

Description: Guide to configuring Oracle database connectivity support for BridgeWorX V9.x

OS Requirement: Win XP/Server 2003/ Server 2008/Vista/Windows 7

General Requirement: Knowledge of BridgeWorX and Oracle database server version 8.x or later, as well as an Oracle database server 8.x or later installation.

Oracle Database Client Tools

BridgeWorX requires the installation of Oracle Client tools locally in order to connect to the remote Oracle database server. ICONICS recommends that on the node where BridgeWorX is installed, users should install the Oracle 9 Client tools. The Oracle 9 Client tools provide the most flexibility in terms of connecting to remote Oracle database servers whether they are version 9i or earlier. Here is a list of possible connectivity scenarios depending on the version of Oracle client tools installed on the BridgeWorX node.

Oracle Client Tools Version 8.x:

If Oracle Client tools version 8.x is installed, users should only attempt to connect to their Oracle database server via ODBC or a Generic OLEDB provider. Native Oracle connectivity is not supported with 8.x client tools. If ODBC is preferred we recommend using the latest ODBC driver from Oracle for that specific version of the Oracle client side tools.

Oracle Client Tools Version 9i:

This is the preferred Oracle Client tool. Although ODBC and Generic OLEDB connectivity is supported, we recommend using the native Oracle connectivity support that is built into BridgeWorX. If the 9i client tools are installed, the possible connection types to a remote Oracle database server are via native Oracle support (preferred), ODBC or Generic OLEDB provider. If ODBC is preferred we recommend using the latest ODBC driver from Oracle for that specific version of the Oracle client side tools.

Once the necessary Oracle client tools are installed, the user needs to configure a network connection to the remote Oracle server. To accomplish this:

1. Open the Oracle Net Configuration Assistant as shown in Figure 1.



Figure 1 - Starting the Oracle Net Configuration Assistant

2. Select the Local Net Service Name configuration and click Next.

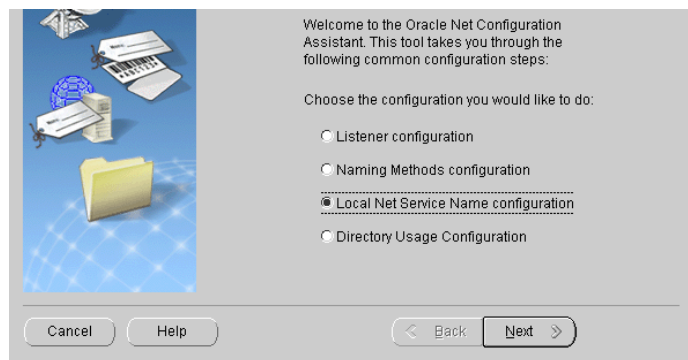


Figure 2 - Using the Oracle Net Configuration Assistant

3. Choose Add to add a new service to connect to the Oracle server. Click Next.

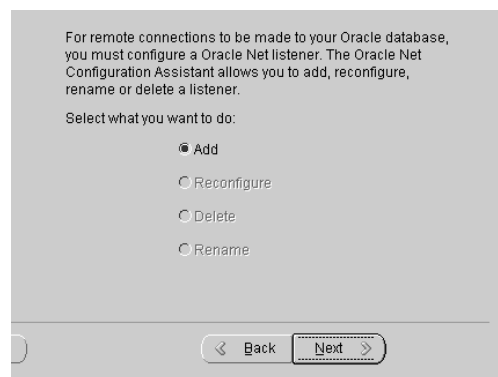


Figure 3 - Adding a new network service to Oracle

4. Select the corresponding version of the remote Oracle database server. Click Next.

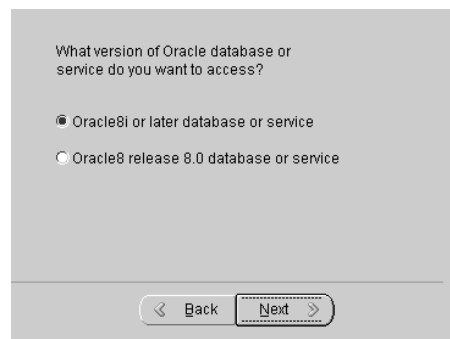


Figure 4 - Specifying the Oracle database version

5. Provide an existing Oracle database service name and click Next

For an Oracle8i or later database or service you must provide its service name. An Oracle8i or later database's service name is normally its global database name.

Service Name:

Figure 5 - Specifying the Oracle service name

6. Select the network communication protocol.

To communicate with the database across a network, a network protocol is used. Select the protocol used for the database you want to access.

TCP

TCPS

IPC

NMP

Figure 6 - Specifying the communication protocol

7. Specify the name of the Oracle database server host computer.

To communicate with the database using the TCP/IP protocol, the database computer's host name is required. Enter the host name for the computer where the database is located.

Host name:

A TCP/IP port number is also required. In most cases the standard port number should be used.

☒ Use the standard port number of 1521
☐ Use another port number:

Figure 7 - Specifying the database server host computer

8. Finally, the user should perform an Oracle service connection test on the final dialog of the Oracle Net Configuration Assistant.

You can verify that an Oracle database can be reached, using the information provided, by performing a connection test.

Would you like to test that a connection can be made to the database?

☐ No, do not test
☒ Yes, perform a test

Figure 8 - Testing the Oracle client connection

9. If the above Oracle client connection test fails, the user should go back and check to make sure that the appropriate login credentials are supplied.

Wait while the Oracle Net Configuration Assistant tries to connect to the database using the information you provided...

Details:

Connecting...ORA-12545: Connect failed because target host or object does not exist
The test did not succeed.

Some of the information you provided may be incorrect. Press Back to review the information provided for net service name, or Change Login to change username.

Figure 9 - Example of invalid login credentials error

Change Login

Change Login

Username:

Password:

Figure 10 - Login dialog to the Oracle database server

Connecting Natively to Oracle

This is the preferred Oracle database server connection and it is supported only if the Oracle 9i Client tools are installed on the same node as BridgeWorX 8.0.

1. To create a native Oracle connection, add a new database connector to BridgeWorX and select the Oracle connection

option when clicking on the Database Login button of the BridgeWorX Configurator.

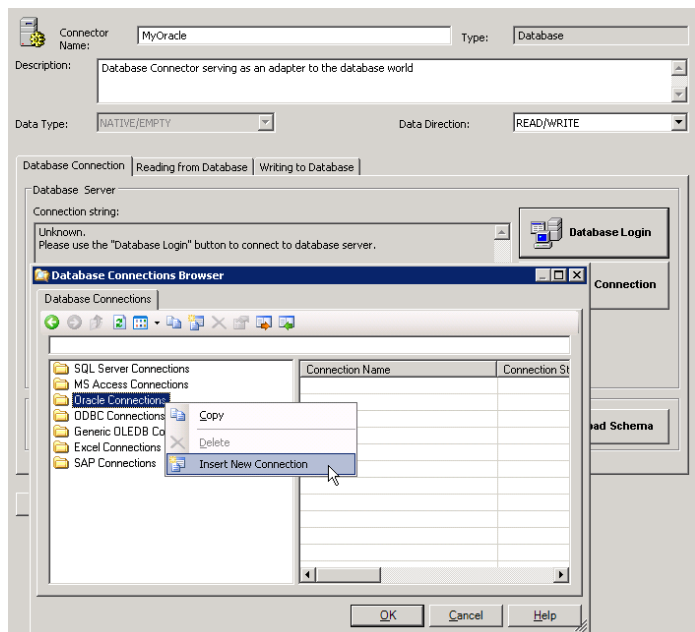


Figure 11 - Using native connection to Oracle

2. Provide the Oracle database service name to connect to, the user name and password.

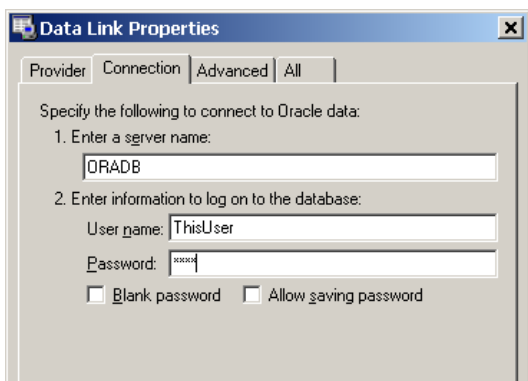


Figure 12 - Providing Oracle server connection information

3. The BridgeWorX Configurator will attempt to connect to the remote Oracle database server and to retrieve all schema information. This can be a lengthy operation, but it will be done once and the schema will be cached for subsequent usage.

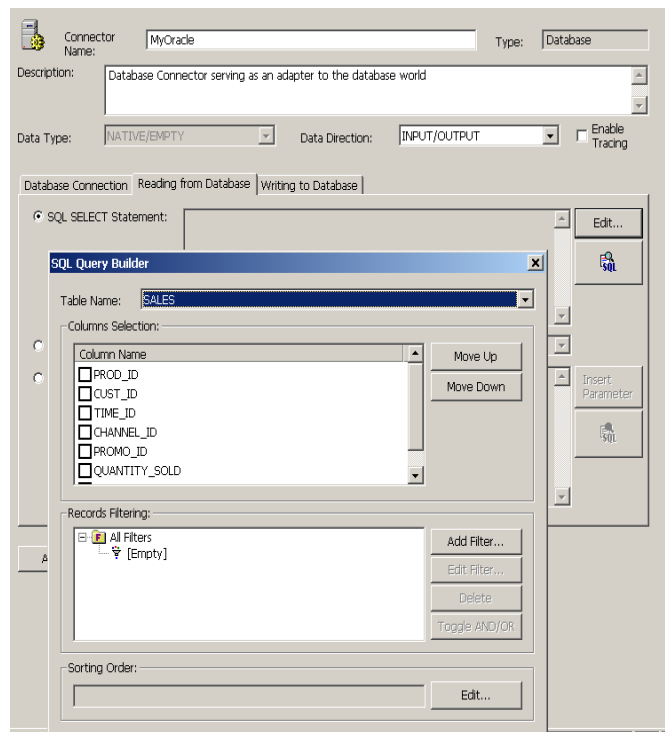


Figure 13 - Using the Oracle database connector

4. Select the desired Read or Write operations by clicking on the Edit button and select the Tables or Stored procedures.

Establishing an ODBC Connection

To establish an ODBC data connection to Oracle it is recommended that the ODBC driver provided by Oracle is installed and used along with the Oracle client side tools.

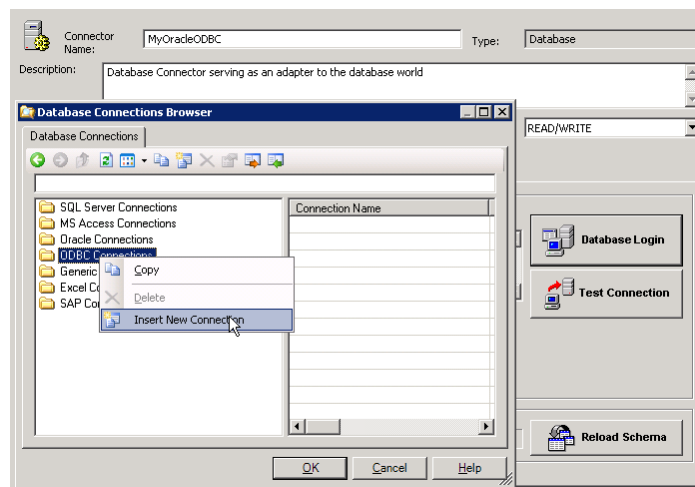


Figure 14 - Using ODBC connection to Oracle

1. To create an ODBC Oracle connection, add a new database connector to BridgeWorX and select the Native ODBC option when clicking on the Database Login button of the BridgeWorX Configurator. This will cause the ODBC data source configuration dialog to appear.
2. In the ODBC data source configuration dialog as in Figure 15, select the Machine Data Source Tab and click on the New... button to setup the new ODBC data source to Oracle.

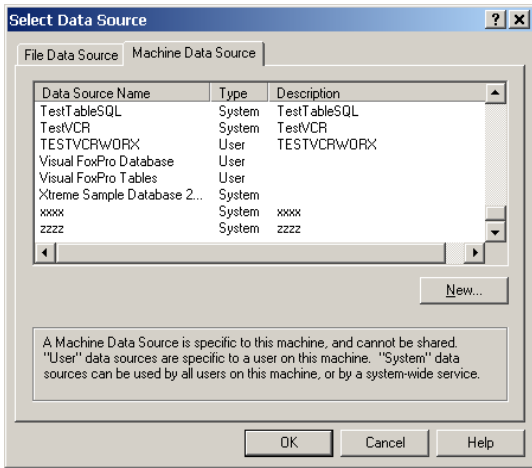


Figure 15 - Configuring an ODBC data source

3. Select 'System Data Source' as in Figure 16 and click on the Next button to select the ODBC driver for the ODBC connection.

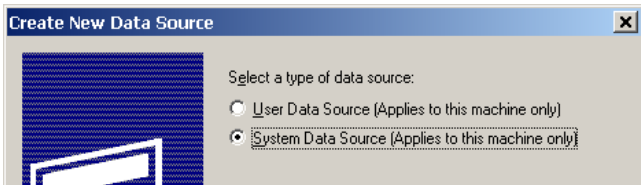


Figure 16 - Configuring an ODBC data source (cont.)

4. Select the latest ODBC driver supplied by Oracle as in Figure 17 and click on the Next button.

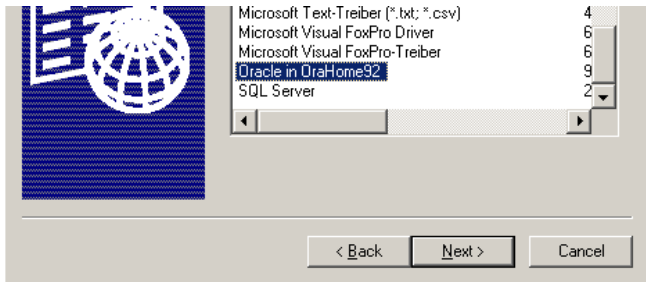


Figure 17 - Configuring an ODBC data source (cont.)

5. Click on the finish button to create the data source. This will bring up the dialog as in Figure 18 to select the Oracle database service name to connect to and to supply connection information such as User name and password.
6. Click Ok when you are done.

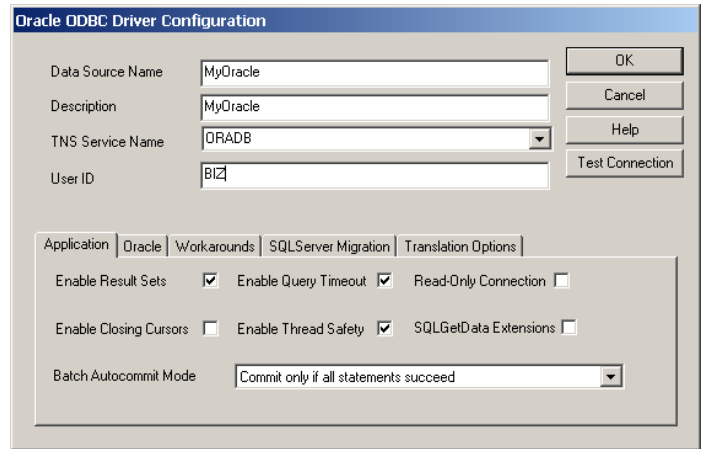


Figure 18 - Configuring an ODBC data source (cont.)

7. The last dialog to be displayed is the actual login dialog to the Oracle database server.

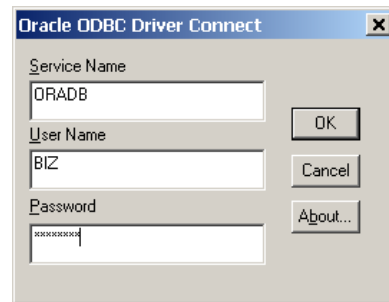


Figure 19 - Oracle ODBC Driver Connect dialog

8. The BridgeWorX Configurator will attempt to connect to the remote Oracle database server via ODBC and to retrieve all schema information. This can be a lengthy operation, but it will be done once and the schema will be cached for subsequent usage.

Establishing an OLEDB Oracle Data Connection

1. To create an OLEDB Oracle connection, add a new database connector to BridgeWorX and select the Generic OLEDB option when clicking on the Database Login button of the BridgeWorX Configurator.

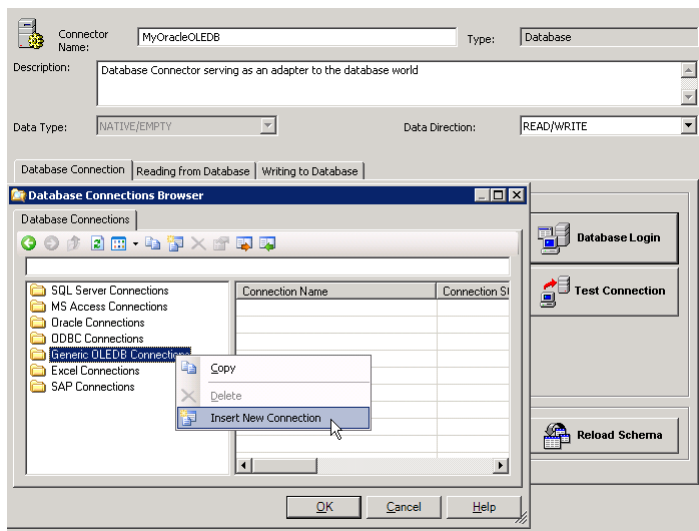


Figure 20 - Configuring an OLEDB connection to Oracle

2. Select Microsoft OLEDB Provider for Oracle on the Provider property page.

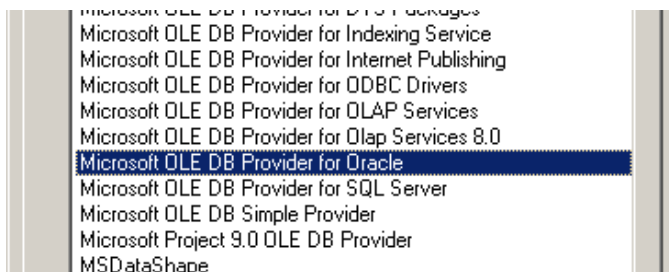


Figure 21 - Configuring an OLEDB connection (cont.)

3. Click next to display the Oracle OLEDB Provider connection property, where the user needs to enter the corresponding Login information.

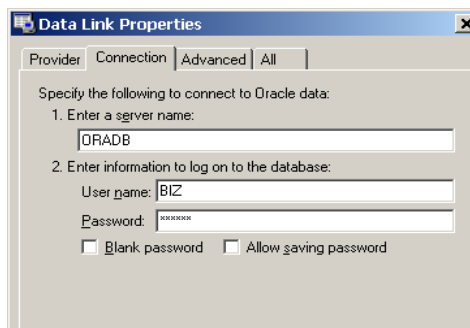


Figure 22 - Configuring an OLEDB connection (cont.)

4. The BridgeWorX Configurator will attempt to connect to the remote Oracle database server via Generic OLEDB connectivity and to retrieve all schema information. This

can be a lengthy operation, but it will be done once and the schema will be cached for subsequent usage.

Understanding Oracle “Synonyms”

The BridgeWorX Configurator will attempt upon connecting to the Oracle database server to retrieve all schema information. The retrieved schema information, which will include tables, stored procedures etc. is validated against the Login credentials of the user attempting to configure the Oracle connection. Due to the structure of the Oracle database server there is a possibility that the retrieved schema information may include tables or stored procedures not directly available to BridgeWorX runtime, which may have been configured to run using a different account than that of the account of the user interacting with the BridgeWorX configuration tools.

This is so because the Oracle database server maintains separate “schema” information on per configured user account. During runtime, attempting to access a table or stored procedure not included in the Oracle database schema information relating to the Login credentials of the BridgeWorX service, an error may occur with the description “Table not found” or something similar to this.

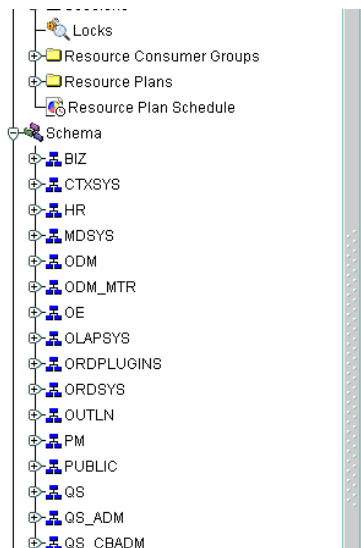


Figure 23 - Oracle server schema information

This issue can be easily resolved by assigning a “synonym” to the schema information relating to the Login credentials of the BridgeWorX service, using the exact Table name or stored procedure name as in the Oracle database. To do so:

1. Open the Oracle Enterprise Manager, select the Schema to which to add a Synonym and select the Create option.

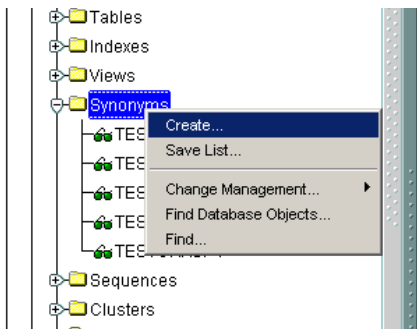


Figure 24 - Creating an Oracle Synonym

2. The Create Synonym dialog appears. Select the type of Synonym to create, the source Schema name, the Object Type (i.e. Table, View etc.), the Object itself and provide a name for the new Synonym. This name must be the actual name of the original Object (i.e. Table, View etc.) for which the new Synonym is being created.

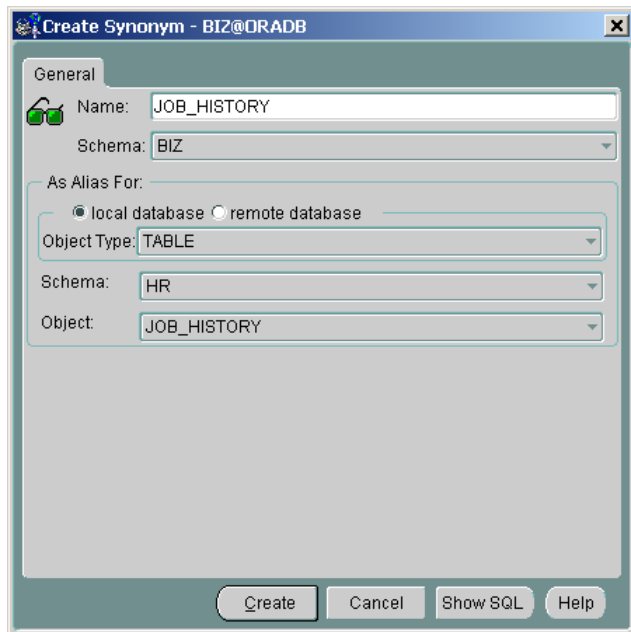


Figure 25 - Creating an Oracle Synonym (cont.)

3. Once the user clicks on the Create button the Synonym is ready to be used.