

# BEAWebLogic Adapter for MQSeries®

Installation and Configuration Guide

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# **About This Document**

This document explains how to install and configure the BEA WebLogic Adapter for MQSeries. This document is organized as follows:

- Chapter 1, "Installing the BEA WebLogic Adapter for MQSeries," explains how to install the adapter.
  - Preparing to Install the Adapter
  - Installing the Adapter
  - Next Steps

### **Who Should Read This Documentation**

This document is intended for the following members of an integration team:

- Integration Specialists—Lead the integration design effort. Integration specialists have expertise in defining the business and technical requirements of integration projects, and in designing integration solutions that implement specific features of WebLogic Integration. The skills of integration specialists include business and technical analysis, architecture design, project management, and WebLogic Integration product knowledge.
- Technical Analysts—Provide expertise in an organization's information technology
  infrastructure, including telecommunications, operating systems, applications, data
  repositories, future technologies, and IT organizations. The skills of technical analysts
  include technical analysis, application design, and information systems knowledge.

- Enterprise Information System (EIS) Specialists—Provide domain expertise in the systems that are being integrated using WebLogic adapters. The skills of EIS specialists include technical analysis and application integration design.
- System Administrators—Provide in-depth technical and operational knowledge about
  databases and applications deployed in an organization. The skills of system administrators
  include capacity and load analysis, performance analysis and tuning, deployment
  topologies, and support planning.

#### What You Need to Know

This document assumes that you have an understanding of:

- Web technologies
- WebLogic Integration 8.1
- MQSeries software, system, and environment. This includes understanding of MQSeries tools and configuration as well as processes and data models.
- Your specific MQSeries business needs and applications.

#### Product Documentation on the dev2dev Web Site

BEA product documentation, along with other information about BEA software, is available from the BEA dev2dev Web site:

```
http://dev2dev.bea.com
```

To view the documentation for a particular product, select that product from the list on the dev2dev page; the home page for the specified product is displayed. From the menu on the left side of the screen, select Documentation for the appropriate release. The home page for the complete documentation set for the product and release you have selected is displayed.

#### **Related Information**

Readers of this document may find the following documentation and resources especially useful:

- BEA WebLogic Adapter for MQSeries Release Notes
  - http://edocs.bea.com/wladapters/mq/docs81/pdf/relnotes.pdf
- BEA WebLogic Adapter for MQSeries User Guide

```
http://edocs.bea.com/wladapters/mq/docs81/pdf/user.pdf
```

• Introduction to WebLogic Adapters

```
http://edocs.bea.com/wladapters/docs81/pdf/intro.pdf
```

• BEA WebLogic Adapters 8.1 Dev2Dev Product Documentation

```
http://dev2dev.bea.com/products/product.jsp?highlight=wla
```

• Introducing Application Integration

```
http://edocs.bea.com/wli/docs81/aiover/index.html
```

• Using the Application Integration Design Console

```
http://edocs.bea.com/wli/docs81/aiuser/index.html
```

• BEA WebLogic Integration documentation

```
http://edocs.bea.com/wli/docs81/index.html
```

• BEA WebLogic Platform documentation

```
http://edocs.bea.com/platform/docs81/index.html
```

• Your MQSeries documentation

#### **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 BEA WebLogic Adapter for MQSeries and the version of the documentation.

If you have any questions about this version of BEA WebLogic Adapter for MQSeries, or if you have problems using the BEA WebLogic Adapter for MQSeries, 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.  Indicates that you must press two or more keys simultaneously.	
Ctrl+Tab		
italics	Indicates emphasis or book titles.	
monospace text	Indicates code samples, commands and their options, data structures and their members, data types, directories, and file names and their extensions. Monospace text also indicates text that you must enter from the keyboard.	
	<pre>Examples: #include <iostream.h> void main ( ) the pointer psz chmod u+w * \tux\data\ap .doc tux.doc BITMAP float</iostream.h></pre>	
monospace boldface text	Identifies significant words in code.  Example:  void commit ( )	
monospace italic text	Identifies variables in code.  Example: String expr	

Convention	Item
UPPERCASE	Indicates device names, environment variables, and logical operators.
TEXT	Examples:
	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.
	Example:
	<pre>buildobjclient [-v] [-o name ] [-f file-list] [-l file-list]</pre>
	Separates mutually exclusive choices in a syntax line. The symbol itself should never be typed.
	Indicates one of the following in a command line:
	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.
	Example:
	<pre>buildobjclient [-v] [-o name ] [-f file-list] [-l file-list]</pre>
· ·	Indicates the omission of items from a code example or from a syntax line. The vertical ellipsis itself should never be typed.

# Installing the BEA WebLogic Adapter for MQSeries

This section explains how to install the BEA WebLogic Adapter for MQSeries with WebLogic Integration on both Windows and UNIX systems.

This section contains the following topics:

- Preparing to Install the Adapter
- Installing the Adapter
- Next Steps

**Note:** The BEA WebLogic Adapter for MQSeries supports IBM MQSeries (now known as WebSphere MQ) versions 5.2 and 5.3.

# **Preparing to Install the Adapter**

Before you install the BEA WebLogic Adapter for MQSeries, be sure to complete the following tasks:

- Review the Release Notes.
- Install MQSeries Classes for Java
- Create a JAR File Containing MQSeries Client's PROPERTIES Files

#### Review the Release Notes

The BEA WebLogic Adapter for MQSeries Release Notes contain important information about the software you must install prior to installing the BEA WebLogic Adapter for MQSeries. Also, be sure to check the release notes for information about any required patches for your system. The BEA WebLogic Adapter for MQSeries Release Notes are available at the following URL:

http://edocs.bea.com/wladapters/mg/docs81/index.html

#### Install MQSeries Classes for Java

To interact with IBM MQSeries, you must first install MQSeries classes for Java on the same computer as the BEA WebLogic Adapter for MQSeries. If you are using a local bindings MQ connection, you must install the Adapter for MQSeries on the same machine where the IBM MQSeries Server is installed. For TCP/IP type of MQ Connection, you can install or use the IBM MQSeries Server on any machine on the network.

The MQSeries classes for Java, MA88, is available at the following URL:

http://www-3.ibm.com/software/ts/mgseries/txppacs/ma88.html

# Create a JAR File Containing MQSeries Client's PROPERTIES Files

To meet localization requirements, the MQ message properties files should be present with the adapter at run time. To ensure this, create a JAR file by bundling the properties files available in the lib directory of the MQSeries Client for Java installation. You can name this JAR file whatever you wish. For example, mq\_properties.jar. The default location for the MQSeries Client for Java installation is C:\Program Files\IBM\MQSeries\Java\lib.

## Understanding the Representation of Paths

When you install WebLogic Integration, you specify the locations for files. Some of these files are required by the adapter. This document uses the following conventions to represent the locations of these files.

- BEA\_HOME represents the BEA Home directory of your WebLogic installation. For example:
  - If you install the product in the default location on a Windows system, BEA\_HOME represents c:\bea.
  - If you install the product in the default location on a UNIX system, BEA\_HOME represents /usr/local/bea.
- WLI\_HOME represents the root of your WebLogic Integration installation. For example:
  - If you install WebLogic Integration in the default location on a Windows system,
     WLI\_HOME represents c:\bea\weblogic81\integration.
  - If you install WebLogic Integration in the default location on a UNIX system,
     WLI\_HOME represents /usr/local/bea/weblogic81/integration.
- domain is used to indicate the name of a domain.

You use the Configuration Wizard to create custom user domains. When you set up the domain configuration with the Configuration Wizard, you must specify a domain name, <code>domain</code>. You must also indicate where the directory associated with this domain is created. This directory contains files required for that domain. To learn more about the Configuration Wizard, see *Creating WebLogic Configurations Using the Configuration Wizard* which is available at the following URL:

http://edocs.bea.com/platform/docs81/confgwiz/index.html

For example, if you accept the Configuration Wizard default location on a Windows system, <code>BEA\_HOME\user\_projects\domain</code>, the files required by the administration server are installed in the following directory:

BEA\_HOME\user\_projects\domains\domain

If you accept the Configuration Wizard default location on a UNIX system, BEA\_HOME/user\_projects/domain, the files required by the administration server are installed in the following directory:

BEA\_HOME/user\_projects/domains/domain

• DOMAIN\_HOME represents the complete path to the root of a domain.

For example, if you use the Configuration Wizard to create a domain in the default location on a Windows system, <code>DOMAIN\_HOME</code> represents

c:\bea\weblogic81\user\_projects\domains\domain.

If you use the Configuration Wizard to create a domain in the default location on a UNIX system, <code>DOMAIN\_HOME</code> represents

/usr/local/bea/weblogic81/user\_projects/domains/domain.

**Note:** *WLI\_HOME* and *BEA\_HOME* (italicized) 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.

# **Installing the Adapter**

This section explains how to install the BEA WebLogic Adapter for MQSeries with WebLogic Integration. It includes the following steps:

- Step 1. Obtain the BEA WebLogic Adapter for MQSeries
- Step 2. Configure the Domain
- Step 3. Extract the Adapter Files and Change the WebLogic Script
- Step 4. Update the BEA License
- Step 5. Deploy the Adapter
- Step 6. Create an Adapter Administrative User

# Step 1. Obtain the BEA WebLogic Adapter for MQSeries

To obtain the EAR file containing the BEA WebLogic Adapter for MQSeries software (BEA\_MQSERIES\_8\_1.ear), do one of the following:

- Download the file from the following URL:
  - http://commerce.bea.com/products/weblogicadapters/wl\_adapter\_home.jsp
- Obtain the software on CD.

# Step 2. Configure the Domain

You must deploy the BEA WebLogic Adapter for MQSeries in a domain that supports application integration functionality. You can create one of your own, or use the sample integration domain. The sample integration domain is:

- On Windows: BEA\_HOME\weblogic81\samples\domains\integration
- On UNIX: BEA\_HOME/weblogic81/samples/domains/integration

If you have not already done so, use the Configuration Wizard to create the domain using the Integration domain template.

To learn more about the Configuration Wizard, see the *Creating WebLogic Configurations Using the Configuration Wizard* at the following URL:

http://edocs.bea.com/platform/docs81/confgwiz/index.html

# Step 3. Extract the Adapter Files and Change the WebLogic Script

This section explains how to extract the BEA WebLogic Adapter for MQSeries files and edit your WebLogic script to add jar files to the CLASSPATH, and adjust the PATH.

**Note:** For WebLogic Integration 8.1 SP2, the script file you edit is setDomainEnv.cmd or setDomainEnv.sh. For versions of WebLogic Integration, earlier than 8.1 SP2, the file name is startWeblogic.cmd or startWeblogic.sh.

Set the classpath using the procedure appropriate for your system:

- Extracting Files and Adjusting the Classpath for Windows
- Extracting Files and Adjusting the Classpath for UNIX

#### Extracting Files and Adjusting the Classpath for Windows

To extract the BEA WebLogic Adapter for MQSeries files and edit the WebLogic script:

- 1. Use WinZip (or a similar file extracting product) to extract the BEA\_MQSERIES\_8\_1.ear file to a directory of your choice (for example, BEA\_HOME\adapters\mqseries).
- 2. Go to the root directory for your domain:

```
cd DOMAIN HOME
```

**Note:** You must choose a domain that supports application integration functionality.

- 3. Open the script file with an ASCII editor. For WebLogic Integration 8.1 SP2, the file is setDomainEnv.cmd. For earlier versions of WebLogic Integration, the file is startWeblogic.cmd.
- 4. In the script file, create a new variable MQ\_JAVA, and initialize it as shown here:

```
set MO JAVA=C:\Program Files\IBM\MOSeries\Java\lib
```

**Note:** This path assumes the default MQSeries installation directory. It may vary if you install the IBM MQSeries Client in a different location.

5. Locate the following command in the script file:

```
set CLASSPATH=%ARDIR%\ant\ant.jar;%JAVA_HOME%\jre\lib\rt.jar
```

6. Immediately *after* this command line, insert the following command line:

```
set CLASSPATH=%CLASSSPATH%;%MQ_Java%\com.ibm.mq.jar;
%MQ_Java%\mq_properties.jar
```

7. Set the PATH to the directory where mgjbnd04.dl1 is located, as shown below:

```
set PATH=%PATH%;%MO Java%
```

8. Save your changes and close the script file.

#### Extracting Files and Adjusting the Classpath for UNIX

After you have installed MQSeries Server and MQSeries Client, create two environment variables and set the path as shown here:

```
CLASSPATH=/opt/mqm/java/lib/com.ibm.mq.jar:/opt/mqm/java/lib
LD_LIBRARY_PATH=/opt/mqm/lib:/opt/mqm/java/lib
```

**Note:** /opt/mgm is the default directory where the MQSeries Server is installed and /opt/mgm/java is the default directory where the MQSeries Client is installed.

To extract the BEA WebLogic Adapter for MQSeries files and edit the WebLogic script:

- 1. Use jar (or another similar extracting product) to extract BEA\_MQSERIES\_8\_1.ear to a directory of your choice (for example, BEA\_HOME/adapters/mgseries).
- 2. Go to the root directory for your domain:

```
cd DOMAIN_HOME
```

**Note:** You must choose a WebLogic Integration domain that supports application integration functionality.

- 3. Open the WebLogic script file with an editor. For WebLogic Integration 8.1 SP2, the file is setDomainEnv.sh. For earlier versions of WebLogic Integration, the file is startWeblogic.sh.
- 4. Find the following command in the script file:

```
CLASSPATH="${ARDIR}/ant/ant.jar:${JAVA_HOME}/jre/lib/rt.jar"
```

5. Modify this command line as shown here:

```
CLASSPATH="${CLASSPATH}:${ARDIR}/ant/ant.jar:
${JAVA_HOME}/jre/lib/rt.jar"
```

6. Add the tools.jar to your CLASSPATH, as follows:

```
CLASSPATH="${CLASSPATH}:${ARDIR}/ant/ant.jar:
${JAVA_HOME}/lib/tools.jar"
```

7. Find the following command in the script file:

```
PATH="${WL_HOME}/server/bin:$PATH"
```

8. Modify this command line as shown here:

```
PATH="${LD_LIBRARY_PATH}:${WL_HOME}/server/bin:$PATH"
```

9. Save your changes and close the script file.

## Step 4. Update the BEA License

In order to use the BEA WebLogic Adapter for MQSeries you must have a valid software license. If you have downloaded the adapter for evaluation, see the instructions on the adapter download page to obtain an evaluation license. If you have purchased a license for the adapter, you should receive the license file as an e-mail attachment. Once you have the license file for the adapter, you must update your license. bea file to include the new information for the adapter.

To update your license.bea file:

Save the adapter license file in the BEA\_HOME directory. To avoid overwriting your
license.bea file, use a name other than license.bea. For example, save the file as
mqseries\_adapter\_license.bea. The adapter license file is the license\_update\_file
referred to in step 4 of this procedure.

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

- 2. Go to the BEA\_HOME directory:
  - 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. Add the JDK to your PATH variable. If it is already included, skip to step 4.
  - On a Windows system:

```
set PATH=BEA_HOME\jdk141_03\bin; %PATH%
```

- On a UNIX system:

```
PATH=BEA_HOME/jdk141_03/bin:$PATH export PATH
```

- 4. Merge the adapter license file into your existing license:
  - 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 of the adapter license file you saved in step 1.

Save a backup copy of your updated license.bea file. This backup location should be a safe place that is neither the WebLogic Integration nor the application installation directories.

# Step 5. Deploy the Adapter

After you have installed the BEA WebLogic Adapter for MQSeries, you must deploy it to your domain.

To deploy the adapter:

1. Start WebLogic Server in your domain.

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

http://host:port/console

#### Where.

- host represents the machine on which WebLogic Server is running
- port represents the listening port.

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

3. Enter the user name and password for the server.

The WebLogic Server Administration Console appears.



- 4. In the left pane, expand the Deployments node.
- 5. Under the Deployments node, click the Applications node.

The Administration Console displays the Applications window.

An application is a JZEE application or Web Service contained in an Enterprise Application Archive (EAR) file or exploded EAR directory. Individual components contained in a JZEE application can be deployed to one or more target servers or clusters.	
This Applications page displays key information about the EAR files or exploded EAR directories that have been configured for deployment in this WebLogic Server domain.	
	Click to deploy a
Customize this view	new application

6. Click the Deploy a new Application link.

The Administration Console displays the Deploy an Application window.



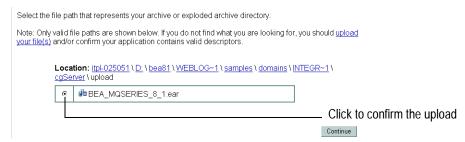
7. Click the upload your files(s) link.

The Administration Console displays the Install or Update an Application window.



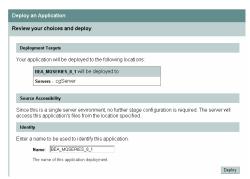
8. Click the Browse button, navigate to the directory in which the BEA\_MQSERIES\_8\_1.ear file resides, and then click the Upload button.

The Administration Console prompts you to confirm the uploaded application.



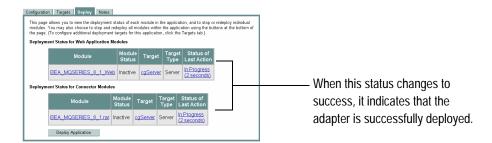
9. Click the radio button next to the application file and then click Continue.

The Administration Console uploads the file and displays the Deploy an Application window (specifying the default target server).



10. Click the Deploy button.

The Administration Console deploys the application and displays its deployment status.



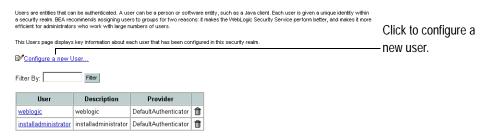
# Step 6. Create an Adapter Administrative User

If you want to manage security for the BEA WebLogic Adapter for MQSeries, you can create an administrative user (such as mqseriesAdapterAdmin) who is authorized to log in to the Application View Console, create application views, configure services and events, deploy, and test. This adapter administrator also needs to be added to the Administrators group.

To create a new adapter administrative user:

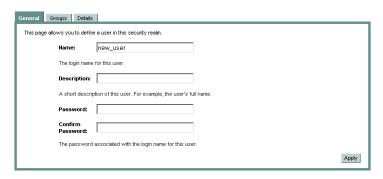
- 1. In the left pane of the WebLogic Server Administration Console, click the Security node.
- 2. In the left pane, click the Realms node.
- 3. In the left pane, click the name of the realm for which you want to configure security.
- 4. In the left pane, click Users.

The Users page appears.



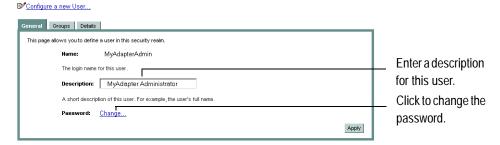
5. Click the Configure a New User link.

The Create User page appears.



6. Enter the user name, description, and password, and then click the Apply button. The password must be at least eight characters long.

The User page appears.



7. Click the Groups tab.

The Groups page appears.

Configure a new User...

General Groups Details

Tris page allows you to select the groups to which this user belongs.

Possible Groups

Apply

Apply

Apply

- 8. In the Possible Groups list, select Administrators and click the right arrow to add the Administrators group to the list of current groups.
- 9. Click the Apply button.
- 10. In the left pane, click the Users node and confirm that the user you created appears in the list of users.

# **Next Steps**

After you have successfully installed and deployed the BEA WebLogic Adapter for MQSeries, you can begin integrating with your MQSeries system using the adapter and BEA WebLogic Integration. To learn more about integrating with MQSeries, see the *BEA WebLogic Adapter for MQSeries User Guide* at the following URL:

http://edocs.bea.com/wladapters/mq/docs81/index.html

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