



**Using the JNBridge JMS Adapter for .NET  
with Oracle AQ  
version 4.0**

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# Using the JMS Adapter with Oracle AQ

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## Quick Config for Oracle AQ

### When OAQ is configured as a Foreign Server in WebLogic

Because the JNBridge adapter is a stand-alone JMS client, the foreign server configuration in WebLogic for Oracle AQ must use the Oracle DB connection URL rather than a Data Source. However, JMS clients deployed to WebLogic require the Oracle AQ foreign server configuration to use a Data Source. The solution is to create two foreign servers, one for stand-alone JMS clients and the other for clients deployed to WebLogic, e.g. a MDB.

#### Binding Properties Tab

- Initial Context Factory: `weblogic.jndi.WLInitialContextFactory`
- JMS Scheme: `t3`
- Queue Connection Factory:  
The local JNDI name of the OAQ queue connection factory.
- Topic Connection Factory:  
The local JNDI name of the OAQ topic connection factory.
- Class Path:  
`wlthint3client.jar, orai18n.jar, ojdbc6.jar, aqapi.jar`  
The JAR file listed above, `ojdbc6.jar`, must be used if a Java 6 JVM is used. If Java 5 is being used, then the JAR file `ojdbc5.jar` must be used.
- JVM Path (examples):  
`C:\Program Files\Java\jre7\bin\client\jvm.dll`  
If a 64-bit JRE is being used, then the path would be similar to:  
`C:\Program Files\Java\jre7\bin\server\jvm.dll`

#### URI Properties Tab

- Port Number: `7001`

## When OAQ is stand-alone using the JNBridge JNDI scaffold

Please see the section *Using the JNBridge JNDI scaffold with stand-alone Oracle AQ* for more information.

### Binding Properties Tab

■ Initial Context Factory: `com.jnbridge.adapters.oaq.InitialContextFactory`

■ JMS Scheme: `orcl`

■ Queue Connection Factory:

This connection factory must be used: `QueueConnectionFactory`

■ Topic Connection Factory:

This connection factory must be used: `TopicConnectionFactory`

■ Class Path:

`jnbOAQ.jar, aqapi.jar, orai18n.jar, ojdbc6.jar, jms.jar, jndi.jar, jta.jar`

The JAR file listed above, `ojdbc6.jar`, must be used in the Java 6 JVM is used. If Java 5 is being used, then the JAR file, `ojdbc5.jar`, must be used.

■ JVM Arguments:

`-Dcom.jnbridge.adapters.oaq.dbname=[OracleSID]`

■ JVM Path (examples):

`C:\Program Files\Java\jre7\bin\client\jvm.dll`

If a 64-bit JRE is being used, then the path would be similar to:

`C:\Program Files\Java\jre7\bin\server\jvm.dll`

### URI Properties Tab

■ Port Number: `1521`

### Security Properties Tab

The User Name and Password credentials to access the Oracle DB must be supplied.

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## Using the JMS Adapter with Oracle AQ

This document assumes some passing familiarity with enterprise Java such as JNDI contexts, factories and general connection requirements and parameters. This document also assumes that the .NET developer has access to particular information peculiar to the target JMS implementation. Finally, this document assumes that the reader is knowledgeable and experienced with .NET, C# or VB and Visual Studio.

This document assumes that Oracle AQ is either stand-alone, or deployed to WebLogic configured as a foreign server. If OracleAQ is deployed to WebLogic, or any other JEE application server using a JCA resource adapter, then refer to the configuration guide specific for that application server.

This document only discusses those property values in the adapter transport handlers and location handlers that pertain to communicating with Oracle AQ. Other properties that are not discussed here can be found in the companion *JNBridge JMS Adapter for .NET Users' Guide* document.

### Resources

- The user guide, *JNBridge JMS Adapter for .NET Users' Guide*.
- Chances are, if the target JMS implementation is mature, the values for the configuration of can be supplied by the Oracle AQ administrator, developers or gleaned from existing JMS client code.
- It is strongly suggested that the developer read the section *Tips and Tricks* in the *JNBridge JMS Adapter for .NET User's Guide*.

### Machine Prerequisites

The following prerequisites are needed for the adapter.

- A public Java Run-time Environment (JRE) must be installed on the target machine. The JNBridge JMS Adapter supports the Standard Edition JRE 7 or above.
- The JNBridge JMS Adapter for .NET uses the stand-alone JMS environment supplied by Oracle AQ. This environment consists of several JAR files including, depending on configuration, a JNBridge JAR file.

## Configuring the Adapter Connection Properties

The **Add Adapter Service Reference** development tool in Visual Studio is used to generate the `app.config` file and the WCF client file. The WCF client contains the methods chosen to send and receive JMS messages. The `app.config` file contains the binding element whose attribute values are the parameters used to initialize and connect to the JMS server. Each of the binding attribute values can be entered in the **Binding Properties** tab of the **Configure Adapter** dialog box. While it is possible to enter these values and then connect to the JMS server from the **Add Adapter Service Reference** dialog box, it is more efficient to work off-line and generate the `app.config` and the WCF client using only the generic operations. Please see the section *Tips and Tricks* in the *JNBridge JMS Adapter for .NET Users' Guide* for more information about working off-line and using the generic operations.

What follows are the property values required to connect to the Oracle AQ. The version of Oracle AQ discussed in this document is 7.6.

### Binding Properties Tab

The *JMS Properties* category are properties used to properly connect to a JMS server.

#### ■ Choose JMS Vendor

This is a drop-down control that comes pre-charged with default vendor connection properties. Oracle AQ is not included in this list. Please enter the configuration name *Oracle AQ*. Then edit the remaining properties entering the following values.

#### ■ Custom Connection String

This is a text-editable field. This property is only used if the JMS implementation uses complex URLs containing query expressions, or some proprietary connection string, that can not be constructed from the Host Name and Port Number properties. If this property contains a value, then the Host and Port properties in the URI tab will be ignored.

#### ■ JMS Acknowledge Mode

The Acknowledge Mode is a drop-down list containing the JMS specification that determines how a JMS client and server institute a reliable messaging protocol. The choices are `AUTO_ACKNOWLEDGE`, `CLIENT_ACKNOWLEDGE` and `DUPS_OK_ACKNOWLEDGE`. Regardless of the choice, the JNBridge JMS Adapter will correctly implement the protocol. For a default Oracle AQ connection factory, **`AUTO_ACKNOWLEDGE`** is the default configuration.

#### ■ Initial Context Factory

This is a text-editable field containing the name of the JNDI initial context factory. The initial context factory is a JNDI class used to locate and instance factories and JMS destinations.

If Oracle AQ is configured in WebLogic as a foreign server, use this factory:

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## `weblogic.jndi.WLInitialContextFactory`

If Oracle AQ is stand-alone, then the JNBridge supplied JNDI scaffolding in `jnbOAQ.jar` must be used along with this initial context factory:

## `com.jnbridge.adapters.oaq.InitialContextFactory`

Please see the section *Using the JNBridge JNDI scaffold with stand-alone Oracle AQ* for more information.

**!** **Factory names are case sensitive—be sure the name (including the complete namespace, if necessary) is typed correctly.**

### ■ JMS Scheme

This is a text-editable field. The JMS Scheme or *Protocol* is particular to each vendor's implementation. The protocol is part of the URI used to connect to the JMS service.

If Oracle AQ is configured as a foreign server in WebLogic, then use:

`t3` or `t3s`

If Oracle AQ is used stand-alone along with the JNBridge JNDI scaffold, use:

`orcl`

### ■ JMS Version

This property tells the adapter which JMS implementation to expect when it loads the vendor's client stack—the JAR files in the Class Path property. The drop-down list contains two choices, 'JMS 1.1' and 'JMS 2.0'.

### ■ JMS Security Mode

The JMS Security Mode is a drop-down list that specifies the type of security required by the JMS server implementation. The choices are none, simple and strong. If the choice is simple, then the server expects a user name and password.

**!** **If the JMS server implements simple security, it is not necessary to configure this property. Enter a user name and password—the JNBridge JMS Adapter will automatically switch to the simple security mode.**

### ■ Queue Connection Factory

This is a text-editable field. If Oracle AQ is configured as a foreign server within WebLogic,



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then use the local JNDI name of the OAQ queue connection factory. If Oracle AQ is stand-alone using the supplied JNBridge JNDI scaffold, then use:

`QueueConnectionFactory`

## ■ Topic Connection Factory

This is a text-editable field. If Oracle AQ is configured as a foreign server within WebLogic, then use the local JNDI name of the OAQ topic connection factory. If Oracle AQ is stand-alone using the supplied JNBridge JNDI scaffold, then use:

`TopicConnectionFactory`

## JNBridge Properties Category

The JNBridge Properties Category correctly configure the .NET-to-Java interoperability core components.

## ■ Class Path

The Java class path is a set of semicolon-separated paths to the JAR or class files required for a JMS client installation. The class path is used by the JNBridge Java and .NET interoperability components to locate the JMS and JNDI client Java classes so they can be instantiated in the Java Virtual Machine.

To edit the class path, click in the field to enable the browse button. Click on the button to launch the Edit Class Path dialog. Note that only checked elements will be added to the class path when the dialog is dismissed.

The JAR files required by the JMS adapter if Oracle AQ is configured as a foreign server in WebLogic:

```
[WebLogic Directory]\server\lib\wlthint3client.jar  
[Oracle DB Directory]\dbhome_1\RDBMS\jlib\aqapi.jar  
[Oracle DB Directory]\dbhome_1\jlib\orai18n.jar
```

If using a Java 6 JRE, use:

```
[Oracle DB Directory]\dbhome_1\jdbc\lib\ojdbc6.jar
```

If using a Java 5 JRE, use:

```
[Oracle DB Directory]\dbhome_1\jdbc\lib\ojdbc5.jar
```

The JAR files required by the JMS adapter if using stand-alone Oracle AQ. You must use the supplied JNDI scaffold. Please see the section *Using the JNBridge JNDI scaffold with stand-alone Oracle AQ* for more information.

```
[Adapter Directory]\support\Oracle_AQ_ICF.zip\jnBOAQ.jar  
[Oracle DB Directory]\dbhome_1\RDBMS\jlib\aqapi.jar  
[Oracle DB Directory]\dbhome_1\jlib\orai18n.jar
```

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```
[Oracle DB Directory]\dbhome_1\RDBMS\jlib\jmscommon.jar  
[Oracle DB Directory]\dbhome_1\jlib\jndi.jar  
[Oracle DB Directory]\dbhome_1\jlib\jta.jar
```

If using a Java 6 JRE, use:

```
[Oracle DB Directory]\dbhome_1\jdbc\lib\ojdbc6.jar
```

If using a Java 5 JRE, use:

```
[Oracle DB Directory]\dbhome_1\jdbc\lib\ojdbc5.jar
```

## ■ JVM Path

The JVM Path property is the absolute path to the Java Virtual Machine implementation, `jvm.dll`. To edit the JVM Path property, click in the field to enable the browse button. Click on the button to launch the standard File Open dialog. Navigate to `jvm.dll` and click OK. In the example shown, the JRE used is:

```
C:\Program Files\Java\jre7\bin\client\jvm.dll
```

## ■ JVM Arguments:

If Oracle AQ is being used stand-alone along with the JNBridge JNDI scaffold, this argument supplies the SID identifier of the Oracle DB.

```
-Dcom.jnbridge.adapters.oaq.dbname=[OracleSID]
```

Please see the section *Using the JNBridge JNDI scaffold with stand-alone Oracle AQ* for more information.

## URI Properties Tab

This category provides the location of the host where Oracle AQ is running and the port that Oracle AQ listens to for connections.

### ■ Host

The host name or IP address of the machine running Oracle AQ.

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## ■ Port

For Oracle AQ configured as a foreign server in WebLogic, the default t3 port is:

**7001**

For stand-alone Oracle AQ using the supplied JNDI scaffold, use the port where the DB is listening for connections. The default is:

**1521**

Please see the section *Using the JNBridge JNDI scaffold with stand-alone Oracle AQ* for more information.

## Security Tab

This tab need only be used if security is implemented in the Oracle AQ server and is of type *simple*. Note that the password will appear in clear text in the app.config file. Please see the section *Deploying Solutions* in the *Users' Guide*. If using stand-alone Oracle AQ, then the supplied JNBridge JNDI scaffold requires the password and user name for the OAQ user/role. That user must also be the *schema owner*. Please see the section *Using the JNBridge JNDI scaffold with stand-alone Oracle AQ* for more information.

## ■ Client credential type

This is a drop-down control. Choose the credential type *Username*.

## ■ User name

Enter the user name credential.

## ■ Password

Enter the password credential

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## Touble Shooting

### Using the JNBridge JNDI scaffold with stand-alone Oracle AQ

If Oracle AQ is used as a stand-alone implementation—it's not deployed to WebLogic or any other JEE application server—the required JNDI (Java Naming and Directory Interface) implementation is missing. The JMS 1.1 specification defines the use of JNDI for JMS clients, like the adapter.

The adapter supplies a JNDI scaffold that can be found in the zip file, `Oracle AQ_ICF.zip`. It can be found in the support directory, , e.g. `C:\Program Files\JNBridge\JMSAdapters\DotNet\support\Oracle_AQ_ICF.zip`.

The zip file contains the source for an initial context factory and naming context. To use the supplied JNDI scaffold unzip the archive to a convenient location. The JAR file containing the JNDI scaffold is `jnbOAQ.jar`.

Follow these instructions to use the work-around initial context factory.

1. Copy the JAR file, `jnbOAQ.jar`, to the location where the other JAR files that constitute the Oracle AQ JMS client are located.
2. Modify the Class Path property in the send and receive transport handlers by adding the new JAR file to the classpath.
3. In the Initial Context Factory property in the send and receive transport handlers enter this class:

```
com.jnbridge.adapters.oaq.InitialContextFactory
```

4. In the JVM Arguments property in the send and receive transport handlers, enter this value to specify the Oracle DB SID identifier:

```
-Dcom.jnbridge.adapters.oaq.dbname=[OracleSID]
```