



BEA WebLogic Adapter for MQSeries

Installation and Configuration Guide for WebLogic Integration 2.1

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***BEA WebLogic Adapter for MQSeries
Installation and Configuration Guide for WebLogic Integration 2.1***

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About This Document

This document explains how to install the BEA WebLogic Adapter for MQSeries for WebLogic Integration 2.1, which is used to develop client-server interfaces between MQSeries and other Web applications. It is organized as follows:

The BEA WebLogic Adapter for MQSeries supports IBM MQSeries 5.2.

Chapter 1, “Installing the BEA WebLogic Adapter for MQSeries,” provides the information you need before installing the BEA WebLogic Adapter for MQSeries, and describes how to install the adapter with WebLogic Integration 2.1.

What You Need to Know

This document is written for system integrators who develop client interfaces between MQSeries and other Web applications. It describes how to install the BEA WebLogic Adapter for MQSeries to develop application environments with a special focus on message integration.

It is assumed that you know Web technologies and have a general understanding of MQSeries, Microsoft Windows, and UNIX systems.

e-docs Web Site

BEA product documentation is available on the BEA corporate Web site. From the BEA Home page, click on Product Documentation or go directly to the e-docs product documentation page at <http://e-docs.bea.com>.

Related Information

The following WebLogic Integration documents contain information that is relevant to using this product.

- *BEA WebLogic Adapter for MQSeries User Guide* at <http://edocs.bea.com/wladapters/mq/docs71/index.html>
- *BEA WebLogic Adapter for MQSeries Release Notes* at <http://edocs.bea.com/wladapters/mq/docs71/index.html>
- BEA WebLogic Server 6.1 installation and user documentation, which is available at the following URL:
<http://edocs.bea.com/wls/docs61/index.html>
- BEA WebLogic Integration 2.1 installation and user documentation, which is available at the following URL:
http://edocs.bea.com/wlintegration/v2_1sp/index.html

Contact Us!

Your feedback on the BEA WebLogic Adapter for MQSeries documentation is important to us. Send us e-mail at docsupport@bea.com if you have questions or comments. Your comments will be reviewed directly by the BEA professionals who create and update the BEA WebLogic Adapter for MQSeries documentation.

In your e-mail message, please indicate that you are using the documentation for the BEA WebLogic Adapter for MQSeries 7.1 release.

If you have any questions about this version of BEA WebLogic Adapter for MQSeries, or if you have problems installing and running the product, contact BEA Customer Support through BEA WebSupport at www.bea.com. You can also contact Customer Support by using the contact information provided on the Customer Support Card, which is included in the product package.

When contacting Customer Support, be prepared to provide the following information:

-
- Your name, e-mail address, phone number, and fax number
 - Your company name and company address
 - Your machine type and authorization codes
 - The name and version of the product you are using
 - A description of the problem and the content of pertinent error messages

Documentation Conventions

The following documentation conventions are used throughout this document.

Convention	Item
boldface text	Indicates terms defined in the glossary.
Ctrl+Tab	Indicates that you must press two or more keys simultaneously.
<i>italics</i>	Indicates emphasis or book titles.
monospace text	Indicates code samples, commands and their options, data structures and their members, data types, directories, and filenames and their extensions. <i>Examples:</i> <pre>#include <iostream.h> void main () the pointer psz chmod u+w * \tux\data\ap .doc tux.doc BITMAP float</pre>
monospace boldface text	Identifies significant words in code. <i>Example:</i> <pre>void commit ()</pre>

Convention	Item
<i>monospace</i> <i>italic</i> <i>text</i>	Identifies variables in code. <i>Example:</i> String <i>expr</i>
UPPERCASE TEXT	Indicates device names, environment variables, and logical operators. <i>Examples:</i> LPT1 SIGNON OR
{ }	Indicates a set of choices in a syntax line. The braces themselves should never be typed.
[]	Indicates optional items in a syntax line. The brackets themselves should never be typed. <i>Example:</i> buildobjclient [-v] [-o name] [-f <i>file-list</i>]... [-l <i>file-list</i>]...
	Separates mutually exclusive choices in a syntax line. The symbol itself should never be typed.
...	Indicates one of the following in a command line: <ul style="list-style-type: none">■ That an argument can be repeated several times in a command line■ That the statement omits additional optional arguments■ That you can enter additional parameters, values, or other information The ellipsis itself should never be typed. <i>Example:</i> buildobjclient [-v] [-o name] [-f <i>file-list</i>]... [-l <i>file-list</i>]...
. . . .	Indicates the omission of items from a code example or from a syntax line. The vertical ellipsis itself should never be typed.

1 Installing the BEA WebLogic Adapter for MQSeries

This section provides instructions for installing the BEA WebLogic Adapter for MQSeries with WebLogic Integration 2.1. It includes the following topics:

- Before Installing the Adapter for MQSeries
- Understanding the Representation of Paths
- Installing the Adapter for MQSeries with WebLogic Integration
- Next Steps

Note: The BEA WebLogic Adapter for MQSeries supports the IBM MQSeries 5.2.

Before Installing the Adapter for MQSeries

This section includes preliminary actions you must take before installing the adapter. It includes the following topics:

- Review Release Notes
- Install MQSeries Client

Review Release Notes

Before you install the BEA WebLogic Adapter for MQSeries, you must review the *BEA WebLogic Adapter for MQSeries Release Notes* to ensure that you have the prerequisite software installed. The *BEA WebLogic Adapter for MQSeries Release Notes* is available at the following URL:

<http://edocs.bea.com/wladders/mq/docs71/index.html>

Install MQSeries Client

To interact with IBM MQSeries (now known as WebSphere MQ), you must first install MQSeries Client for Java on the relevant platform on which the BEA WebLogic Adapter for MQSeries will be installed. If you require a Local Bindings type of MQ Connection, it is mandatory to install IBM MQSeries Server on the same machine where the Adapter for MQSeries is installed.

Additionally, you must install the classes required to develop MQSeries applications in Java through the following Java-based APIs:

- MQSeries classes for Java
- MQSeries classes for Java Message Service (JMS)

If you are using MQSeries 5.1 or 5.2, the required classes are provided in the ma88 SupportPac, which is available at the following URL:

<http://www-3.ibm.com/software/ts/mqseries/txppacs/ma88.html>

If you are using WebSphere MQ 5.3, the MQSeries classes for Java and JMS are installed in the `java/lib` (`java\lib` for Windows) directory when you select the JAVA Messaging Component during installation.

Understanding the Representation of Paths

The location of files in the WebLogic Integration environment depends on options you select during installation and configuration. Therefore, the following conventions are used throughout to represent paths.

- *BEA_HOME* represents BEA Home directory specified for your WebLogic installation.

For example, if you install the product in the default location on a Windows system, *BEA_HOME* represents `C:\bea`.

- *WLI_HOME* represents the root of your WebLogic Integration installation.

For example, if you install WebLogic Integration 2.1 in the default location on a Windows system, *WLI_HOME* represents `C:\bea\wlintegration2.1`.

- *domain* is used to indicate the name of a domain.

In WebLogic Integration 2.1, preconfigured domains (*bpmdomain*, *eidomain*, *wlidomain*, and *samples*) are created as subdirectories of the *WLI_HOME*\config directory. Therefore, *domain* may be used to represent the root of a preconfigured WebLogic Integration 2.1 domain as follows:

WLI_HOME\config\domain

- *DOMAIN_HOME* represents the complete path to the root of a domain.

For example, if you install WebLogic Integration 2.1 in the default location on a Windows system, *DOMAIN_HOME* represents `C:\bea\wlintegration2.1\config\domain`.

Notes:

- *WLI_HOME* and *BEA_HOME* also represent the corresponding Windows and UNIX environment variables. For example, the literal interpretation of *WLI_HOME* is `%WLI_HOME%` for Windows and `$WLI_HOME` for UNIX.
- Unlike *WLI_HOME* and *BEA_HOME*, *DOMAIN_HOME* is not an environment variable that is set by default in the WebLogic Integration environment.
- *localhost* represents the IP address of the machine running the WebLogic Server.

Installing the Adapter for MQSeries with WebLogic Integration

The installation procedure includes the following steps:

- Step 1. Obtain the Adapter for MQSeries
- Step 2. Configure the WebLogic Integration Database for the Domain
- Step 3. Extract the Adapter JAR file from the EAR file
- Step 4. Obtain JAR Files and Set the CLASSPATH
- Step 5. Update the BEA License
- Step 6. Deploy the Adapter for MQSeries Using the WebLogic Server Console
- Step 7. Create an Adapter Administrative User

Step 1. Obtain the Adapter for MQSeries

The BEA WebLogic Adapter for MQSeries is packaged as an EAR file (BEA_MQSERIES_7_1.ear). You can obtain the software on CD or download it from the BEA website.

Step 2. Configure the WebLogic Integration Database for the Domain

If you have not already done so, you must create the WebLogic Integration database tables for your domain. For detailed instructions, see “Configuring the Database for a Domain” in *Starting, Stopping and Customizing BEA WebLogic Integration*, which is available at the following URL:

http://edocs.bea.com/wlintegration/v2_1sp/config/index.htm

Step 3. Extract the Adapter JAR file from the EAR file

Use an appropriate extracting tool and extract the `BEA_MQSERIES_7_1.jar` file from the EAR file to a directory of your choice. For example, `WLI_HOME/adapters/MQAdapter/lib`.

Step 4. Obtain JAR Files and Set the CLASSPATH

To use the Adapter for MQSeries, you need the following JAR and dll files:

- `com.ibm.mq.jar` - This is available with the installation of MQ Client for Java.
- `mqjbnd04.dll` - This file is available with the MQ Client for Java installation, and is required for Local Bindings Connection. This is specific to Windows. For non-Windows platforms, find the equivalent of this dll and set the `PATH` as required.

To set the `CLASSPATH` and `PATH`, do the following:

1. Go to the root directory for your domain:

```
cd DOMAIN_HOME
```

Note: You must choose a WebLogic Integration domain that supports Application Integration functionality.

2. Do one of the following:

- On Windows, find `SetDomainTypeData.cmd` file.

- On UNIX, find `SetDomainTypeData` file.

Here, *DomainType* is the type of the domain. For example, if your domain is configured to support the development of solutions that employ the full range of WebLogic Integration functionality, it contains the `SetWliDomainData.cmd` file.

3. Update the following `SVRCP` environment variable settings to the `SetDomainTypeData.cmd` file for the domain to include all the JAR files included in the EAR file.

Note: The `SVRCP` environment variable is used in the `SetDomainTypeData` script to set the `CLASSPATH` for the java executable.

- On Windows, after the following line:

```
set SVRCP=%SVRCP%;%WLI_DOMAIN_HOME%\wlai
```

add the following JAR files, which are listed in the order required for the CLASSPATH:

```
set SVRCP=%SVRCP%;%WLI_HOME%\adapters\MQ_Adapter\lib\
BEA_MQSERIES_7_1.jar
```

```
set SVRCP=%SVRCP%;C:\Program
files\IBM\MQSeries\Java\lib\com.ibm.mq.jar
```

Note: The path given here is an example. It may vary depending on the location where you install the IBM MQSeries Client or Server.

```
set SVRCP=%SVRCP%;%BEA_HOME%\license.bea
```

```
set system PATH for the mqjbnd04.dll
```

- On UNIX, after the following line:

```
set SVRCP=$SVRCP:$WLI_DOMAIN_HOME/wlai
```

add the following JAR files, which are listed in the order required for the CLASSPATH:

```
SVRCP=$SVRCP:$WLI_HOME/adapters/MQ_Adapter/lib/
BEA_MQSERIES_7_1.jar
```

```
SVRCP=$SVRCP:/ProgramFiles/IBM/MQSeries/Java/lib/com.ibm.mq.
jar
```

Note: The path given here is an example. It may vary depending on the location where you install the IBM MQSeries Client or Server.

```
set SVRCP=$SVRCP:$BEA_HOME/license.bea
```

Note:

- a. Copy the BEA_MQSERIES_7_1.jar file in the following directories:

For UNIX, in \$WLI_HOME/adapters/MQ_Adapter/lib/

For Windows, in %WLI_HOME%\adapters\MQ_Adapter\lib\

- b. You can set the path for mqjbnd04.dll file only if MQSeries Client for Java installation is present for the specified UNIX system. In this case, the file name (mqjbnd04.dll) will be different.

4. Save the file and close it.

Step 5. Update the BEA License

The BEA WebLogic Adapter for MQSeries cannot be used without a valid software license. If you have downloaded the adapter for evaluation, you must obtain an evaluation license as described on the adapter download page. If you have purchased a license for the adapter, the license file is typically sent to you as an e-mail attachment.

When you have obtained a valid license for the adapter, update your `license.bea` file by completing the following steps:

1. Save the license file that you obtained with a name other than `license.bea`, in the `BEA_HOME` directory. For example, save the file as `mqseries_adapter_license.bea`. Use this file as the `license_update_file` in step 4. of this procedure.

Warning: Do not overwrite or change the name of the existing `license.bea` file.

2. Perform the step appropriate for your platform:
 - On a Windows system, open an MS-DOS session and go to the `BEA_HOME` directory.
 - On a UNIX system, go to the `BEA_HOME` directory.
3. If it is not already included, add the JDK to your `PATH` variable by executing the command appropriate to your system:
 - On a Windows system:
`set PATH=BEA_HOME\jdk131\bin;%PATH%`
 - On a UNIX system:
`PATH=BEA_HOME/jdk131/bin:$PATH`
`export PATH`
4. Update your existing license by executing the command appropriate to your system:
 - On a Windows system:
`UpdateLicense license_update_file`
 - On a UNIX system:
`sh UpdateLicense.sh license_update_file`

Here, `license_update_file` is the name which you saved the license update file in step 1.

5. Save a copy of your updated `license.bea` file in a safe place outside the WebLogic Integration and application installation directories.

Step 6. Deploy the Adapter for MQSeries Using the WebLogic Server Console

After the BEA WebLogic Adapter for MQSeries is installed, it must be deployed to your domain (for example, `wl1domain`), on WebLogic Integration. To configure and deploy an adapter using the WebLogic Server Administration Console, complete the following steps:

1. Start WebLogic Server.
2. Start the WebLogic Server Administration Console in a browser using the following URL:

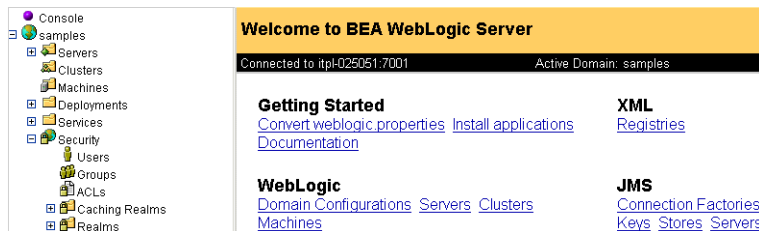
`http://localhost:port/console/`

Here, *localhost* represents the machine on which WebLogic Server is running and *port* represents the listening port.

For example, `http://localhost:7001/console/`

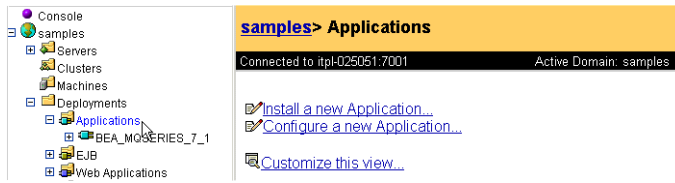
3. Enter the user name and password for the server. The WebLogic Server Console appears.

Figure 1-1 WebLogic Server Console



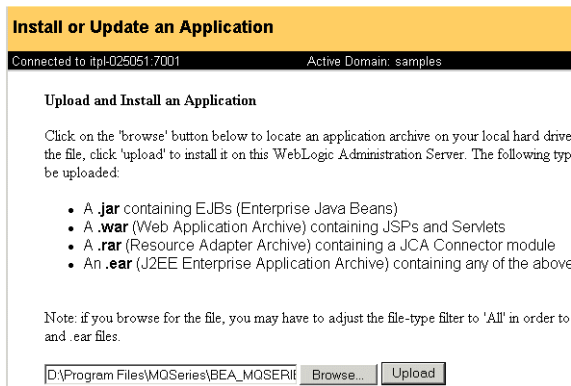
4. In the left pane, choose Deployments→Applications from the navigation tree. The console displays the Applications page.

Figure 1-2 Applications



5. Click the Install a new Application link. The console displays the Install or Update an Application page.

Figure 1-3 Install or Update an Application



6. Click Browse to locate the application archive you selected during installation (BEA_MQSERIES_7_1.ear).
7. Click Upload to upload the BEA_MQSERIES_7_1.ear file. The console displays the application files currently installed to indicate that the upload is complete and the adapter file is deployed to WebLogic Server.

Note: You can verify deployment by doing the following:

- a. In the left pane of the console, choose Deployments→Applications.
- b. Click the BEA_MQSERIES_7_1 link. The configuration details of the file are displayed, along with the deployment status.

Step 7. Create an Adapter Administrative User

A user group, `adapter`, is defined in each domain that supports application integration functionality. Before you create an application view that employs the events or services supported by an adapter, you must add the user name defined for the administrative server to the `adapter` group.

Note: By default, the `adapter` group includes the user `system`. If the user name defined for the administrative server is `system`, skip this step. For example, if you are starting the server in a preconfigured domain, and you have not modified the default administrative server login, you can skip this step. Otherwise, create the administrative server user name and then add it to the `adapter` group.

This section contains the following topics:

- Create the Administrative Server User Name
- Add the Administrative Server User Name to the Adapter Group

Create the Administrative Server User Name

To create the administrative server user name, do the following:

1. In the left pane of the WebLogic Server Administration Console, choose Security→Users. The console displays the Users page, showing the users currently defined for the domain.

Figure 1-4 Users

Users

Connected to localhost:7001 Active Domain: wldomain Jun 10, 2003 5:31:46 PM

Create a New User

Name:

Password:

Confirm Password:

Change a User's Password

Name:

Old Password:

New Password:

Confirm Password:

Delete a User

Name:

[Unlock Users...](#)

Users: [joe](#), [system](#), [guest](#), [hub](#), [wlpisystem](#), [mary](#), [wlcsystem](#), [wlcSamplesUser](#)

2. Enter Name, Password, and Confirm Password. Click Create. The newly created user is added to the Users list at the bottom of the page.

Add the Administrative Server User Name to the Adapter Group

To add the administrative server user name to the adapter group, do the following:

1. In the left pane of the WebLogic Server Administration Console, choose Security→Groups. The console displays groups currently defined for the domain.

Figure 1-5 Groups

samples> Realms> myRealm> Groups

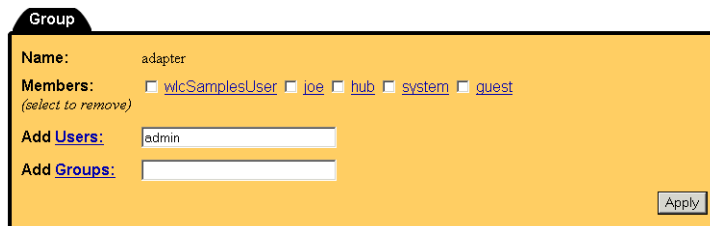
Connected to itpl-025051:7001 Active Domain: samples

[Create a new Group...](#)

Name	Members
ConfigureComponents	admin, joe, mary, wlcsystem, guest, wlpisystem
wlpUsers	admin, joe, system, mary, guest, wlcsystem, wlpisystem
MonitorInstance	admin, joe, mary, wlcsystem, guest, wlpisystem
ExecuteTemplate	admin, joe, mary, wlcsystem, guest, wlpisystem
everyone	joe, system, guest, hub, wlpisystem, mary, wlcsystem, admin

2. Locate and click the link for the adapter group to display the Group Definition page, with existing members if any, as shown in the following figure.

Figure 1-6 Group Definition



The screenshot shows a web form titled "Group" in a dark header. The form has a yellow background and a black border. It contains the following fields and controls:

- Name:** A text field containing the value "adapter".
- Members:** A section with the text "(select to remove)" below it. It contains five checkboxes, each followed by a username: ☐ wlcSamplesUser, ☐ joe, ☐ hub, ☐ system, and ☐ guest.
- Add Users:** A label followed by a text field containing the value "admin".
- Add Groups:** A label followed by an empty text field.
- Apply:** A button located in the bottom right corner of the form.

3. Enter the user name in the Add Users field. If you do not know the name, click the Users link to view the name in the list of existing users.

Note: You should already have created the administrative server user name.

4. Click Apply to add the user name to the group. The name is added to the Members list.

Next Steps

When you have successfully installed and deployed the adapter, you can log on to the WebLogic Integration Application View Console to create application views that employ events and services supported by the BEA WebLogic Adapter for MQSeries.

For more information, see the *BEA WebLogic Adapter for MQSeries User Guide* at <http://edocs.bea.com/wladapters/mq/docs71/index.html>

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