



**Using the JNBridge JMS Adapter for .NET  
with WebSphere  
version 3.0**

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# Using the JMS Adapter with WebSphere

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## Quick Config for WebSphere

### Binding Properties Tab

- Initial Context Factory: `com.ibm.websphere.naming.WsnInitialContextFactory`
- JMS Scheme: `iiop`
- Queue Factory: No connection factories are pre-configured in WebSphere.
- Topic Factory: No connection factories are pre-configured in WebSphere.
- Class Path
  - Using IBM JRE: `sibc.jndi.jar, sibc.jms.jar`
  - Using Sun JRE: `sibc.jndi.jar, sibc.jms.jar, sibc.orb.jar`
- JVM Path (example)
  - Using IBM JRE: `C:\Program Files\IBM\WebSphere\AppServer\java\jre\bin\j9vm\jvm.dll`
  - Using Sun JRE: `C:\Program Files\Java\jre1.5.0_15\bin\client\jvm.dll`

### URI Properties Tab

- Port Number: `2809`

## Using the JMS Adapter with WebSphere

This document demonstrates connecting the JNBridge JMS Adapter for .NET to the IBM WebSphere Application Server 6.1. The configuration discussed here is also applicable to later WebSphere releases. Within WebSphere, the underlying JMS service can be provided by the default messaging provider bundled with WebSphere or a WebSphere MQ implementation. In either case, the adapter configuration and connection properties would be similar.

WebSphere 6.1 does not come with a pre-configured JMS provider. It is necessary to configure the service using the default messaging provider or MQ. 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.

This document only discusses those property values that pertain to communicating with WebLogic. Other properties that are not discussed here can be found in the companion *Using the JNBridge JMS Adapter for .NET* 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 WebSphere administrator, developers or gleaned from existing JMS client code.
- This link is IBM documentation providing an overview and download of the stand-alone [WebSphere JMS client](#) required by the JMS adapter. This link provides information about [installing and configuring](#) the stand-alone client.
- It is strongly suggested that the developer read the section *Tips and Tricks* in the *JNBridge JMS Adapter for .NET Users' 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 5 or above.
- The stand-alone WebSphere client can use either the IBM Java Run-time Environment (JRE) or the Sun JRE. The IBM JRE ships with WebSphere 6.1. It can also be obtained by downloading the [IBM Eclipse Development](#) environment. Please contact IBM for additional licensing information regarding the IBM JRE. The Sun JRE can be downloaded from the Sun website. Regardless of which JRE is used, it must be present on the BizTalk machine. Supported JRE versions are Java 5 (1.5) and 6 (1.6). Java 4 (1.4) is not supported.

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## Configuring the .NET adapter machine

### Installing the IBM WebSphere JMS client

The JNBridge JMS Adapter for .NET uses the WebSphere stand-alone JMS environment supplied by IBM (see *Machine Prerequisites*). This JMS client can be downloaded as a single JAR file, `sibc_install-<version>.jar`, from the IBM website.

If the IBM JRE is being used, you must install the environment by executing this command:

```
java -jar sibc_install-<version>.jar jms_jndi_ibm [InstallDir]
```

If the Sun JRE is being used, use this command line:

```
java -jar sibc_install-<version>.jar jms_jndi_sun [InstallDir]
```

The installation supporting the IBM JRE will result in two JAR files, `sibc.jndi.jar` and `sibc.jms.jar`, being installed in `[InstallDir]\lib`. The installation supporting the Sun JRE will add a third JAR file, `sibc.orb.jar`.

### Configuring the Sun ORB

If the Sun JRE is being used, then a required JEE system property configuring the Sun Object Request Broker (ORB) must be supplied to the Sun JVM. If the IBM JRE is being used, skip this configuration step. Arguments are passed to the Sun JVM by the adapter using the JVM Arguments property. Put this argument in the property JVM Arguments in the Binding Properties tab or as the value for the element `JVMArgs` in the `app.config` file.

```
-Dcom.ibm.CORBA.ORBInit=com.ibm.ws.sib.client.ORB
```

## 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 JMS implementation in WebSphere. The versions of WebSphere discussed in this document are v6 and v7.

## 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. Click and select *WebSphere* and the default configuration values will automatically appear.

### ■ 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 WebSphere connection factory, `AUTO_ACKNOWLEDGE` is the default configuration.

### ■ Initial Context Factory

This is a text-editable field containing the name of the initial context factory. The initial context factory is a class used to create a JNDI initial context used to look-up connection factories and destinations. The default initial context factory for WebSphere is:

`com.ibm.websphere.naming.WsnInitialContextFactory`

**!** *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 RMI implementation. The protocol is part of the URI used to connect to the JMS service.

For WebSphere, the scheme is:

`iiop`

### ■ 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.*

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## ■ Queue Connection Factory

This is a text-editable field. No connection factories are pre-configured in WebSphere.

**!** *This value includes the JNDI directory path to the connection factory. The complete JNDI path must be provided.*

## ■ Topic Connection Factory

This is a text-editable field. No connection factories are pre-configured in WebSphere.

**!** *This value includes the JNDI directory path to the connection factory. The complete JNDI path must be provided.*

## 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 to .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 are: [sibc.jndi.jar](#), [sibc.jms.jar](#) and, if the Sun JRE is used, [sibc.orb.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:

Using IBM JRE: [C:\Program Files\IBM\WebSphere\AppServer\java\jre\bin\j9vm\jvm.dll](#)

Using Sun JRE: [C:\Program Files\Java\jre1.5.0\\_15\bin\client\jvm.dll](#)

## URI Properties Tab

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

- Host

The host name or IP address of the machine running WebSphere.

- Port

This is a text editable field. Enter the port where WebSphere is listening for client connections. By default this is port **2809**.

## Security Tab

This tab need only be used if security is implemented in the WebSphere 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*.

- 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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## JNDI Names

Figure 1 shows the WebSphere 6.1 Integrated Solutions Console. The console is displaying the configured JMS queues. Note that there are two configured queues, one each for two different JMS providers. The queue, `test_Q`, is created under the default messaging provider (the JMS implementation that comes with WebSphere) and has the JNDI name, `myQ`. The queue, `MQ_Q`, is provided by MQSeries and has the JNDI name, `myMQ_Q`.

It is important to use complete JNDI paths, either forward slash (‘/’) or dot (‘.’) delineated, for connection factories and JMS destinations.

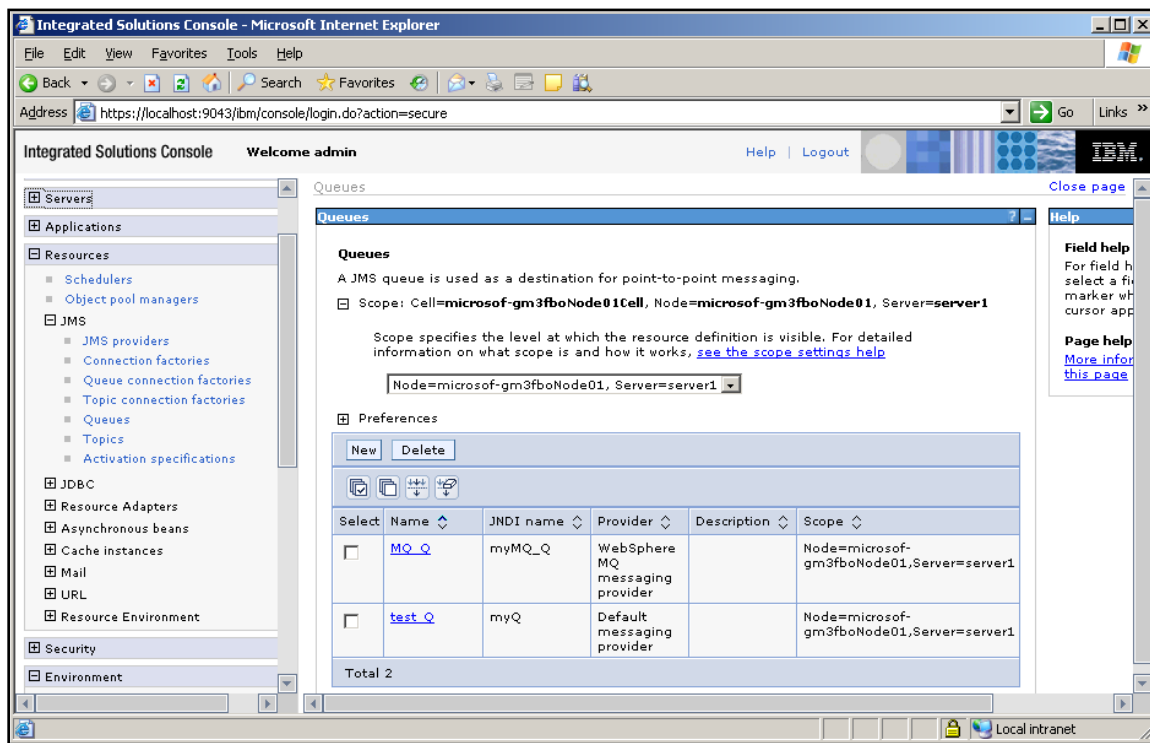


Figure 1. The JNDI tree

