

BEA WebLogic Adapter for MQSeries

Installation and Configuration Guide for WebLogic Integration 7.0

Release 7.0 with Service Pack 1
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N/A	December 2002	7.0 with Service Pack 1

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About This Document

About This Document

This document explains how to install the BEA WebLogic Adapter for MQSeries, which is used to develop client-server interfaces between MQSeries and other Web applications. It describes how to install the BEA WebLogic Adapter for MQSeries with WebLogic Integration 7.0.

This document is organized as follows:

Chapter 1, "Installing the Adapter With WebLogic Integration 7.0," provides the information you need before installing the BEA WebLogic Adapter for MQSeries, and describes how to install the adapter with WebLogic Integration 7.0.

Audience

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 specific focus on message integration. It is assumed that readers know Web technologies and have a general understanding of Microsoft Windows and UNIX systems.

Related Information

The BEA corporate Web site provides all documentation for WebLogic Server and WebLogic Integration. For information about these products, go to http://e-docs.bea.com. Documents that you may find helpful when installing the BEA WebLogic Adapter for MQSeries are:

- BEA WebLogic Adapter for MQSeries User Guide
- BEA WebLogic Adapter for MQSeries Release Notes
- BEA WebLogic Platform 7.0 installation and user documentation, which is available at the following URL:

http://edocs.bea.com/platform/docs70/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 which version of the BEA WebLogic Adapter for MQSeries documentation you are using.

If you have any questions about this version of the BEA WebLogic Adapter for MQSeries, or if you have problems installing and running 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 adapter you are using
- The version of WebLogic Integration 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.	
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.	
	Examples:	
	#include <iostream.h> void main () the pointer psz</iostream.h>	
	chmod u+w *	
	\tux\data\ap	
	.doc	
	tux.doc	
	BITMAP	
	float	
monospace	Identifies significant words in code.	
boldface text	Example:	
	<pre>void commit ()</pre>	

Convention	Item
monospace	Identifies variables in code.
italic text	Example:
Lext	String expr
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.

1 Installing the Adapter With WebLogic Integration 7.0

This section provides instructions for installing the BEA WebLogic Adapter for MQSeries with WebLogic Integration 7.0. It includes the following topics:

- Before Installing the Adapter
- Understanding the Representation of Paths
- Step 1. Obtaining the BEA WebLogic Adapter for MQSeries
- Step 2. Configuring the Domain
- Step 3. Adjusting the Classpath
- Step 4. Updating the BEA License
- Step 5. Deploying the Adapter Using the WebLogic Server Console
- Step 6. Creating or Updating the Adapter Group
- Next Steps

Before Installing the Adapter

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 required prerequisite software installed. The release notes are available at the following URL:

http://edocs.bea.com/wladapters/doc70/mqseries.html

Before Using the Adapter to Interact with MQSeries

To interact with IBM MQSeries (now known as WebSphere MQ) you must first install MQSeries or MQSeries Client on the machine where the BEA WebLogic Adapter for MQSeries will be 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 <code>java/lib</code> directory when you select the JAVA Messaging Component during installation.

Understanding the Representation of Paths

Because the location of files in the WebLogic Integration environment depends on options selected during installation and configuration, the conventions that follow are used throughout to represent paths.

 BEA_HOME represents the 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 7.0 in the default location on a Windows system, WLI_HOME represents c:\bea\weblogic700\integration.

domain is used to indicate the name of a domain.

In WebLogic Integration 7.0, the Configuration Wizard, is used to create custom user domains. When you use the Configuration Wizard to set up the domain configuration stored on the administration server, you are prompted to assign a domain name, <code>domain</code>, and to specify the location to which the <code>domain</code> directory will be installed. The files required by the administration server are installed in the <code>domain</code> directory under the specified location.

For additional information, see *Using the Configuration Wizard* which is available at the following URL:

http://edocs.bea.com/platform/docs70/confgwiz/index.html

For example, if you accept the Configuration Wizard default location, BEA_HOME\user_projects, the files required by the administration server are installed in the following directory:

BEA HOME\user projects\domain

■ DOMAIN_HOME represents the complete path to the root of a domain.

For example, if you use the WebLogic Integration 7.0 Configuration Wizard to create a domain in the default location on a Windows system, <code>DOMAIN_HOME</code> represents <code>c:\bea\weblogic700\user projects\domain</code>.

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.

Step 1. Obtaining the BEA WebLogic Adapter for MQSeries

The BEA WebLogic Adapter for MQSeries software is packaged as an EAR file (BEA_MQSERIES_1_0_70.ear). You can obtain the software on CD or download it from www.bea.com.

Step 2. Configuring the Domain

The adapter can only be deployed in a domain that includes support for Application Integration functionality. If you have not already done so, use the Configuration Wizard to create the domain, and select one of the following domain templates:

- Enterprise application integration (EAI) domain template.
- WebLogic Integration domain template.
- Platform domain template.

For the information you need to configure a fully functional domain based on the template, see the appropriate section of the *Configuration Wizard Template Reference*:

- For the EAI domain template, see the following URL: http://edocs.bea.com/platform/docs70/template/eaidomain.html
- For the WebLogic Integration domain template, see the following URL:

http://edocs.bea.com/platform/docs70/template/wlidomain.html

For the platform domain template, see the following URL: http://edocs.bea.com/platform/docs70/template/platjar.html

For general information about using the Configuration Wizard, see *Using the Configuration Wizard* at the following URL:

http://edocs.bea.com/platform/docs70/confgwiz/index.html

When you use the Configuration Wizard to create a domain that includes support for Application Integration, a domain-specific version of the Database Wizard is installed in the <code>DOMAIN_HOME</code> directory. You must run the Database Wizard for the domain to initialize the database repository with the required tables and system data. For additional information, see "Configuring the Database for a Domain" in *Starting*, *Stopping and Customizing BEA WebLogic Integration*, at the following URL:

http://edocs.bea.com/wli/docs70/config/index.htm

Step 3. Adjusting the Classpath

Set the classpath using the procedure appropriate for your system:

- Adjusting the Classpath for Windows
- Adjusting the Classpath for UNIX

Note: The following procedures reference files that must be obtained from the MA88 SupportPac (if you are using MQSeries 5.1 or 5.2) or from your WebSphere MQ 5.3 distribution. For additional information, see "Before Using the Adapter to Interact with MQSeries" on page 1-2. Be sure you know the location of the required files.

Adjusting the Classpath for Windows

To adjust the classpath on Windows, complete the following steps:

1. Go to the root directory for your domain:

cd DOMAIN_HOME

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

2. Find the Set Domain Type Data. cmd file.

Here, <code>DomainType</code> 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 <code>SetwliDomainData.cmd</code> file.

3. Update the SVRCP environment variable settings in the SetDomainTypeData.cmd file.

Note: The SVRCP environment variable is used in the Set*DomainType*Data script to set the classpath for the java executable.

After the following line:

```
set SVRCP=%SVRCP%;%PBCOMMONCP%
```

add the following JAR files:

```
REM ==== Libraries for MQSeries =====
set SVRCP=%SVRCP%;"D:\Program Files\MQSeries\Java\lib\com.ibm.mq.iiop.jar"
set SVRCP=%SVRCP%;"D:\Program Files\MQSeries\Java\lib\com.ibm.mq.jar"
set SVRCP=%SVRCP%;"D:\Program Files\MQSeries\Java\lib\com.ibm.mqbind.jar"
REM ===== Native Libraries and Localized Properties =====
set SVRCP=%SVRCP%;"D:\Program Files\MQSeries\Java\lib"
```

Here, D:\Program Files\MQSeries\Java\lib is a sample directory in which the required MQSeries classes for Java and JMS are located. For additional information, see "Before Using the Adapter to Interact with MQSeries" on page 1-2.

Note: Depending on the version of the MA88 SupportPac or MQ distribution, the com.ibm.mq.iiop.jar file may be named com.ibm.mqjms.jar.

Adjusting the Classpath for UNIX

To adjust the classpath on UNIX, complete the following steps:

Note: This procedure references files in the MA88 SupportPac. For more information on the MA88 SupportPac, see "Before Using the Adapter to Interact with MQSeries" on page 1-2. Be sure you know the location of the files that are included in the MA88 SupportPac.

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. Find the Set Domain TypeData.cmd file.

Here, <code>DomainType</code> 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 <code>WebLogic</code> Integration functionality, it contains the <code>SetwliDomainData.cmd</code> file.

3. Update the SVRCP environment variable settings in the Set DomainTypeData.cmd file.

Note: The SVRCP environment variable is used in the Set*DomainType*Data script to set the classpath for the java executable.

After the following line:

```
SVRCP=%SVRCP%;%PBCOMMONCP%
```

add the following JAR files:

```
# ===== Libraries for MQSeries =====
SVRCP=$SVRCP:/usr/MQSeries/Java/lib/com.ibm.mq.iiop.jar
SVRCP=$SVRCP:/usr/MQSeries/Java/lib/com.ibm.mq.jar
SVRCP=$SVRCP:/usr/MQSeries/Java/lib/com.ibm.mqbind.jar
# ===== Native Libraries and Localized Properties =====
SVRCP=$SVRCP:/usr/MQSeries/Java/lib
```

Here, /usr/MQSeries/Java/lib is a sample directory in which the required MQSeries classes for Java and JMS are located. For additional information, see "Before Using the Adapter to Interact with MQSeries" on page 1-2.

Note: Depending on the version of the MA88 SupportPac or MQ distribution, the com.ibm.mq.iiop.jar file may be named com.ibm.mqjms.jar.

Step 4. Updating 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.
- 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_03\bin;%PATH%
```

• On a UNIX system:

```
PATH=BEA_HOME/jdk131_03/bin:$PATH export PATH
```

- 4. Merge the license update file into 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 to 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 5. Deploying the Adapter Using the WebLogic Server Console

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

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

```
http://host:port/console/
```

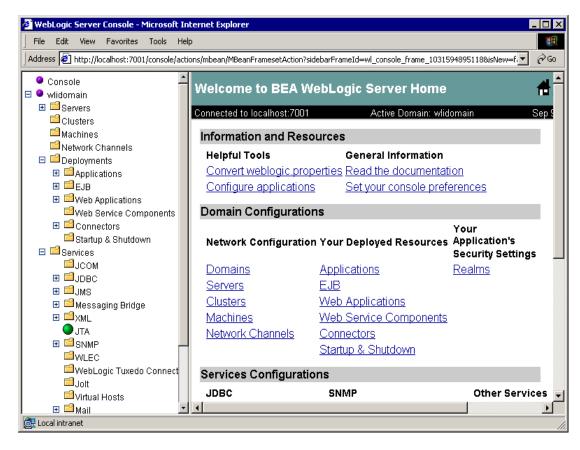
Here, *host* represents the machine on which WebLogic Server is running and *port* represents the listening port.

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

3. When prompted, enter the user name and password for the server.

The WebLogic Server Administration Console opens.

Figure 1-1 WebLogic Server Console



4. In the left pane, choose Deployments and then Applications from the navigation tree.

The console displays the Applications window.

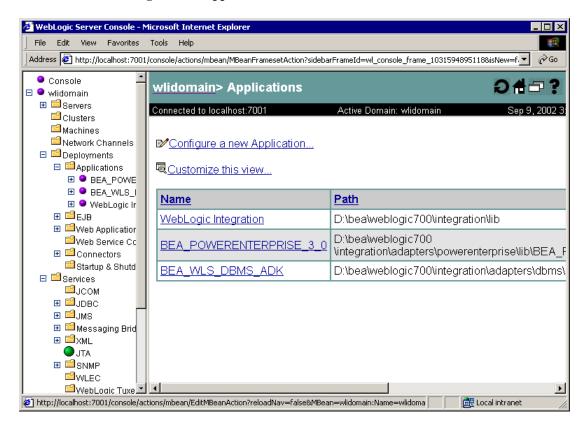


Figure 1-2 Applications Window

5. Click the Configure a new Application link.

The console displays the Locate Application or Component to configure window.

Figure 1-3 Locate Application or Component to Configure Window

Locate Application or Component to configure Connected to localhost:7001 Active Domain: wlidomain This wizard will guide you through the process of configuring and deploying a J2EE application or module. This can be any one of the following types of files: A .jar containing EJBs (Enterprise Java Beans) A .war (Web Application Archive) containing JSPs and Servlets . A .rar (Resource Adapter Archive) containing a JCA Connector module An .ear (J2EE Enterprise Application Archive) containing any of the above Step 1. The lear, war, jar, or rar file you wish to configure and deploy must be available in the Admin servers file system. It may already be there; if it is not, you can either copy it there yourself or <u>upload it through your</u> browser into the directory selected below. Step 2. Select the .ear, .war, .jar, or .rar file you would like to configure and deploy. Note that you may also configure an 'exploded' application or component by simply selecting its root directory. Click on the [select] link to the left of the desired directory or file to choose it and proceed to the next step. Listing of localhost\D:\bea\user projects\wlidomain [Up to parent directory] [select] applications [select] data [select] dblnfo [select] logs [select] myserver [select] scripts [select] userConfig [select] wlai [select] xmlcache

6. Do one of the following:

[select] wliconfig.jar

If you copied the BEA_MQSERIES_1_0_70.ear file to a directory on the administrative server, navigate to that directory. For example, if you copied the file to the D:\bea\AdapterEars directory, select the directory as shown in the following figure.

Figure 1-4 Locating the Adapter EAR File

[Up to parent directory]
[select] BEA_MQSERIES_1_0_70.ear

If you have not copied the BEA_MQSERIES_1_0_70.ear file to a directory on the administrative server, do the following:

a. Navigate to the directory to which the file will be uploaded.

For example, to upload the adapter from your local machine to the D:\bea\AdapterEars directory on the administrative server, select the directory as shown in the following figure.

Figure 1-5 Selecting the Target Directory

[Up to parent directory]

- b. Click the upload it through your browser link to display the Install or Update an Application window.
- c. Click Browse to display the Choose File dialog box.
- d. In the Choose File dialog box, locate the file and then click Open.

The console displays the selected location.

Install or Update an Application Sep 9, 2002 5:01:00 Connected to localhost:7001 Active Domain: wlidomain Upload and Install an Application Click on the 'browse' button below to locate an application archive on the machine from which you are browsing. When you have located the file, click 'upload' to install it on this WebLogic Administration Server. The following types of application files may be uploaded: A .jar containing EJBs (Enterprise Java Beans) A .war (Web Application Archive) containing JSPs and Servlets A .rar (Resource Adapter Archive) containing a JCA Connector module An .ear (J2EE Enterprise Application Archive) containing any of the above Note: if you browse for the file, you may have to adjust the file-type filter to 'All' in order to find .jar, .war, .rar and .ear files. C:\downloads\BEA_MQSERIES_1_0.ear Upload Cancel Browse...

Figure 1-6 Install or Update an Application Window

e. Click Upload.

The browser status bar indicates upload progress. When the upload is complete, you are returned to the Locate Application or Component to configure window. The uploaded file now resides in the directory selected in step a.

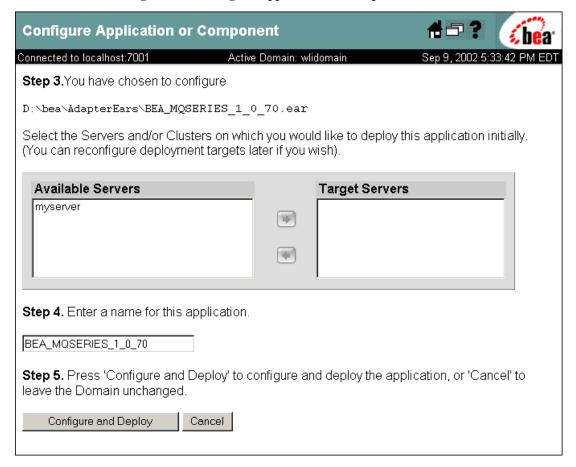
Figure 1-7 Adapter EAR File Uploaded to Administrative Server

Listing of localhost\\\D:\\\bea\\AdapterEars

[Up to parent directory]
[select] BEA MQSERIES 1 0 70.ear

Click the [select] link to the left of the adapter EAR file.
 The console displays the Configure Application or Component window.

Figure 1-8 Configure Application or Component Window



- 8. Select the servers or clusters on which to deploy the adapter by using the arrow buttons to move entries from the available list to the target list.
- 9. You must change the application name from BEA_MQSERIES_1_0_70 to BEA_MQSERIES 1 0.

Note: If you do not change the application name, the adapter will not be available to application views.

The following figure shows a configured application.

Figure 1-9 Configured Application

Configure Application or Co	mponent	4□? (bea			
Connected to localhost:7001	Active Domain: wlidomain	Sep 9, 2002 5:33:42 PM EDT			
Step 3. You have chosen to configur	re				
D:\bea\AdapterEars\BEA_MQSERI	D:\bea\AdapterEars\BEA_MQSERIES_1_0_70.ear				
Select the Servers and/or Clusters on which you would like to deploy this application initially. (You can reconfigure deployment targets later if you wish).					
Available Servers	Target S myserver				
Step 4. Enter a name for this applic	cation.				
BEA_MQSERIES_1_0					
Step 5. Press 'Configure and Deplo leave the Domain unchanged. Configure and Deploy Cancer		he application, or 'Cancel' to			
Configure and Deproy	51				

10. Click Configure and Deploy.

The console displays the deployment status, which includes a description, status, begin time, and end time for the deployed adapter.

Step 6. Creating or Updating the Adapter Group

Before you create an application view that uses the events or services supported by an adapter, the following requirements must be met:

- The user group, adapter, must be defined.
- The administrative server user name must be a member of the adapter group.

The action required to complete the configuration depends on which domain template you selected when you created the domain. See the following table for guidelines.

Table 1-1 Configuration Requirements

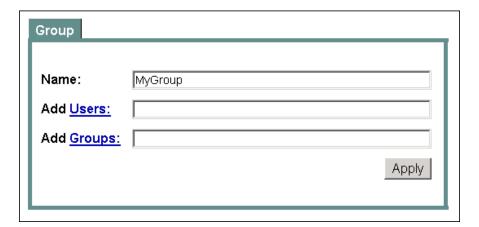
If you created a domain based on the	And the administrative server user name is	Then
Platform domain template	Any value	Create the adapter group and add the administrative user name to it as described in "Creating the Adapter Group" on page 1-18.
WLI or EAI domain template	system	The adapter group is already defined. This group includes the system user name by default. No further configuration is required.
WLI or EAI domain template	A value other than system	The adapter group is already defined. Add the user name to the group as described in "Adding the User Name to the Adapter Group" on page 1-19.

Creating the Adapter Group

To create the adapter group and add the administrative server user name to it, complete the following steps:

- 1. In the left pane of the WebLogic Server Administration Console, choose Compatibility Security, and then choose Groups from the navigation tree.
- 2. Click the Create a New Group link to display the Group window.

Figure 1-10 Group Window



- 3. Enter adapter in the Name field.
- 4. Enter the administrative server user name in the Add Users field.
- 5. Click Apply.

The Group window is updated as shown in the following figure.

Figure 1-11 Group Window



Adding the User Name to the Adapter Group

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

- 1. In the left pane of the WebLogic Server Administration Console, choose Compatibility Security and then Groups from the navigation tree.
 - The console displays the groups currently defined for the domain.
- 2. Locate and click the link for the adapter group to display the group definition.

Figure 1-12 Group Definition



- 3. If the administrative server user name is not included in the Members list, enter the user name in the Add Users field.
- 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.