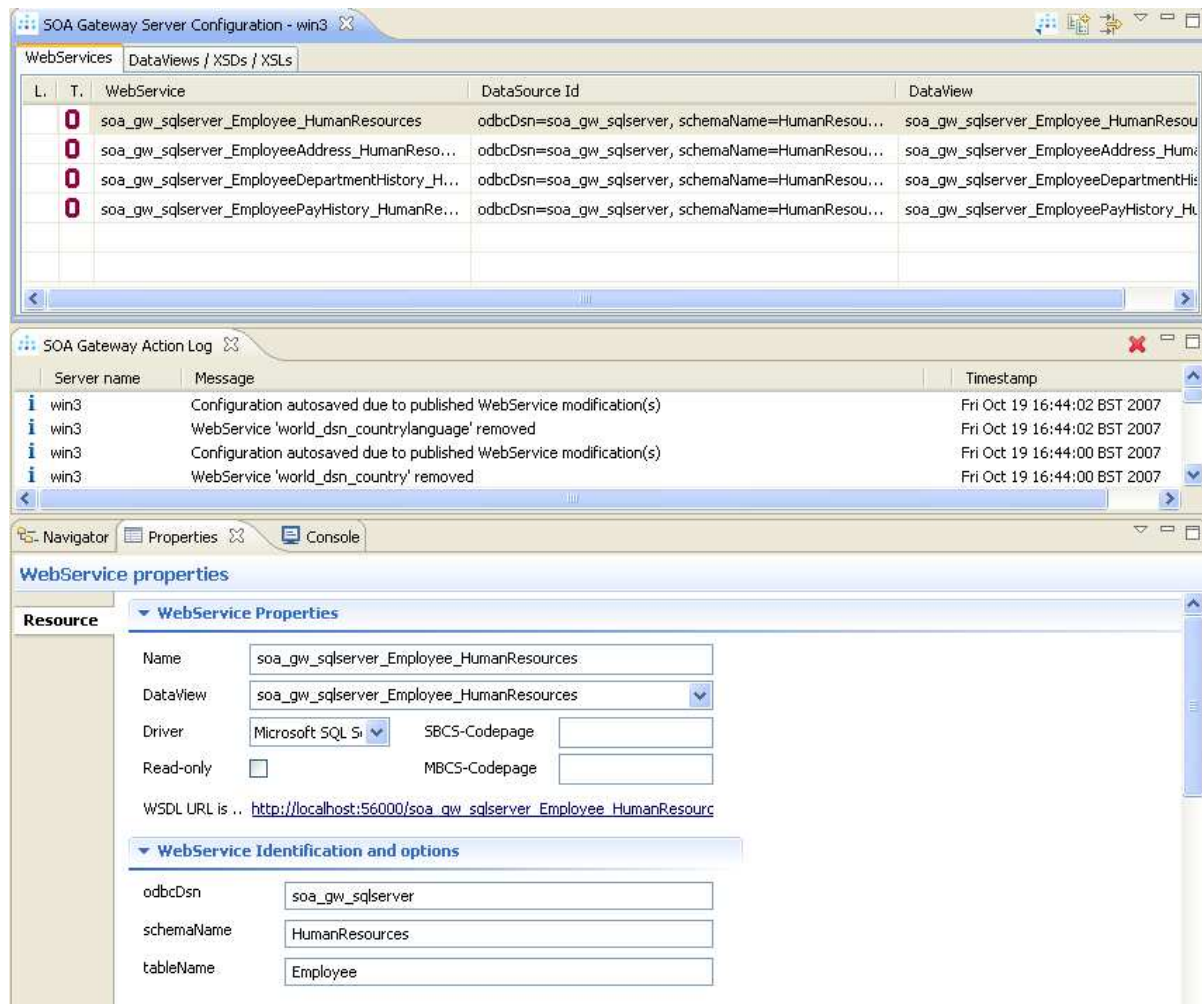
- The SOA Gateway will ask the SQL Server database ( identified by the soa\_gw\_sqlserver DSN) to display all the tables which match the request. In our case, a number of tables were returned. Select these 4 tables, and click **Import**



- The results of the import will be displayed in a dialog



- Click **Done** to finish the Web Service Discovery
- You have now created a number of Web Services based on tables from the AdventureWorks database!



## Accessing SQL Server using the SOA Gateway

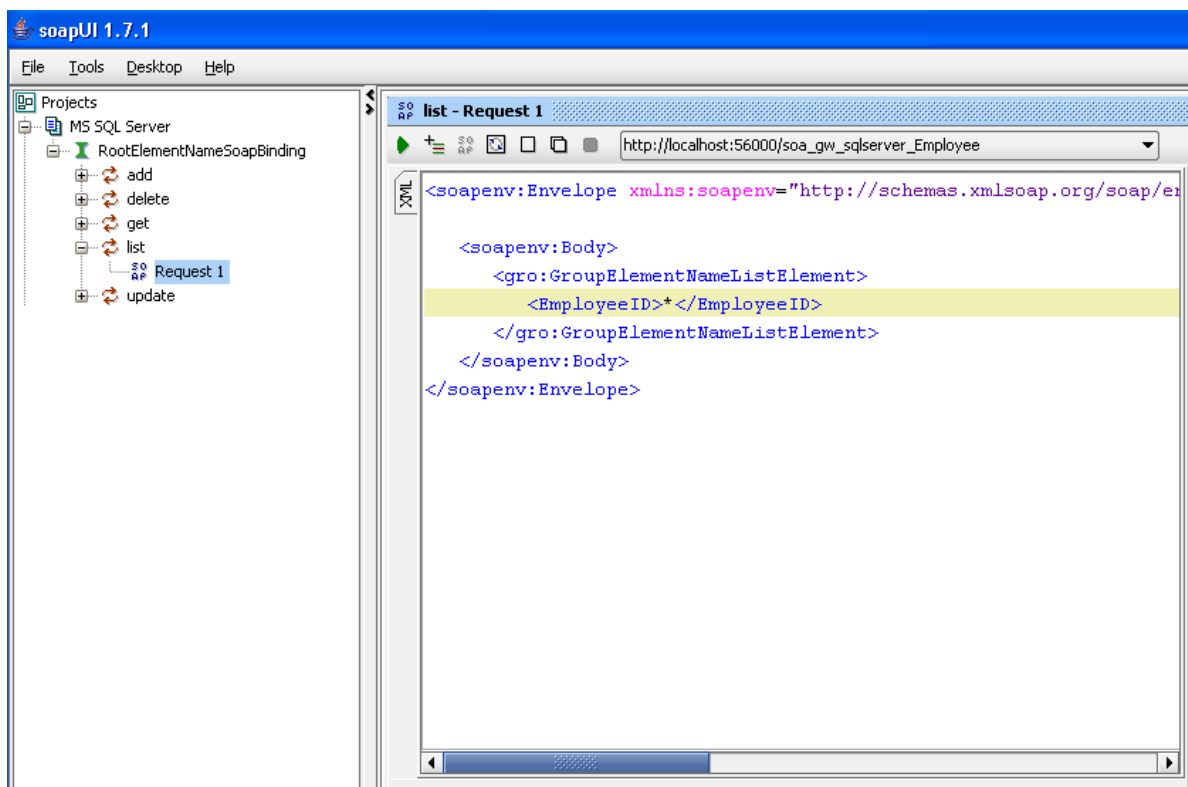
Now that the Web Services have been set up, you can access the Web Service Description Language ( WSDL ) by clicking in the WSDL URL link in the Control Centre.

This WSDL is the starting point to accessing the your tables and stored procedures using the SOA Gateway. There are many clients available to consume and use web services, for example soapUi, XMLSpy, and Infopath.

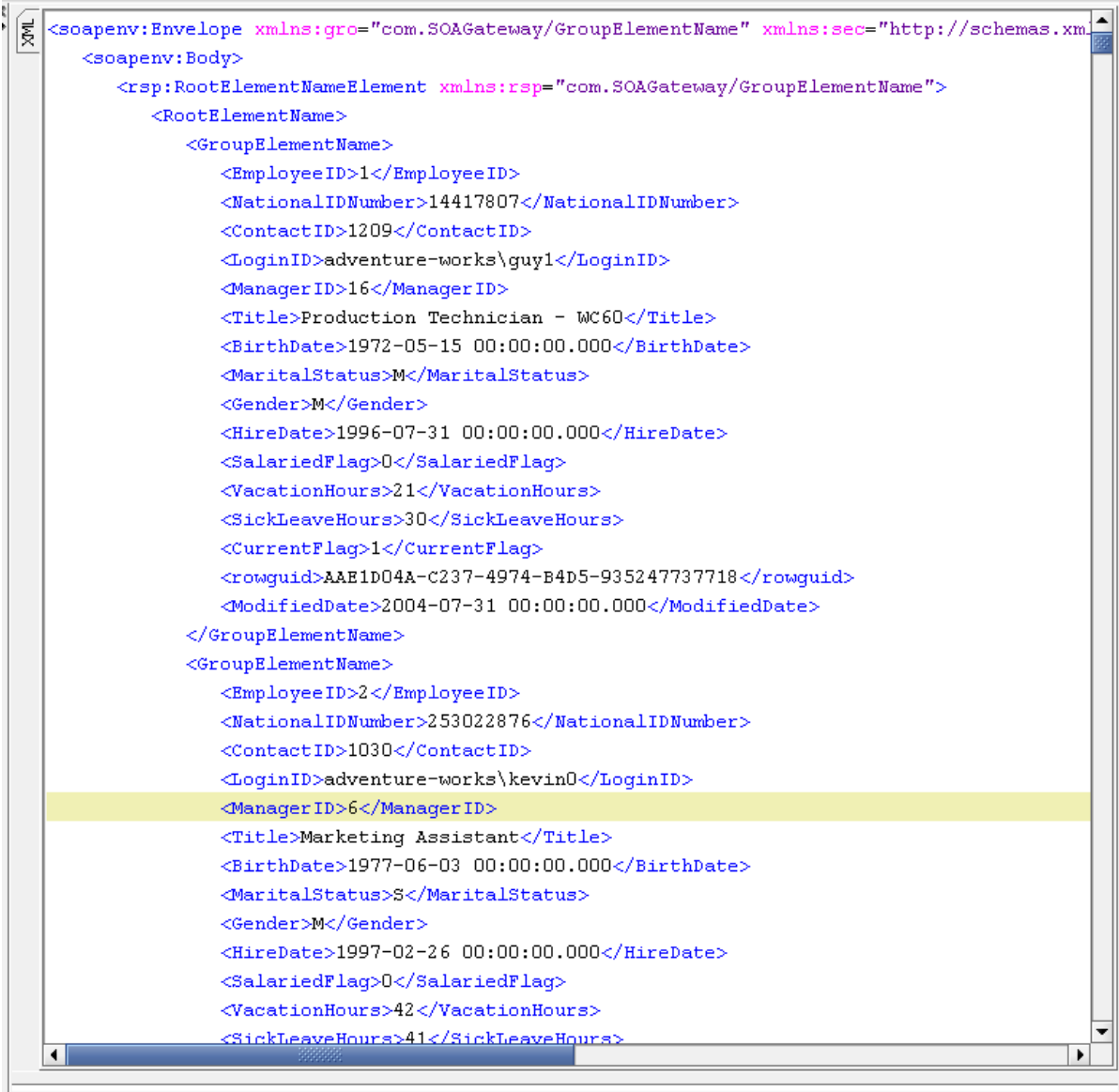
A tutorial on how to access Adabas data through soap ui is available here. The follow example is based on that tutorial, and shows how to access the Employees table we have just enabled.

- Start soapUi and create a new WSDL project.
- Import the Employee WSDL, E.g.  
http://localhost:56000/soa\_gw\_sqlserver\_Employee\_HumanResources?WSDL
- Edit the list request
- Completely remove the <GroupNameHeader> element from the <soap:Header> element

- In the <Security> element, add Username and Password for accessing the Employees table if required. Otherwise, the <Security> element, and indeed the rest of the <Header> element can be removed.
- Add "\*" as the content of the <EmployeeID> element ( same as SELECT \* from Employee; )
- E.g
- 



- Hit the green arrow, and the results of the request should be displayed



```
<soapenv:Envelope xmlns:gro="com.SOAGateway/GroupElementName" xmlns:sec="http://schemas.xml
<soapenv:Body>
  <rsp:RootElementNameElement xmlns:rsp="com.SOAGateway/GroupElementName">
    <RootElementName>
      <GroupElementName>
        <EmployeeID>1</EmployeeID>
        <NationalIDNumber>14417807</NationalIDNumber>
        <ContactID>1209</ContactID>
        <LoginID>adventure-works\guy1</LoginID>
        <ManagerID>16</ManagerID>
        <Title>Production Technician - WC60</Title>
        <BirthDate>1972-05-15 00:00:00.000</BirthDate>
        <MaritalStatus>M</MaritalStatus>
        <Gender>M</Gender>
        <HireDate>1996-07-31 00:00:00.000</HireDate>
        <SalariedFlag>0</SalariedFlag>
        <VacationHours>21</VacationHours>
        <SickLeaveHours>30</SickLeaveHours>
        <CurrentFlag>1</CurrentFlag>
        <rowguid>AAE1D04A-C237-4974-B4D5-935247737718</rowguid>
        <ModifiedDate>2004-07-31 00:00:00.000</ModifiedDate>
      </GroupElementName>
      <GroupElementName>
        <EmployeeID>2</EmployeeID>
        <NationalIDNumber>253022876</NationalIDNumber>
        <ContactID>1030</ContactID>
        <LoginID>adventure-works\kevin0</LoginID>
        <ManagerID>6</ManagerID>
        <Title>Marketing Assistant</Title>
        <BirthDate>1977-06-03 00:00:00.000</BirthDate>
        <MaritalStatus>S</MaritalStatus>
        <Gender>M</Gender>
        <HireDate>1997-02-26 00:00:00.000</HireDate>
        <SalariedFlag>0</SalariedFlag>
        <VacationHours>42</VacationHours>
        <SickLeaveHours>41</SickLeaveHours>
```

SOAP Response    Response Attachments (0)    HTTP Headers (5)    SSL Info (-)

28 : 18

Congratulations! You have now accessed an MS SQL Server table using the SOA Gateway!