



BEA WebLogic RFID Edge Server™

Installing WebLogic RFID Edge Server

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Introduction and Roadmap

The following sections describe the audience for and organization of this document:

- “Document Scope and Audience” on page 1-1
- “Guide to This Document” on page 1-1
- “Related Documentation” on page 1-2
- “Samples” on page 1-3

Document Scope and Audience

This document describes how to install the WebLogic RFID Edge Server software on Windows and Linux platforms, and how to perform the initial Edge Server configuration.

The intended audience is system administrators who will install, configure, and administer the WebLogic RFID Edge Server product. The instructions in this manual assume that you have administrative experience with the platform on which you will install the software, and some understanding of RFID technology.

This document is available online at:

http://e-docs.bea.com/rfid/edge_server/docs21/install/index.html.

Guide to This Document

This document is organized as follows:

- This chapter, [Introduction and Roadmap](#), describes the scope of this document and related information.
- [“Preparing for Your Installation,”](#) provides the basic information you need to know before installing your BEA software.
- [“Starting the Installation Program,”](#) describes how to start the installation program in graphical and console modes on Windows and Linux platforms.
- [“Running the Installation Program in Graphical Mode,”](#) describes how to install your BEA software on Windows and Linux platforms by using a Java-based graphical user interface (GUI).
- [“Running the Installation Program in Console Mode,”](#) discusses how to install your BEA software on Windows and Linux platforms by using a text-based interface.
- [“Installing and Updating License Files,”](#) describes available license types and explains how to update your license file.
- [“Post-Installation Information,”](#) provides sections that deal with common post-installation tasks, such as running the configuration wizard, testing the installation, and backing up and restoring an Edge Server.
- [“Configuring WebLogic RFID Edge Server,”](#) provides specific procedures for configuring Edge Server features; for example, configuring readers, data persistence, and HTTP and JMS notification drivers.
- [“Uninstalling the Software,”](#) provides procedures for uninstalling your BEA software in graphical and console modes.

Related Documentation

This install guide is part of the WebLogic RFID Edge Server documentation set, which also includes the following documents:

- [Using the RFID Edge Server Administration Console](#) describes how to use the RFID Administration Console to configure ECSpecs, ECReports, RFID devices, filters, and workflows.
- [Using the Reader Simulator](#) describes how to use the reader simulator software included with RFID Edge Server. The Reader Simulator minimally simulates a ThingMagic Mercury4 RFID reader.

- [Programming with the ALE and ALEPC APIs](#) describes the Application Level Events (ALE) and ALEPC programming interfaces (APIs) that you use to create applications that interact with WebLogic RFID Edge Server by reading and writing Electronic Product Code (EPC) tags.
- [RFID Reader Reference](#) describes how to configure the RFID devices supported by RFID Edge Server.
- [RFID Workflow Reference](#) describes how to configure and use the workflow modules included with WebLogic RFID Edge Server.
- [ALE and ALEPC Javadoc](#) provides reference documentation for the ALE and ALEPC Java packages that are provided with the WebLogic RFID Edge Server software.

Samples

If you install the RFID Sample Code component, the following programming samples are installed in the `RFID_EDGE_HOME/samples` directory, where `RFID_EDGE_HOME` represents the product installation directory:

- `ImmediateProgramSample`

An example of how to use the ALEPC API to program an Electronic Product Code (EPC) value into a tag using a specified logical reader. The programming cycle specification is read from an XML file, and the programming cycle reports are printed as XML.

- `ImmediateSample`

An example of how to use the ALE API to retrieve a list of Electronic Product Code (EPC) tags from a specified logical reader. The event cycle specification is read from an XML file, and the event cycle reports are printed as XML.

- `JMSSamples`

Vendor-specific JMS examples for:

- BEA
- IBM
- Sun
- JBoss
- TIBCO

- `NonXMLSample`

An example of how to use the ALE API to retrieve a list of EPC tags from a specified tag reader. The `immediate()` method of the ALE client interface is used to perform the tag read operation.

- `PollingSample`

An example of how to define an event cycle specification (ECSpec) and use it to `poll()` the edge server for tag updates.

- `ProgrammingSample`

An example of how to define a programming cycle specification (PCSpec) by reading it from an XML-formatted file, how to administer an EPC cache in the edge server, and how to invoke tag programming operations.

- `SubscribeSample`

An example of how to define an event cycle specification (ECSpec) by reading it from an XML-formatted file, and how to set up a handler that subscribes to event cycle completion notifications.

- `Workflow`

XML samples for use with the examples provided in the [Configuring and Using Workflows](#) section of the *Workflow Reference* manual.

Preparing for Your Installation

The following sections provide information that you need to know before installing your BEA WebLogic RFID Edge Server software:

- [“Installation Overview”](#) on page 2-1
- [“Product Installation Components”](#) on page 2-2
- [“Product Distribution Methods”](#) on page 2-3
- [“Installation Prerequisites”](#) on page 2-3
- [“Selecting Directories for Your Installation”](#) on page 2-7
- [“Choosing the Type of Installation”](#) on page 2-10
- [“Generating a Verbose Installation Log”](#) on page 2-11

Installation Overview

The WebLogic RFID Edge Server installation program provides a complete framework for the installation and uninstallation of the RFID Edge Server software product.

When you install the software on Windows and Linux 32-bit platforms, two JDKs are installed on your system: the JRockit JDK, optimized for server-side applications, and the Sun Java 2 JDK (including the Hotspot Client and Hotspot Server JVMs), provided for optional use by both client-side and server-side applications.

The WebLogic RFID Edge Server installation program can be used in the following modes:

- *Graphical mode*

Graphical-mode installation is an interactive, GUI-based method for installing your software. It can be run on Windows and Linux systems that support a Java-based GUI. See [Chapter 4, “Running the Installation Program in Graphical Mode.”](#)

Note: In order to run a graphical-mode installation, the console attached to the machine on which you are installing the software must support a Java-based GUI. All consoles for Windows systems support Java-based GUIs, but not all consoles for Linux systems do. If you attempt to start the installation program in graphical mode on a system that cannot support a graphical display, the installation program automatically starts console-mode installation.

- *Console mode*

Console-mode installation is an interactive, text-based method for installing your software from the command line, on either a Linux system or a Windows system. See [Chapter 5, “Running the Installation Program in Console Mode.”](#)

Product Installation Components

Using the complete installation program, you install the following components on your system:

- WebLogic RFID Edge Server—Interacts with RFID readers and reads and writes tag data through the Application Level Event (ALE) and ALE Programming Cycle (ALEPC) APIs. Managed by the RFID Administration Console.
- RFID Administration Console—Provides remote administration and monitoring of RFID Edge Servers and their readers.
- Reader Simulator—Stand-alone application that partially simulates a ThingMagic Mercury4 reader with two UHF antennas.
- RFID Sample Code—The RFID Examples server and API examples provide Java source code that illustrates how to program to the ALE API.
- Common components — BEA product components that are not specific to WebLogic RFID Edge Server. The following components are always installed in `BEA_HOME`:
 - The two JDKs (Windows and Linux 32-bit systems only): BEA JRockit 5.0 JDK and the Sun Java 2 5.0 JDK
 - The `license.bea` file and the `UpdateLicense` command
 - The `registry.xml` file

- The `log` and `utils` directories
- Documentation— The *WebLogic RFID Edge Server Installation Guide* (this document). If this document is updated after the release has shipped, the updated version will be available at: http://e-docs.bea.com/rfid/edge_server/docs21/install/index.html.

Product Distribution Methods

Your BEA software is distributed on both the BEA Web site and CD-ROM.

Web Distribution

You can download your software from the BEA Web site at <http://commerce.bea.com>.

CD-ROM Distribution

If you purchased your software from your local sales representative, you will find the following items in the product box:

- CD-ROMs containing the product software for Windows and Linux
- *BEA Software License and Limited Warranty* pamphlet

Installation Prerequisites

Make sure you meet the following requirements before installing the RFID Edge Server software:

- “System Requirements” on page 2-3
- “Temporary Disk Space Requirements” on page 2-4
- “Administrator Privileges (Windows)” on page 2-5
- “Licensing Requirements” on page 2-6
- “Supported RFID Readers” on page 2-6

System Requirements

The system requirements for your installation are given in [Table 2-1](#).

Table 2-1 System Requirements

Component	Requirement
Platform configuration	A supported configuration of hardware and operating system is required. See <i>Supported Configurations</i> at: http://e-docs.bea.com/rfid/edge_server/docs21/supp_configs/index.html
Processor	1-GHz CPU recommended.
Hard disk drive	A complete installation requires approximately 235 MB of disk space (Windows) or 270 MB of disk space (UNIX).
Memory	1 GB of RAM minimum.
Color bit depth display and size	For graphical user interface (GUI) mode installation, 8-bit color depth (256 colors) is required. For console-mode installation, there is no color bit depth requirement.
JDK	The BEA Products installation program requires a Java run-time environment (JRE) to run. A JRE is bundled in the Windows installation program and in some Linux installation programs (those with filenames ending in <code>.bin</code>). For other Linux platforms, the installation program does not install a JDK. Filenames for these installation programs end in <code>.jar</code> . To run the <code>.jar</code> installation programs, you must have the appropriate version of the JDK installed on your system, and include the <code>bin</code> directory of the JDK at the beginning of the <code>PATH</code> variable definition. It is important that you use a JDK because the installation process assigns values to <code>JAVA_HOME</code> and related variables to point to the JDK directory.

Temporary Disk Space Requirements

The BEA installation program uses a temporary directory into which it extracts the files necessary to install the software on the target system. The extracted files are deleted from the temporary directory at the end of the installation process.

By default, the installation program uses the following temporary directories:

- Windows platforms—directory referenced by the `TMP` system variable
- Linux platforms—system-dependent temporary directory

Note: If you do not have enough temporary space to run the installation program, you are prompted to specify an alternate directory or exit the installation program.

To make sure that you have adequate temporary space, you can allocate an alternate directory for this purpose, as indicated in [Table 2-2](#).

Table 2-2 Allocating Alternate Directory to Meet Temporary Disk Space Requirements

Operating System	Instructions
Windows (requires approximately 205 MB of temporary disk space)	<p>Do one of the following:</p> <ul style="list-style-type: none"> • Set the <code>TMP</code> system variable to a directory of your choice. • If starting the installation program from the command line, include the <code>-Djava.io.tmpdir=tmpdirpath</code> option, replacing <code>tmpdirpath</code> with the full path of the directory that you want to designate as a temporary storage area for the BEA Products installation program. For example: <pre>rfid_edge210_win32.exe -mode=console -Djava.io.tmpdir=D:\Temp</pre>
Linux (requires approximately 220 MB of temporary disk space)	<p>Enter the following option on the command line when you start the installation program:</p> <pre>-Djava.io.tmpdir=tmpdirpath</pre> <p>Here, <code>tmpdirpath</code> is the full path of the directory that you want to designate as a temporary storage area for the BEA installation program.</p>

Administrator Privileges (Windows)

On Windows systems, Administrator privileges are required to create Start menu shortcuts in the All Users folder.

When you install the software as a user with Administrator privileges, you have the option to create the Start menu shortcuts in the All Users folder, or in the Local user's Start menu folder. [Table 2-3](#) describes the options available.

Table 2-3 User Access Options (Windows)

If you select . . .	The following occurs . . .
All Users	All users registered on the machine are provided with access to the installed software. Subsequently, if users without Administrator privileges use the Configuration Wizard from this installation to create domains, Start menu shortcuts to the domains are not created. In this case, users can manually create shortcuts in their local Start menu folders, if desired.
Local user	Other users registered on this machine will not have access to the Start menu entries for this installation.

If a user without Administrator privileges installs the software, the Start menu entries are created in the user’s local Start menu folder.

Licensing Requirements

Your BEA software cannot be used without a valid license. When you install your software, the installation program installs an evaluation license (`license.bea`) into the BEA Home directory, to allow you to start using the product immediately.

To use your software in a full-scale production environment, you must purchase a production license (either *express* or *premium*). To find out how to do so, make contact with your sales representative or visit the BEA corporate Web site at <http://www.bea.com>.

For more information about evaluation and production licenses, see “[About BEA Product Licenses](#)” on page 6-1.

Customers who have installed a pre-2.0 version of the WebLogic RFID Edge Server software (marketed as RFTagAware™) can call BEA customer support for assistance in upgrading to the current version. Mention that you are an existing RFTagAware customer who is upgrading to WebLogic RFID Edge Server; doing so will help ensure that your request for assistance is routed to the correct people within customer support.

Supported RFID Readers

You need one or more RFID readers to use WebLogic RFID Edge Server. A list of supported readers is provided in the [RFID Reader Reference](#). Some readers may require specific configuration prior to use with WebLogic RFID Edge Server. The [RFID Reader Reference](#) also

provides some configuration details for supported readers. Also see [“Configuring Readers” on page 8-2](#).

If you do not have an RFID reader, you can use the reader simulator provided with RFID Edge Server. The reader simulator runs on any workstation. Out of the box, it provides a minimal simulation of a ThingMagic Mercury4 reader; with minor configuration it can provide a minimal simulation of a Printronix printer. The reader simulator is useful for software evaluation, application development, and debugging. For information about the default configuration of the Reader Simulator, see [“Reader Simulator Configuration” on page 8-10](#); for information about configuring and using the reader simulator, see *Using the Reader Simulator*.

Selecting Directories for Your Installation

During the installation process, you need to specify locations for the following directories:

- [“Choosing a BEA Home Directory” on page 2-7](#)
- [“Choosing a Product Installation Directory” on page 2-10](#)
- [“Understanding the Functions of the BEA Home Directory” on page 2-8](#)
- [“Creating Multiple BEA Home Directories” on page 2-9](#)

Choosing a BEA Home Directory

When you install your BEA software, you are prompted to specify a BEA Home directory. This directory serves as a repository for common files that are used by multiple BEA products installed on the same machine. For this reason, the BEA Home directory can be considered a central support directory for all the BEA products installed on your system.

The files in the BEA Home directory are essential to ensuring that BEA software operates correctly on your system. They perform the following types of functions:

- Ensure that licensing works correctly for the installed BEA products
- Facilitate checking of cross-product dependencies during installation
- Facilitate Service Pack installation

Although the default location for the product installation directory is within the BEA Home directory, you can select a different location outside the BEA Home directory.

During installation of your BEA software, you are prompted to choose an existing BEA Home directory or specify a path to create a new BEA Home directory. If you choose to create a new directory, the installation program automatically creates it for you.

Note: You can install only one instance of each version of a BEA product in a single BEA Home directory. For example, you can install only one instance of WebLogic Server 9.1 in a BEA Home directory, but that BEA Home directory may also contain an instance of WebLogic Server 9.0.

Understanding the Functions of the BEA Home Directory

Table 2-4 describes the files and directories in the BEA Home directory.

Table 2-4 BEA Home Directory Description

Component	Description
<code>jdkxxx</code> directory	Contains the software for the Sun JDK if it is installed with your software. The JDK provides the Java run-time environment (JRE) and tools for compiling and debugging Java applications. In this directory name, <code>xxx</code> indicates the version of the Sun JDK installed on your system, for example <code>jdk150_06</code> .
<code>jrockit90_xxx</code> directory (Windows and Linux only)	Contains the software for the BEA JRockit JDK if it is installed with your software. The JDK provides the Java run-time environment (JRE) and tools for compiling and debugging Java applications. In this directory name, <code>xxx</code> indicates the version of the JRockit JDK installed on your system, such as <code>jrockit90_150_04</code> .
<code>license.bea</code> file	An XML file that contains the license keys for all the BEA products installed in the BEA Home directory. Licenses are release-specific. To update your <code>license.bea</code> file for additional features, see “Updating Your license.bea File” on page 6-3 . Note: Do not edit the <code>license.bea</code> file manually. Doing so may cause operating problems for the currently installed BEA products, or result in problems later when BEA products are installed for maintenance upgrades.
<code>logs</code> directory	Contains a history file of installation and uninstallation for the BEA Home directory.

Table 2-4 BEA Home Directory Description (Continued)

Component	Description
<code>registry.xml</code> file	<p>A registry file that contains a persistent record of all BEA products installed on the target system. This registry contains product-related information, such as version number, service pack number, and location of the installation directory.</p> <p>Note: Do not edit this file manually. Doing so may cause operating problems for the currently installed BEA products, or result in installation problems when future BEA products or maintenance upgrades are installed.</p> <p>See “Using the BEA Registry API” in <i>ISV Partners’ Guide</i> at the following URL: http://e-docs.bea.com/common/docs91/isv/detect.html</p>
<code>rfid_edgexxx</code> directory	<p>The directory containing the WebLogic RFID Edge Server software. In this directory name, xxx indicates the version of the WebLogic RFID Edge Server installed on your system; for example, <code>rfid_edge21</code>. (You are not required to place the product installation directory under the BEA Home directory. See “Choosing a Product Installation Directory” on page 2-10.)</p>
<code>UpdateLicense (.cmd/.sh)</code>	<p>A command file (Windows) or a shell script (Linux) that updates the current <code>license.bea</code> file with new license sections. The result is a merged license that contains both the existing and new license sections. See “Updating Your <code>license.bea</code> File” on page 6-3.</p>
<code>utils</code> directory	<p>Contains utilities that support the installation of all BEA products installed in this BEA Home directory. The <code>utils.jar</code> file contains code that supports the <code>UpdateLicense</code> utility.</p>

Creating Multiple BEA Home Directories

Although it is possible to create more than one BEA Home directory, it is recommended that you avoid doing so. In almost all situations, a single BEA Home directory is sufficient. There may be circumstances, however, in which you prefer to maintain separate development and production environments, with a separate product stack for each. With two directories, you can update your development environment (in a BEA Home directory) without modifying the production environment until you are ready to do so.

Choosing a Product Installation Directory

The product installation directory contains all software components that you choose to install on your system, including program files and examples. You are prompted during your initial installation to choose a product installation directory. If you accept the default on a Windows system, for example, your software is installed in the following directory:

```
C:\bea\rfid_edgexx
```

Here, `C:\bea` is the BEA Home directory (`BEA_HOME`) and `rfid_edgexx` is the product installation directory for the RFID Edge Server software, referred to in this document as `RFID_EDGE_HOME`. However, you can specify any name and location on your system for your product installation directory; there is no requirement that you name the directory or create it under the BEA Home directory.

Choosing the Type of Installation

The installation program provides two initial types of installation: complete and custom, and the ability to add components that were not installed during an initial custom installation:

- [“Complete Installation” on page 2-10](#)
- [“Custom Installation” on page 2-10](#)
- [“Adding Components” on page 2-11](#)

Complete Installation

In a complete installation, the software installed includes all the components listed in [“Product Installation Components” on page 2-2](#).

The complete installation places all the components on a single machine, sets the configuration parameters accordingly, and provides documentation and sample code that demonstrate the use of the Java API and ECSpec and PCSpec syntax.

Custom Installation

You can choose which software components to install on your system. See [“Product Installation Components” on page 2-2](#).

A custom installation allows you to place individual components on a particular machines, or to omit certain components entirely. You would choose the custom installation to, for example,

place a single Administration Console on an administration or monitoring machine, Samples on developer machines, and Edge Servers on other remote machines.

A custom installation requires a certain familiarity with the product, and in some cases will require you to make changes to property or configuration files once the installation is complete.

Adding Components

If you perform a custom installation and do not install all the components, you can run the installation program to install these components. Select the same BEA Home directory you used for the initial installation. The installer displays the list of components; those that have not been installed will have a check mark next to them. Leave the check marks next to those components you want to install at this time, and finish the installation.

Generating a Verbose Installation Log

If you launch the installation from the command line or from a script, you can specify the `-log` option to generate a verbose installation log. The installation log stores messages about events that occur during the installation process, including informational, warning, error, and fatal messages. This type of file can be especially useful for silent installations.

Note: You may see some warning messages in the installation log. However, unless a fatal error occurs, the installation program completes the installation successfully. The installation user interface indicates the success or failure of each installation attempt, and the installation log file includes an entry indicating that the installation was successful.

To create a verbose log file during installation, include the `-log=full_path_to_log_file` option in the command line. For example:

```
rfid_edge210_win.exe -log=C:\logs\server_install.log
```

The path must specify a file. You cannot create a folder simply by including a name for it in a pathname; your path should specify only existing folders. If your path includes a nonexistent folder when you execute the command, the installation program does not create the log file.

Preparing for Your Installation

Starting the Installation Program

The following sections describe how to start the installation program on Windows and UNIX platforms:

- [“Before You Begin” on page 3-1](#)
- [“Starting the Installation Program on Windows Platforms” on page 3-2](#)
- [“Starting the Installation Program on Linux and Other UNIX Platforms” on page 3-3](#)
- [“What’s Next?” on page 3-5](#)

Before You Begin

Before you install the software, review the following information:

- Make sure that your hardware and software configuration is supported by your WebLogic RFID Edge Server software. See [Supported Configurations](#).
- Read [Chapter 2, “Preparing for Your Installation.”](#)
- You cannot reinstall any BEA product on top of a previously installed version of the same product—in the same BEA Home directory or in the same file location. You can, however, add products and product components to an existing installation. To reinstall the same version of one of the products, you must first uninstall the previous installation, as described in [Chapter 9, “Uninstalling the Software.”](#)
- If you will be adding components to an existing installation of WebLogic RFID Edge Server, shut down any running servers before starting the installation.

Starting the Installation Program on Windows Platforms

The following sections describe how to start the installation program on a Windows platform:

- [“Starting in Graphical Mode” on page 3-2](#)
- [“Starting in Console Mode” on page 3-2](#)

Note: If you are installing the software on a Windows system that supports more than one monitor, you must disable all but one monitor before starting the installation program.

Starting in Graphical Mode

To start the graphical-mode installation process on a Windows platform:

1. Log in to the Windows system.
2. Go to the directory where you downloaded the installation program.
3. Complete the appropriate procedure in the following table:

If you are installing from . . .	Perform the following action . . .
Web download	Go to the directory where you downloaded the installation program.
CD-ROM	<ol style="list-style-type: none">1. Insert the software CD into the CD-ROM drive.2. If the installation program does not start automatically, open Windows Explorer and double-click the CD-ROM icon. Navigate to the folder for the Windows installation.

4. Double-click the installation file:

`rfid_edge_win32.exe` (BEA installation program for WebLogic RFID Edge Server)

The installation program begins to install the software.

5. Proceed to [Chapter 4, “Running the Installation Program in Graphical Mode.”](#)

Starting in Console Mode

To start the console-mode installation process on a Windows platform:

1. Log in to the target Windows system.

2. Complete the appropriate procedure in the following table:

If you are installing from . . .	Perform the following action . . .
Web download	<ol style="list-style-type: none"> 1. Open an MS-DOS command prompt window. 2. Go to the directory where you downloaded the installation program.
CD-ROM	<ol style="list-style-type: none"> 1. Insert the software CD into the CD-ROM drive. 2. Open an MS-DOS command prompt window. 3. Go to the CD-ROM directory and navigate to the folder for the Windows installation program.

3. Launch the installation by entering the following command:

```
rfid_edge_win32.exe -mode=console (BEA Products installation program for
WebLogic Server)
```

Note: You can also include the `-log=full_path_to_log_file` option in the command line to create a verbose installation log. For example:

```
rfid_edge_win32.exe -mode=console -log=C:\logs\server_install.log
```

For more information, see [“Generating a Verbose Installation Log” on page 2-11](#).

After a few moments, a BEA Installer window opens and the installation program begins to install the software.

4. Proceed to [Chapter 5, “Running the Installation Program in Console Mode.”](#)

Starting the Installation Program on Linux and Other UNIX Platforms

The BEA Products installation program requires a Java run-time environment (JRE) to run. A JRE is bundled in the Windows installation program, and in some Linux installation programs (those with filenames ending in `.bin`). For other UNIX platforms, the installation program does not include a JRE. Filenames for these installation programs end in `.jar`. To run the `.jar` installation programs, you must have an appropriate version of a JDK installed on your system, and include the `bin` directory of the JDK at the beginning of your `PATH` system variable.

Notes: It is important that you use a JDK because the installation process assigns values to `JAVA_HOME` and related variables to point to this directory. All scripts installed by your installation program use this JDK by default, including scripts to start sample applications, the Configuration Wizard, and other development tools.

To run graphical-mode installation, your console must support a Java-based GUI. If the installation program determines that your system cannot support a Java-based GUI, it automatically starts running in console mode. See [Chapter 5, “Running the Installation Program in Console Mode.”](#)

The following sections describe how to start the installation program on UNIX platforms using filenames that end in `.bin`.

Starting the `.bin` Installation Program in Graphical Mode

To start the graphical-mode installation process for installation files with names ending in `.bin`:

1. Log in to the target UNIX system.
2. Complete the appropriate procedure from the following table.

If you are installing from . . .	Perform the following action . . .
Web download	Go to the directory where you downloaded the installation program.
CD-ROM	<ol style="list-style-type: none">1. Insert the software CD into the CD-ROM drive and go to the CD-ROM directory.2. Navigate to the directory that contains the installation program for your platform.

3. Launch the installation by entering the following commands:

```
# chmod a+x filename.bin  
# ./filename.bin
```

In these commands, `filename.bin` is the name of the installation program specific to your platform, for example, `rfid_edge200_linux32.bin`.

Note: You can also include the `-log=full_path_to_log_file` option in the command line to create a verbose installation log. For example:

```
# rfid_edge200_linux32.bin -log=/home/logs/BEA_install.log
```

See [“Generating a Verbose Installation Log” on page 2-11.](#)

The installation program begins to install the software.

4. Proceed to [Chapter 4, “Running the Installation Program in Graphical Mode.”](#)

Starting the .bin Installation Program in Console Mode

To start the console-mode installation process for installation files with names ending in `.bin`:

1. Log in to the target UNIX system.
2. Complete the appropriate procedure from the following table.

If you are installing from . . .	Perform the following action . . .
Web download	Go to the directory where you downloaded the installation program.
CD-ROM	<ol style="list-style-type: none"> 1. Insert the software CD into the CD-ROM drive and go to the CD-ROM directory. 2. Navigate to the directory that contains the installation program for your platform.

3. Launch the installation by entering the following commands:

```
# chmod a+x filename.bin
# ./filename.bin -mode=console
```

Here `filename.bin` is the name of the installation program specific to your platform; for example, `rfid_edge200_linux32.bin`.

Note: You can also include the `-log=full_path_to_log_file` option in the command line to create a verbose installation log. For example:

```
# rfid_edge200_linux32.bin -mode=console
-log=/home/logs/BEA_install.log
```

See “[Generating a Verbose Installation Log](#)” on page 2-11.

4. Proceed to [Chapter 5, “Running the Installation Program in Console Mode.”](#)

What's Next?

See one of the following, depending on your selected installation mode:

- [Chapter 4, “Running the Installation Program in Graphical Mode”](#)

Starting the Installation Program

- [Chapter 5, “Running the Installation Program in Console Mode”](#)

Running the Installation Program in Graphical Mode

The following sections describe how to run the installation program in graphical mode:

- “Running the Installation Program” on page 4-1
- “What’s Next?” on page 4-3

Running the Installation Program

Start the installation program as described in [Chapter 3, “Starting the Installation Program.”](#)

The installation program prompts you to enter specific information about your system and configuration. For instructions on responding to the prompts during installation, see the following table.

Table 4-1 Installing WebLogic RFID Edge Server in Graphical Mode

In this window . . .	Perform the following action . . .
Welcome	Click Next to proceed with the installation. You may cancel the installation at any time by clicking Exit .
BEA License Agreement	Read the BEA Software License Agreement and indicate your acceptance of the terms of the agreement by selecting Yes and clicking Next .

Table 4-1 Installing WebLogic RFID Edge Server in Graphical Mode

In this window . . .	Perform the following action . . .
<p>Choose BEA Home Directory</p>	<p>Specify the BEA Home directory that will serve as the central support directory for all BEA products installed on the target system. If you already have a BEA Home directory on your system, you can select that directory (recommended) or create a new BEA Home directory. If you choose to create a new directory, the installation program automatically creates one for you. See “Choosing a BEA Home Directory” on page 2-7.</p>
<p>Choose Install Type</p> <p>This window is displayed only during an initial installation.</p>	<p>Select the option button for the type of installation you want to perform:</p> <ul style="list-style-type: none"> • Complete—All software components included in your installation program are installed on your system. • Custom—You select the software components to be installed. <p>See “Choosing the Type of Installation” on page 2-10.</p>
<p>Choose Components</p> <p>This window is displayed only under the following conditions:</p> <ul style="list-style-type: none"> • You selected Custom installation in the Choose Install Type window. • You are adding components to an existing installation. 	<p>Specify the components to be installed by selecting or clearing the appropriate check boxes.</p> <p>This window displays a tree-view of all the components available for installation.</p> <p>When you select or clear a component at the folder level, all subcomponents are selected or cleared accordingly.</p> <p>If any components are already installed on your system, the check boxes for them are grayed out.</p> <p>See “Product Installation Components” on page 2-2.</p>
<p>Choose Product Directory</p> <p>This window is not displayed if you are adding components to an existing installation. Instead, you are prompted to confirm the product installation directory. If you do so, the selected components are installed in the product installation directory you specified during the initial installation.</p>	<p>Specify the directory in which you want to install the software and click Next. You can accept the default product directory (<code>rfid_edge20</code>) or create a new product directory.</p> <p>See “Choosing a Product Installation Directory” on page 2-10.</p> <p>If you choose to create a new directory, the installation program automatically creates one for you.</p>

Note: Always run the Configuration Wizard after the product installer has completed or the Edge Server and Administration Console will not start properly. See [“Running the Configuration Wizard”](#) on page 7-1.

What's Next?

By default, WebLogic RFID Edge Server uses the evaluation license file installed in the BEA Home directory so that you can start using the product immediately. For information on obtaining and installing a production license, see [Chapter 6, “Installing and Updating License Files.”](#)

For additional post-installation information, see [Chapter 7, “Post-Installation Information.”](#)

Running the Installation Program in Graphical Mode

Running the Installation Program in Console Mode

The following sections describe how to run the installation program in console mode:

- [“Running the Installation Program”](#) on page 5-1
- [“What’s Next?”](#) on page 5-6

Running the Installation Program

Start the installation program in console mode as described in [“Starting in Console Mode”](#) on page 3-2.

Respond to the prompts in each section by entering the number associated with your choice or by pressing Enter to accept the default. To exit the installation process, enter `exit` (or `x`) in response to any prompt. To review or change your selection, enter `previous` (or `p`) at the prompt. To proceed to the following window, enter `next` (or `n`).

Note: In the sample console text and directory pathnames provided in this section, Windows conventions (such as backslashes in pathnames) are used; for example, `C:\bea\rfid_edge20`. When entering pathnames on a Linux system, be sure to use UNIX conventions instead. For example, use forward slashes in pathnames, such as `/home/bea/rfid_edge20`.

The following procedure steps you through the installation program. Use this procedure after you have started the installation program in console mode, as described in [Chapter 3, “Starting the Installation Program.”](#)

1. At the `welcome` prompt, type press Enter to continue.

2. Read the BEA Systems License Agreement and indicate your acceptance or rejection of its terms:
 - Type 1 to indicate your agreement with the terms of the license and proceed with the installation. To review the entire agreement, press Enter or type Down several times. Type Up to scroll back through sections previously displayed.
 - Type 2 if you do not agree with the terms of the license. If you type 2, the installation process terminates.
3. At the Choose BEA Home Directory prompt, specify the BEA Home directory that will serve as the central support directory for all WebLogic RFID Edge Server software installed on the target system. For details about the BEA Home directory, see [“Choosing a BEA Home Directory” on page 2-7](#).

One of the following is displayed on your system:

- If you have existing BEA Home directories on your system, a list of the directories is displayed, as shown in the following example:

```
Choose BEA Home Directory:
-----

->1|* Create a new BEA Home
   2|C:\bea
   3|C:\bea_prod
   4|C:\bea_qa
```

Enter index number to select OR [Exit][Previous][Next]>

Type the number associated with the desired BEA Home directory, or create a new BEA Home directory by pressing Enter.

- If no BEA Home directories reside on your system, or if you chose to create a new BEA Home, the installation program displays the following prompt:

```
Choose BEA Home Directory:
-----
```

```
"BEA Home" = [Use default "C:\bea]
```

Input BEA Home OR [Exit][Previous][Next]>

Do one of the following:

- To use the default BEA Home directory, type n or press Enter.

- To create a new BEA Home directory, enter the *full path* of the BEA Home directory, for example `C:\beahome2`. If you specify a directory that does not exist, the installation program creates it for you.

The installation program displays the BEA Home directory you have specified, as shown in the following example:

```
Choose BEA Home Directory:
-----

      "BEA Home" = [C:\beahome2]

Select Option:
  1 - Input BEA Home
  2 - Use default [C:\bea]

Enter option number to select OR [Exit][Previous][Next]>
```

On the command line, press `Enter` or type `n` to accept your selection. Otherwise, type `1` or `p` to return to the Choose BEA Home Directory panel, where you can modify your entry; or type `2` to use the default BEA Home directory.

4. After you have selected your BEA Home directory and confirmed your selection, type `Next` or press `Enter`. One of the following occurs:
 - If you are adding components to an existing installation, the `Choose Components to install` panel is displayed. Go to step 6.
 - If you are performing an initial installation, the `Choose Install Type` prompt is displayed. Go to step 5.
5. Specify the type of installation you want to perform by entering the number associated with the install type:

```
Choose Install Type:
-----

Select the type of installation you wish to perform.
->1|Complete
   |   Install the complete BEA RFID Edge Server, including:
   |   |Edge Server Administration Console Reader Simulator Sample Code
   |   |RFID Product Documentation

   2|Custom
   |   Choose software components to install and perform optional
   |   configuration.

Enter index number to select OR [Exit][Previous][Next]>
```

Do one of the following:

- Press Enter to choose a Complete installation. Proceed to step 7.
- Type 2 to choose a Custom installation. The Choose Components to install prompt is displayed. Proceed to step 6.

For more information about complete and custom installations, see [“Choosing the Type of Installation” on page 2-10](#).

6. Select the components you want to install. The available components are displayed as follows:

```
Choose Components to install:
```

```
-----
```

```
Release 2.1.0.0
+----Common Component [1]
|      +----Shared Component [1.1]
+----RFID Edge Server [2]
      +----Edge Server [2.1]
      +----Administration Console [2.2]
      +----Reader Simulator [2.3]
      +----Sample Code [2.4]
      +----RFID Product Documentation [2.5]
```

```
Enter number exactly as it appears in brackets to toggle selection OR
[Exit][Previous][Next]>
```

In an initial installation, all components are selected by default as indicated by the `x` (Linux systems) or check mark (Windows systems) at the end of each line. Selected components *will be* installed on your system. To deselect a component, type the numeric code for it on the command line, exactly as it appears within the brackets. For example, if you do not want to install the Sample Code, type 2.4 on the command line.

The word `Installed` is shown in brackets for any components you have already installed on your system.

When you are finished selecting components, press Enter or type `n`.

7. At the Choose Product Directory prompt, specify the directory in which you want to install the software. You can accept the default product directory (`BEA_HOME\rfid_edge20`) or create a new product directory.

Note: If you are adding components to an existing installation, you are prompted to confirm the product installation directory.

If you specify a new directory, the installation program automatically creates it for you.

The following example shows the choices displayed in this section:

```
Choose Product Directory:
```

```
-----
```

```
Product Installation Directory= [Use default C:\beahome2\rfid_edge20]
```

```
Input Product Installation Directory OR [Exit][Previous][Next]>
```

Do one of the following:

- Press Enter to accept the current selection.
- Enter the *full path* to the directory in which you want to install the software, and press Enter.

You are prompted to confirm your selection as shown in the following text:

```
Choose Product Directory:
```

```
-----
```

```
  ->1| Yes, use this product directory [C:\beahome2\rfid_edge20]
     2| No, select another product directory
```

```
Enter index number to select OR [Exit][Previous][Next]>
```

Verify that your entry is correct, then type 1 or press Enter to proceed with the installation. Otherwise, type 2 to return to the Choose Product Directory panel, where you can modify your entry.

8. Specify the folder in which you want to create the Start menu shortcuts. Select the All Users folder or the local user's folder, as shown in the following sample text:

```
Choose Shortcut Location:
```

```
-----
```

```
*The installer creates shortcuts to BEA components, samples, and tools.
*As a user with administrative privileges, you can specify where these
*shortcuts are created.
```

```
->1|"All Users" Start menu folder> (recommended)
   |If a user without administrative privileges uses the BEA
   |Configuration Wizard in this installation to create domains, the user
   |may have to create Start menu shortcuts manually. Refer to the
   |documentation for more information.
   2|Local user's Start Menu folder
   |Select this option if you need to ensure that other profiles
   |registered on this machine will not have access to these shortcuts.
```

```
Enter index number to select OR [Exit][Previous][Next]>
```

Do one of the following:

- Type 1 or press Enter to create Start menu shortcuts in the All Users folder. This provides all users registered on the machine with access to the installed software. However, only users with Administrator privileges can create shortcuts in the All Users folder. Users can manually create shortcuts in their local Start menu folders, if desired.
- Type 2 to create shortcuts in your local user’s Start menu folder. If you do so, other users registered on this machine will not have access to the Start menu entries for this installation.

You are prompted to confirm your selection:

Choose Shortcut Location:

*The installer creates shortcuts to BEA components, samples, and tools.
*As a user with administrative privileges, you can specify where these
*shortcuts are created.

```
->1|"All Users" Start menu folder> (recommended)
  |If a user without administrative privileges uses the BEA
  |Configuration Wizard in this installation to create domains, the
  |user may have to create Start menu shortcuts manually. Refer to
  |the documentation for more information.

  2|Go back to the previous screen and make another choice.
```

Enter index number to select OR [Exit][Previous][Next]>

Type 1 or press Enter to proceed with the installation. Otherwise, type 2 to return to the previous panel, where you can modify your entry.

After you verify your selection, the installation program begins copying the components you specified to your system.

Note: It is normal for the installation program to pause for a fairly long time, especially toward the end. The installation program is still working when this occurs.

When the installation is complete, a Congratulations message is displayed.

9. Press Enter or type `Exit` to exit the installation program.

What’s Next?

Run the Configuration Wizard after the product installer has completed. See [“Running the Configuration Wizard” on page 7-1.](#)

By default, WebLogic RFID Edge Server uses the evaluation license file installed in the BEA Home directory so that you can start using the product immediately. For instructions on updating the license file, see [Chapter 6, “Installing and Updating License Files.”](#)

For additional post-installation information, see [Chapter 7, “Post-Installation Information.”](#)

Running the Installation Program in Console Mode

Installing and Updating License Files

The following sections explain how to acquire, install, and update your product licenses:

- [About BEA Product Licenses](#)
- [Updating Your license.bea File](#)
- [Upgrading Licenses from Previous Software Releases](#)

About BEA Product Licenses

BEA products use an XML-format license file called `license.bea`. This license file, stored in the BEA Home directory, applies to BEA products installed in that directory. Your BEA software checks this file at run time to determine which product components you are authorized to use.

Note: If you have multiple BEA Home directories on your system, each BEA Home must have a `license.bea` file that authorizes use of the products associated with that directory.

Licenses are release specific. For example, to use WebLogic RFID Edge Server 2.0, you must have a valid 2.0 license file.

The types of license files that can be used as the `license.bea` file and the technical restrictions that they impose are described in the following table.

Note: See the End User License Agreement for specific license terms and conditions.

Table 6-1 WebLogic RFID Edge Server License File Types

License Type	Description
Evaluation	<ul style="list-style-type: none"> Used in a development environment to evaluate the software. Generated by the installer and expires after 30 days. Installed in the BEA Home directory as <code>license.bea</code>.
Express License	<ul style="list-style-type: none"> A production license used in full-scale production environments. Will not expire - no time limitation. Unlimited number of readers. Enables you to run your software on a single machine, even if it is running multiple instances of WebLogic RFID Edge Server. Permits client connections from an unlimited number of IP addresses. Must be purchased separately from the product. For information about purchasing a production license, contact your sales representative or visit the BEA corporate Web site at http://www.bea.com. Is tied to the IP address of the machine. A production license can be used only on a machine with the same IP address that is specified in the license file. Does not allow use of workflows or the WebLogic Store-and-Forward (SAF) client.
Premium License	<ul style="list-style-type: none"> A premium license is an express licence plus the following features: <ul style="list-style-type: none"> Permits use of workflows. Permits use of the WebLogic JMS Store-and-Forward (SAF) Client.

When you install your software, a 30-day evaluation license file (`license.bea`) is installed on your system. By default, your software uses the evaluation license installed with the product so that you can start using it immediately. Subsequently, when you install additional BEA products that include a `license.bea` file, the installation program automatically adds the new product licenses to the `license.bea` file.

Note: The `license.bea` file conforms to the XML grammar definition. The XML definition (`<?xml version="1.0" encoding="UTF-8"?>`) must be at the very beginning of the `license.bea` file. There cannot be any spaces or line breaks before the XML definition.

Updating Your `license.bea` File

When you install WebLogic RFID Edge Server, the installation program generates an evaluation `license.bea` file for use with the software and installs it in the BEA Home directory. If you are installing your software in an existing BEA Home, the installation program automatically adds the evaluation license included with your product distribution to the existing `license.bea` file.

In some cases, however, you must update the `license.bea` file separately, independent of the installation process. For example, you must update your license file if at least one of the following is true:

- You purchase a product for production use and you receive an express or premium production license to replace your evaluation license.
- You have an express license and you purchase a premium license.
- You want to upgrade production systems to a new release of the software. After installing the current release of the software, you must upgrade your license to the current version. To do so, see “[Upgrading Licenses from Previous Software Releases](#)” on page 6-5.
- You purchase additional WebLogic RFID Edge Server software with production licenses, and you want to add the production licenses for the new software to the production licenses for software already in production use on your system.
- You want to consolidate existing production licenses for different component products onto a single machine.
- You want to transfer existing production licenses from one machine to another machine with a different IP address.

In each case, you will receive a new license file from BEA, the contents of which must be included in the `license.bea` file in the target BEA Home directory. To facilitate the license update process, BEA provides an `UpdateLicense` utility that merges the new license into the existing license in the BEA Home directory, and deletes any expired or duplicate entries.

The `UpdateLicense` merge process is not intended to modify the license attributes for any component or feature in the license files being merged. For example: if you merge a license for one version of the product on IP address *A* with a license for another version of the product on IP address *B*, the IP addresses for both license versions are retained. The merge process creates a single license file that can be used to run each version on its associated IP address. The merge process does not change the IP address or the product version associated with either entry. In order to change the IP address for a specific license, you must use the BEA eLicense system at <http://elicense.bea.com>.

Important Considerations for Updating Your `license.bea` File

When determining how to update your `license.bea` file, you should consider the following:

- If you want to merge the features enabled by both your new license and your existing license, you must use the `UpdateLicense` utility. See [“Updating `license.bea` by Using the `UpdateLicense` Utility” on page 6-4](#).
- You may choose to replace an existing `license.bea` file with a new `license.bea` file, but if you do so, you run the risk of losing the product usage rights enabled by your existing license file.

Note: Do not edit the `license.bea` file manually. Doing so may cause operating problems for the currently installed BEA products, or result in problems later when BEA products are installed for maintenance upgrades.

Updating `license.bea` by Using the `UpdateLicense` Utility

To update your `license.bea` file:

1. Save the license update file that you received through e-mail, with a name other than `license.bea`, in the target BEA Home directory. For example, save the file as `new_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 command window and go to the target BEA Home directory.
 - On a Linux system, go to the target BEA Home directory.
3. If it is not already included, add the JDK to your `PATH` variable, using the correct pathnames on your system for `BEA_HOME` and `JDK`:
 - On a Windows system:

```
set PATH=BEA_HOME\JDK\bin;%PATH%
```
 - On a Linux system:

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

In this command, `JDK` represents the directory that contains the JDK being used for this installation, for example, `jdk150_06`.

4. Merge the license update file into your existing license by entering one of the following commands:
 - On a Windows system:

```
UpdateLicense license_update_file
```
 - On a Linux system:

```
# sh UpdateLicense.sh license_update_file
```

license_update_file represents 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 your BEA software and application installation directories.

Although no one else can use your license file, you should save a copy of it in a place that is protected from both malicious and innocent tampering.

Upgrading Licenses from Previous Software Releases

Customers who have installed a pre-2.0 version of the WebLogic RFID Edge Server software (marketed as RFTagAware™) can call BEA customer support for assistance in upgrading to the current version. Mention that you are an existing RFTagAware customer who is upgrading to WebLogic RFID Edge Server; doing so will help ensure that your request for assistance is routed to the correct people within customer support.

If you are upgrading your WebLogic RFID Edge Server 2.0 installation to WebLogic RFID Edge Server 2.1, the upgrade installer lets you install the latest software while preserving your existing configuration information.

Note: Prior to upgrading, read and follow the steps in [“Backing Up the System” on page 7-9](#).

Installing and Updating License Files

Post-Installation Information

The following sections provide post-installation information:

- [“Running the Configuration Wizard” on page 7-1](#)
- [“Understanding the Windows Shortcuts” on page 7-3](#)
- [“Understanding the Product Directory Structure” on page 7-3](#)
- [“Testing the Installation” on page 7-5](#)
- [“Starting and Stopping WebLogic RFID Edge Server” on page 7-6](#)
- [“Maintaining the WebLogic RFID Edge Server System” on page 7-9](#)
- [“What’s Next: Configuring the RFID Edge Server” on page 7-10](#)

Running the Configuration Wizard

Always run the Configuration Wizard after the product installer has completed. The Configuration Wizard replaces tokens in the product configuration files (`etc/edge.props` and `etc/admin-console.props`) with the values you specify configuring the RFID Edge Server.

[Table 7-1](#) describes these Edge Server configuration properties.

Table 7-1 Edge Server Configuration Properties

Property	Description
Site ID	The name of the location where the Edge Server and readers reside.
Edge Server ID	The name of the Edge Server instance.
Edge Server ALE Service Port	The TCP port on the Edge Server machine that your applications use to access the ALE API. Choose any port that is not being used by another application.
Monitoring Rate (ms)	Specifies how frequently the Edge Server sends telemetry information to the Administration Console. Expressed in milliseconds. Default: 1000

The following section describes how to invoke the Configuration Wizard in graphical mode.

Starting in Graphical Mode

When run in graphical mode, the Configuration Wizard is executed in a graphical environment. The console for the machine on which the product installation resides must support a Java-based GUI. All Windows-based consoles support Java-based GUIs; only a subset of UNIX-based consoles support Java-based GUIs.

You can start the Configuration Wizard in graphical mode from either the Windows Start menu or from the command line.

- To start the Configuration Wizard in graphical mode on a Windows platform, choose the Configuration Wizard option from the BEA program group in the Windows Start Menu:
Start → Programs → BEA WebLogic RFID Edge Server <version> → Run Configuration Wizard
- To start the Configuration Wizard in graphical mode from a Windows command prompt or on a UNIX platform:
 - a. Log in to the target system on which the product installation resides.
 - b. Open an MS-DOS command prompt window (on Windows) or a command shell (on UNIX).

- c. Go to the `\common\bin` subdirectory of the product installation directory. For example:

```
cd c:\bea\rfid_edge20\common\bin
```

- d. Invoke one of the following scripts to start the Configuration Wizard in graphical mode:

```
Windows: config.cmd
```

```
UNIX: config.sh
```

Understanding the Windows Shortcuts

When you install your BEA WebLogic RFID Edge Server software on a Windows system, the installation program automatically creates shortcut entries on the Start Menu.

Note: If the user performing the installation has Administrator privileges, the shortcut entries can be created in the All Users Start menu folder or in the user's local Start menu folder. For more information, see [“Administrator Privileges \(Windows\)” on page 2-5](#).

Options on the Start Menu vary, according to the components you choose to install.

The BEA WebLogic RFID Edge Server folder (Start → Programs → BEA WebLogic RFID Edge Server <version>) contains the shortcuts shown in the following list:

- *Run Quick Test* — Tests the success of the installation. See [“Testing the Installation” on page 7-5](#).
- *Run Reader Simulator* — Starts the reader simulator. See [“Reader Simulator Configuration” on page 8-10](#) and [Using the Reader Simulator](#).
- *Start Edge Server* — Starts an instance of the RFID Edge Server. See [“Starting and Stopping WebLogic RFID Edge Server” on page 7-6](#).
- *Uninstall RFID Edge Server* — launches the uninstallation program. See [Chapter 9, “Uninstalling the Software.”](#)
- *Run Administration Console* — Starts the RFID Edge Server Administration Console. See [Using the Administration Console](#).
- *Run Configuration Wizard* — Configures basic properties such as Site ID and Edge Server ID. See [“Running the Configuration Wizard” on page 7-1](#).

Understanding the Product Directory Structure

During the product installation, you are asked to select or create a BEA Home directory and a product installation directory. For information about the BEA Home directory, see [“Choosing a](#)

BEA Home Directory” on page 2-7. For a complete installation, the installation program creates a dedicated directory structure for the BEA Products software. It may or may not reside in the BEA Home directory. Table 7-2 describes the contents of each directory.

Note: The installation program does not create directories for components that are not installed.

Table 7-2 Product Installation Directory Structure

This directory ...	Contains ...
/bin	Scripts that start the Administration Console, Edge Server, Reader Simulator, and Quick Test utility: RunAdminConsole RunEdgeServer RunQuickTest RunReaderSim
/etc	Properties and logging files for the Administration Console, Edge Server, and JMS Notification Driver: admin-console.props edge.props jms.options logging.props.admin-console logging.props.edge
/lib	Java libraries used by RFID Edge Server components.
/samples	Sample Java source code and class files that illustrate use of the ALE and ALEPC APIs, and XML examples for use with workflows.
/share/schemas	Schema used to represent RFID Edge Server data types in XML and WSDL files describing the ALE and ALEPC APIs.
/uninstall	Code required to uninstall the BEA software.
/var/edgestate	The edgestate directory contains state data about ECSpec, PCSpec, and EPCCacheSpec instances and their subscribers, and reader configuration data for readers configured using the Administration Console, as well as other persistent data that you create using the ALE API.

Testing the Installation

Make sure that WebLogic RFID Edge Server is correctly installed and running as soon as your installation is complete by:

- Starting the Reader Simulator (`bin\RunReaderSim.bat` or `bin/RunReaderSim.sh`).
- Starting the Edge Server (`bin\RunEdgeServer.bat` or `bin/RunEdgeServer.sh`).
- Running the QuickTest utility (`bin\RunQuickTest.bat` or `bin/RunQuickTest.sh`).

The simulator is preconfigured to see seven GID-64-I tags in each of two antennas, and the QuickTest application will report that it sees these tags. The simulator's properties definitions in `edge.props` are examples of the properties definitions required to configure WebLogic RFID Edge Server to communicate with any reader.

1. First, set up your desktop so you can see both the Reader Simulator and a new console window at the same time.
2. In the new console window, start the QuickTest utility.

In the console window, you can see that QuickTest first connects to the Edge Server, then starts testing a logical reader called `ConnectTerra1`, followed by testing a logical reader called `Connectterra2` (these are the two default logical readers defined in the Reader Simulator):

```
BEA WebLogic RFID Edge Server 2.1.0 Quick Test
Copyright (C) 2003-2006 by BEA Systems, Inc.
All Rights Reserved; use is subject to license terms.
US and International Patents Pending

Connecting to edge server...
Finished connecting to edge server.

Testing logical reader ConnectTerra1...
  Logical reader ConnectTerra1 read the following 7 EPCs:
    urn:epc:tag:gid-64-i:10.70.7
    urn:epc:tag:gid-64-i:10.50.5
    urn:epc:tag:gid-64-i:10.20.2
    urn:epc:tag:gid-64-i:10.60.6
    urn:epc:tag:gid-64-i:10.10.1
    urn:epc:tag:gid-64-i:10.40.4
    urn:epc:tag:gid-64-i:10.30.3
Finished testing logical reader ConnectTerra1.
```

```
Testing logical reader ConnectTerra2...
Logical reader ConnectTerra2 read the following 7 EPCs:
urn:epc:tag:gid-64-i:38000.1571.4
urn:epc:tag:gid-64-i:38000.171.1
urn:epc:tag:gid-64-i:38000.4971.7
urn:epc:tag:gid-64-i:38000.1771.5
urn:epc:tag:gid-64-i:38000.2971.6
urn:epc:tag:gid-64-i:38000.571.2
urn:epc:tag:gid-64-i:38000.871.3
Finished testing logical reader ConnectTerra2.
```

Starting and Stopping WebLogic RFID Edge Server

You start WebLogic RFID Edge Server with individual scripts in the `RFID_EDGE_HOME/bin` directory, where `RFID_EDGE_HOME` is the directory where you installed the WebLogic RFID Edge Server software.

Note that in a custom installation, not all files may be on the same machine.

Starting WebLogic RFID Edge Server in a Windows Environment

From the `RFID_EDGE_HOME\bin` directory, run the following commands in the order shown:

- `RunAdminConsole.bat`
Starts the Administration Console GUI.
- `RunReaderSim.bat`
Optional – Run only if you are using the reader simulator software, rather than actual readers.
- `RunEdgeServer.bat`
Starts the Edge Server. Displays a console window on the machine where you started the Edge Server.

Because it is installed as a Windows service, you can also start the Edge Server through the Control Panel:

Start → Settings → Control Panel → Administrative Tools → Services, then right click BEA WebLogic RFID Edge Server and select Start.

- `RunQuickTest.bat`

Optional – Provides a quick test to see that your Edge Server and readers are operating correctly. See [“Testing the Installation” on page 7-5](#) for details. Note that in either a standard or custom installation, the QuickTest utility is automatically installed in the same location as the Edge Server.

Running the RFID Edge Server as a Windows Service

In a Windows environment, the RFID Edge Server is installed as a Windows service. By default it is installed in manual, stopped mode. To alter the default, open the Component Services control panel: Start → Settings → Control Panel → Administrative Tools → Component Services. Choose the Services (Local) window in the left pane, and double-click the WebLogic RFID Edge Server service to access the service’s properties.

You can start the RFID Edge Server either by starting the Windows service, or by running the batch file, `RunEdgeServer.bat`. The batch file runs the Edge Server as a stand-alone process. It does not start the service in place. If you try to run the batch file stand-alone while the service is running, or if you try to start the Edge Server as a service while the batch file is running, the attempt will fail.

When running the Edge Server as a Windows service, the `edge.wrapper.conf` file must be updated with `wrapper.java.classpath` properties set to the JMS implementation jar files (specified in `jms.options`).

The `RFID_EDGE_HOME/lib/install` directory contains two `.bat` files which provide a method for you to manually installing or uninstall WebLogic RFID Edge Server as a Windows service:

- `InstallEdgeService.bat`
- `UninstallEdgeService.bat`

Starting WebLogic RFID Edge Server in a UNIX Environment

From the `RFID_EDGE_HOME/bin` directory, run the following scripts in the order shown:

- `RunAdminConsole.sh`

Starts the Administration Console GUI. For example, to start the Administration Console when the installation directory for the RFID Edge Server is `/opt/bea/rfid_edge20`:

```
# /opt/bea/rfid_edge20/bin/RunAdminConsole.sh
```

- `RunReaderSim.sh`

Optional – Run only if you are using the reader simulator software, rather than actual readers.

- `RunEdgeServer.sh`

Starts the Edge Server. Displays a console window on the machine where you started the Edge Server.

- `RunQuickTest.sh`

Optional – Provides a quick test to see that your Edge Server and readers are operating correctly. See “[Testing the Installation](#)” on [page 7-5](#) for details. Note that in either a standard or custom installation, the QuickTest utility is automatically installed in the same location as the Edge Server.

Starting the Edge Server at System Boot

In a UNIX environment, the WebLogic RFID Edge Server installation includes an initialization script for the Edge Server: `RFID_EDGE_HOME/bin/rfidedgeserver`. You can use the `rfidedgeserver` script to ensure that the system starts the RFID Edge Server at system boot, and restarts the RFID Edge Server automatically in the case of an unexpected exit.

The `rfidedgeserver` script takes one argument: `start`, `stop`, or `restart`. [Table 7-3](#) describes possible failure conditions for each argument.

Table 7-3 Edge Server Startup Arguments

This Argument...	Fails If...
<code>start</code>	The Edge Server fails to start three times in a row. The Edge Server is already running.
<code>stop</code>	The Edge Server process cannot be killed. (Warn only) If the Edge Server is not running.
<code>restart</code>	Stop or start fails.

The `rfidedgeserver` script can be run as needed from within the WebLogic RFID Edge Server install directory, or invoked on system startup. If it will be a startup script, you will need to copy it to the `/etc/init.d` directory and create a symbolic link to it in one of the system run-level directories (`/etc/rc[0-6].d`) before it will run automatically.

Stopping WebLogic RFID Edge Server

To shut down the software, either terminate or kill each of the three processes you started in [“Starting WebLogic RFID Edge Server in a Windows Environment” on page 7-6](#) or [“Starting WebLogic RFID Edge Server in a UNIX Environment” on page 7-7](#).

Maintaining the WebLogic RFID Edge Server System

The following sections provide maintenance information.

Backing Up the System

System backups should be planned in the initial architectural design phases of your site’s WebLogic RFID Edge Server-based implementation. Frequent backups and offsite storage are two key components of a successful system administration strategy.

At a minimum, backups should include the following directories under `RFID_EDGE_HOME`, where `RFID_EDGE_HOME` is the directory where you installed the WebLogic RFID Edge Server software:

- `etc/` – This directory contains configuration information that can be used to configure a new Edge Server in the event of a machine failure.
- `var/` – This directory contains state and log information stored by the Edge Server.

Caution: If your backup plan requires backing up a running Edge Server, make certain beforehand that your solution supports backing up open files.

- `edgestate/` – This persistence store maintains the Edge Server state data about `ECSpec`, `PCSpec`, and `EPCCacheSpec` instances and their subscribers, and reader configuration data for readers configured using the Administration Console. The type and number of files in this directory, and the frequency of file updates, depend on how your Edge Server is deployed, and for what purposes. The location of this directory is configurable.

The persistence store is configured in `edge.props`. The settings in this file specify the location of the persistence store, whether or not you are keeping state data each time you stop and restart the Edge Server, and other configuration details. For more information, see [“Editing `edge.props` to Configure State Data” on page 8-11](#).

Optionally, consider adding the `bin` or `lib` directories as backup targets, if either directory contains files that cannot be fully recreated by the WebLogic RFID Edge Server installer.

Restoring the System

The procedures for restoring your Edge Server vary based on the condition of the hardware and availability of the persistence store. The general steps for restoring a failed system are:

1. Obtain and reinstall the proper version of WebLogic RFID Edge Server.
2. Restore data from the backup server to the new WebLogic RFID Edge Server host.
3. If the persistence store (typically `var/edgestate/`) on the failed system is not available, applications will need to define new `ECSpec` or `PCSpec` and `EPCCacheSpec` instances and subscribe to them.

In the following instructions, assume the failed Edge Server hardware is E1 and the replacement Edge Server hardware is E2:

1. Assign E2 the same hostname and IP address as E1.
2. Install WebLogic RFID Edge Server on E2. This must be the same version that previously was installed on E1.
3. Copy the backed-up configuration (`etc/*`) data and persistence store (`var/edgestate/*`) data (if available) to the same location on E2 relative to the WebLogic RFID Edge Server install directory.
4. Start WebLogic RFID Edge Server on E2.
5. If persistence store data was not available:
 - For applications that read tags, define new `ECSpec` instance(s).
 - For applications that write tags, define new `PCSpec` instance(s) and `EPCCacheSpec` instance(s).
 - Application(s) subscribe to `ECSpec`, `PCSpec`, or `EPCCacheSpec` instances on E2.
 - Reconfigure readers previously configured via the Administration Console on E2.

What's Next: Configuring the RFID Edge Server

You can now configure your RFID Edge Server; see [“Configuring WebLogic RFID Edge Server.”](#)

Configuring WebLogic RFID Edge Server

You can configure an WebLogic RFID Edge Server by editing the `edge.props` file or by using the Administration Console. As installed, the default is to use the Administration Console.

The `edge.props` file is a configuration properties file for the Edge Server. It is located in `RFID_EDGE_HOME/etc`, where `RFID_EDGE_HOME` is the directory in which you installed the RFID Edge Server software.

This file is formatted as a Java properties file, where each line defines a configuration parameter. Lines beginning with a pound sign (#) character are comments and are ignored by WebLogic RFID Edge Server during processing. The file is self-documenting in that each property or set of properties is described by the comments preceding it.

The installation program writes initial configuration settings to this file.

Some setup tasks you might want to perform include:

- [“Configuring Readers” on page 8-2](#)
- [“Reader Simulator Configuration” on page 8-10](#)
- [“Specifying State Data Persistence” on page 8-11](#)
- [“Configuring the HTTP Notification Driver” on page 8-13](#)
- [“Enabling the SNMP Log Handler” on page 8-14](#)
- [“Setting Up the JMS Notification Driver” on page 8-15](#)
- [“Setting Up the JNDI Provider and JMS Server” on page 8-17](#)

- [“Using the WebLogic JMS Store-and-Forward \(SAF\) Client” on page 8-23](#)

Configuring Readers

The following sections provide information related to configuring the readers that will interact with the RFID Edge Server:

- [“Two Approaches to Configuring Readers: edge.props or Administration Console” on page 8-2](#)
- [“Comparing Physical Readers and Logical Readers” on page 8-3](#)
- [“Using Composite Readers” on page 8-5](#)
- [“Adding Additional Physical Readers” on page 8-4](#)
- [“Using Composite Readers” on page 8-5](#)
- [“Defining Composite Readers” on page 8-6](#)
- [“Adding a Transient Filter” on page 8-7](#)
- [“Using 64-bit Tags” on page 8-9](#)
- [“Using 96-bit Tags” on page 8-10](#)

Two Approaches to Configuring Readers: edge.props or Administration Console

You can configure WebLogic RFID Edge Server to communicate with supported readers, printers, filters, and a workflow configuration in one of two ways:

- Editing the `edge.props` file directly to configure these devices.
- Editing this information using the Administration Console.

The default behavior is controlled by a property in the `edge.props` file called `com.connecterra.ale.dynamicConfig.enabled`. The default setting for this property is `true`:

```
com.connecterra.ale.dynamicConfig.enabled = true
```

This means that you can, for example, configure logical and composite readers using the Administration Console. If you want to add and configure readers by editing the `edge.props` file, set this property to `false`.

Important: One group of options is configured only through `edge.props`, and a second group of options (those mentioned earlier: readers, printers, filters, and workflow configuration) can be configured either through `edge.props` or through the Administration Console. For this second group of configuration options, if you choose to use:

- `edge.props`, anything set previously through the Administration Console is ignored.
- the Administration Console, anything set previously in `edge.props` is ignored.

You can think of the `dynamicConfig.enabled` property as a single big switch: everything in the second group of properties is configured either through `edge.props`, or through the console, but not both. Therefore you should change the setting of `dynamicConfig.enabled` to `false` only after careful consideration of these implications. (The `dynamicConfig.enabled` property itself is part of the first group, `edge.props` only.)

Note: If `com.connecterra.ale.dynamicConfig.enabled` is set to `true`, the persistence flag, `com.connecterra.ale.persistence.disabled`, should be set to `false` (the default value) to allow reader configuration information to persist across invocations of RFID Edge Server.

[RFID Reader Reference](#) provides detailed information about the physical reader driver parameters, acceptable values, and defaults for readers recognized by WebLogic RFID Edge Server.

Comparing Physical Readers and Logical Readers

In specifying an event cycle or programming cycle, an application names one or more readers of interest. This is necessary because a single Edge Server may manage many readers that are used for unrelated purposes. For example, in a large warehouse, there may be 10 doors, with three readers at each door (a total of 30 readers). In such a case, a typical ALE request may be directed at the three readers for a particular door, but it is unlikely that an application tracking the flow of goods into trucks would want the reads from all 30 readers to be combined into a single event cycle.

This raises the question of how applications specify which readers are to be used for a given cycle. One possibility is to use identities associated with the readers themselves; for example, a unique name, serial number, IP address, etc. This is undesirable for several reasons:

- The exact identities of readers deployed in the field are likely to be unknown at the time an application is authored and configured.
- If a reader is replaced, this unique reader identity will change, forcing the application configuration to be changed.

- If the number of readers must change — for example, because it is discovered that four readers are required instead of three to obtain adequate coverage of a particular loading dock door — then the application must be changed.

To avoid these problems, ALE introduces the notion of a “logical reader.” Logical readers are abstract names that an application uses to refer to one or more readers that have a single logical purpose; for example, readers positioned around a door might be called DockDoor42. Logical readers may be usefully thought of as being equivalent to “locations.” Within the Edge Server, an association is maintained between logical names such as DockDoor42 and the physical readers assigned to fulfill that purpose. Any event cycle or programming cycle specification that refers to DockDoor42 is understood by the Edge Server to refer to the physical reader (or readers) associated with that name.

In many cases, a single RFID reader may support the use of more than one antenna, with the ability to treat each antenna independently. The Edge Server permits such readers to be configured so that each antenna is exposed through ALE as a separate logical reader. This gives flexibility to applications to use antennas independently or in concert, by simply specifying one or more logical readers in an ECSpec.

Adding Additional Physical Readers

If you decide to configure readers through the RFID Devices pane on the Administration Console, see [Using the RFID Edge Server Administration Console](#) for full instructions on configuring readers, and refer to the [RFID Reader Reference](#) for details on each reader’s properties.

The remainder of this section describes the reader configuration parameters used to configure additional readers in `edge.props`.

Within the `edge.props` file, each reader is configured by including several related lines of parameter definitions. Every physical reader configuration includes a line having the following form:

```
com.connecterra.ale.reader.<deviceID>.class = <className>
```

- `<deviceID>` is the name you assign to the reader being configured. The name must be unique among all physical reader name assignments within the `edge.props` file, and must consist only of alphanumeric characters, hyphen (-), underscore (_), and plus sign (+).

The physical reader name is used to refer to the reader within the WebLogic RFID Edge Server Administration Console. It also appears in the `physicalReaderNames` list that is returned as a part of event cycle reports that include data from this reader.

- `<className>` specifies the name of a driver provided by BEA for the specific make and model of the reader. For example, the Reader Simulator is defined as:

```
com.connecterra.ale.reader.SimReadr.class =
com.connecterra.ale.readertypes.ThingMagicMercury4PhysicalReader
```

Accompanying each instance of a reader configuration is a block of additional properties that are specific to that particular reader. The properties for a given physical reader are identified by sharing a common `<deviceID>` within their property names. The properties required within each configuration block depend on the reader make and model – the particular properties required by each reader type are listed in the [RFID Reader Reference](#).

Each provisioned physical reader has one or more logical readers associated with it, one logical reader for each operational antenna. The definition of a logical reader specifies the logical reader’s name, which is used when identifying the logical reader within an event cycle specification.

Each reader configuration line in `edge.props` looks like this:

```
com.connecterra.ale.reader.<deviceID>.<prop1>=<prop1value>
```

The `<deviceID>` is the same for all properties corresponding to a particular physical reader, `<prop1>` is the name of a property, and `<prop1value>` is the value assigned to that property. If a property is identified as optional, you can omit the corresponding line in the `edge.props` file and the default value will be used instead.

See [“Reader Simulator Configuration” on page 8-10](#) for an example of the as-shipped configuration for the Reader Simulator in `edge.props`.

Note: A single `edge.props` file can contain properties definitions for many readers. For testing and development purposes, you may want to keep some definitions (for example, for the simulator) in the file, but inactive. You can prevent the RFID Edge Server from trying to communicate with a reader by commenting out the first line of a reader’s property definitions.

Using Composite Readers

You specify names for logical readers when defining physical readers. You can create additional logical readers by combining existing logical readers. A logical reader created in this way is called a *composite reader*. By defining composite readers, you can decouple applications from decisions you take at deployment time about how many readers are needed to cover a single location.

For example, suppose that today, you have four logical readers covering a location called `LoadingDock23`:

- `LoadingDock23_Reader1`
- `LoadingDock23_Reader2`
- `LoadingDock23_Reader3`
- `LoadingDock23_Reader4`

You specify these reader names in each `ECSpec` that you create for `LoadingDock23`.

Then suppose you discover that you really need five readers to cover `LoadingDock23`. If you specified single logical reader names in each `ECSpec`, then you would need to:

- Add the fifth reader, using the `edge.props` file, or the Administration Console RFID Devices node.
- Go back and edit each `ECSpec` to include the new fifth reader.

Changing every `ECSpec` is undesirable, especially if some applications generate `ECSpec` instances for `LoadingDock23` on the fly.

The alternative is to define a composite reader called `LoadingDock23`. Initially, this composite reader is configured to contain `LoadingDock23_Reader1` through `LoadingDock23_Reader4`. Applications that want to read from `Loading Dock 23` simply specify `LoadingDock23` as the sole logical reader in their `ECSpec` instances.

Then, when you add your fifth reader, all you have to do is:

- Edit the `edge.props` file or use the Administration Console RFID Devices node to:
 - Add the fifth reader.
 - Change the definition of the `LoadingDock23` composite reader to include the fifth reader.
- Leave your `ECSpec` instances unchanged.

For information on how to define composite readers, see [“Defining Composite Readers” on page 8-6](#).

Defining Composite Readers

If you have chosen to configure composite readers through the Composite Readers pane on the Administration Console, see [Using the RFID Edge Server Administration Console](#) for full

instructions on configuring readers. The remainder of this section describes how to define composite readers in `edge.props`.

Use the following lines in `edge.props` to define composite readers:

- `com.connecterra.ale.compositeReader.composite_reader_name.members = logical_reader_1 logical_reader_2`

`composite_reader_name`: The name you want to use for this composite reader.

`logical_reader_1 logical_reader_2`: List the logical (or composite) readers that make up this composite reader. Put a space between each reader name.

For example:

```
com.connecterra.ale.compositeReader.LoadingDock23.members=
LoadingDock23_Reader1 LoadingDock23_Reader2 LoadingDock23_Reader3
LoadingDock23_Reader4
```

Note: Cyclic member specifications among composite reader definitions are not allowed and will be detected.

- `com.connecterra.ale.compositeReader.composite_reader_name.reportFailedMembers = false`

`composite_reader_name`: The name assigned in the statement above to identify this composite reader.

When a reader fails, you can have `ECReports` include either the name of the composite reader that the failed reader belongs to OR the logical reader name of the failed reader.

`true`: Lists failed readers by logical reader name.

`false`: Lists failed reader by composite reader name. This is the default.

Adding a Transient Filter

You can apply a transient (tag) filter to any logical reader that you configure in `edge.props`. Different logical readers may share the same filter settings, or have different settings.

For each transient filter you add, three parameters that control its operation:

- `minReads` – The number of times a tag must be read before being included in the filter (i.e., visible to the event cycle).
- `firmInterval` – The maximum time (in milliseconds) allowed between reads that increase the `minReads` count.

- `expiredInterval` – The maximum duration (in milliseconds) for a tag not to be read before expiring from the filter.

These parameters control the filter in the following way. A tag is considered “soft” until it has been read `minReads` times, with no more than `firmInterval` milliseconds passing between each of those reads. A “soft” tag is not included in the filter’s output, and therefore will not be considered by any active event cycles. If a “soft” tag is not read for more than `firmInterval` milliseconds, the count starts over again the next time the tag is read.

When the count reaches `minReads`, the tag becomes “firm.” A “firm” tag is included in the filter’s output, and will be considered by any active event cycles that use this logical reader. A “firm” tag remains “firm” even if the tag is not read in every read cycle, until it is not read for `expiredInterval` milliseconds. When that happens the tag is considered “expired.” The next time the tag is read, it will be considered “soft”, and the filter process starts again.

Setting `firmInterval` to -1 means that the count for a given tag will continue to increase towards `minReads` regardless of the time between reads, until the filter is reset. Setting `expiredInterval` to -1 causes any “firm” tag to remain “firm” until the filter is reset.

When choosing values for `firmInterval` and `expiredInterval`, you must be aware of the rate at which the logical reader performs read cycles. For most physical reader types, this is the `defaultRate` parameter times the number of active logical readers. If the `firmInterval` is less than this, tags will never become “firm” and no tags will be reported to any event cycle. Likewise, if the `expiredInterval` is less than the `defaultRate` parameter times the number of active logical readers, then it is equivalent to specifying an `expiredInterval` of zero.

To add a transient filter to a logical reader, add the following settings in the `edge.props` file. First, add the following lines to define a named filter (in the example, the filter is named `myfilter1`):

```
com.connecterra.ale.filter.myfilter1.class=  
    com.connecterra.ale.filtertypes.TransientFilterFactory  
com.connecterra.ale.filter.myfilter1.minReads = 3  
com.connecterra.ale.filter.myfilter1.firmInterval = 1400  
com.connecterra.ale.filter.myfilter1.expiredInterval = 1400
```

Then, for each logical reader to which you want to add the filter, add a line like this (in the example, the logical reader is named `myreader`):

```
com.connecterra.ale.logicalReader.myreader.filters = myfilter1
```

To apply the same filter parameters to more than one logical reader, you may specify the same filter name for more than one reader. Even though more than one logical reader refers to the same filter name, each logical reader is processed by a different filter instance.

Using 64-bit Tags

WebLogic RFID Edge Server supports the following 64-bit tag formats as defined by the *EPCglobal Tag Data Standards Version 1.1*:

- General Identifier (GID-I)
- Serialized Global Trade Item Number (SGTIN)
- Serial Shipping Container Code (SSCC)
- Serialized Global Location Number (SGLN)
- Global Returnable Asset Identifier (GRAI)
- Global Individual Asset Identifier (GIAI)
- United States Department of Defense (USDOD)

When encoded onto 64-bit tags, these tag formats require an external translation table to translate the EPC Company Prefix Index field of the tag into an EAN.UCC Company Prefix. EPCGlobal supplies a translation table at this URL (that WebLogic RFID Edge Server uses by default):

<http://www.onsepc.com/ManagerTranslation.xml>

Note: WebLogic RFID Edge Server installations include a copy of this file in the `etc` subdirectory.

Alternatively, you can specify a local file as the source of the translation table by changing the value of `com.connecterra.ale.epcIndexTableURL` in `edge.props` to `file:///c:/mydir/myfile.xml`, where `myfile.xml` has the general form:

```
<GEPC64Table>
<entry index="1" companyPrefix="0037000"/>
<entry index="2" companyPrefix="0041333"/>
...
<entry index="16383" companyPrefix="0614141"/>
</GEPC64Table>
```

Note: The `file:///` (three slashes) is the required format for specifying a file in this context.

If a file name is specified without an absolute path, the path given is assumed to be relative to WebLogic RFID Edge Server's `./etc` directory. You may also specify a list of URLs, separated by spaces:

```
com.connecterra.ale.epcIndexTableURL =  
http://www.onsepc.com/ManagerTranslation.xml file:///c:/mydir/myfile.xml
```

The Edge Server will try each URL in turn, from left to right, until it successfully reads from one of the URLs. You can use this syntax to specify the EPCglobal table as the primary source, and use the local file syntax as a backup in case the EPCglobal site is unreachable.

Using 96-bit Tags

WebLogic RFID Edge Server supports the following 96-bit tag formats as defined by the [EPCglobal Tag Data Standards Version 1.1](#). These tag formats do not require an external translation table.

- General Identifier (GID)
- Serialized Global Trade Item Number (SGTIN)
- Serial Shipping Container Code (SSCC)
- Serialized Global Location Number (SGLN)
- Global Returnable Asset Identifier (GRAI)
- Global Individual Asset Identifier (GIAI)
- United States Department of Defense (USDOD)

Reader Simulator Configuration

The Reader Simulator provides a minimal simulation of a ThingMagic Mercury4 reader with two antennas running on your local system on port 5050. To modify the default Reader Simulator configuration using the Administration Console, you can enter properties into the Reader Configuration dialog box; for information on how to do this, see [Using the RFID Edge Server Administration Console](#).

If you are using `edge.props` for reader configuration, the following properties are the as-shipped defaults for the Reader Simulator:

```
com.connecterra.ale.reader.SimReadr.class =  
com.connecterra.ale.readertypes.ThingMagicMercury4PhysicalReader
```

```
com.connecterra.ale.reader.SimReadr.hostname = localhost
com.connecterra.ale.reader.SimReadr.port = 5050
com.connecterra.ale.reader.SimReadr.defaultRate = 0
com.connecterra.ale.reader.SimReadr.uhf2LogicalReaderName = ConnectTerra2
com.connecterra.ale.reader.SimReadr.uhf1LogicalReaderName = ConnectTerra1
```

See [“Two Approaches to Configuring Readers: edge.props or Administration Console”](#) on [page 8-2](#) for a discussion of these reader-configuration mechanisms.

With minor modifications to the command that starts the Reader Simulator in the `RunReaderSim` script, the simulator can provide a minimal simulation of a Printronix printer. For information on configuring and using the Reader Simulator, see [Using the Reader Simulator](#).

Specifying State Data Persistence

You can configure the Edge Server to either keep or discard state data each time you stop and start the Edge Server. “State data” means:

- The `ECSpec` instances, `PCSpec` instances, `EPCCacheSpec` instances, and subscribers that you create through the ALE and ALEPC APIs.
- `ECSpec`, `PCSpec`, `EPCCacheSpec` information including the number of subscribers for a given `ECSpec`, `PCSpec`, or `EPCCacheSpec`, the number of times it has been activated, and the date/time of last activation and report delivery.
- Reader configuration data for readers configured using the Administration Console.

You configure how you want to handle state data by editing `edge.props`, as described below.

The Edge Server also includes a utility that removes all state data. For information on how to use this utility, see [“Using ClearEdgeServerState to Delete State Data”](#) on [page 8-12](#).

Editing edge.props to Configure State Data

[Table 8-1](#) describes the `edge.props` properties that define how the Edge Server handles state data:

Table 8-1 State Data Values in edge.props

edge.props Property	Description
<code>com.connecterra.ale.p ersistence.disabled = false</code>	This line tells the Edge Server whether or not to keep state data each time you stop and start the Edge Server. true: Discard state data. false: Keep state data.
<code>com.connecterra.ale.p ersistence.directory = ../var/edgestate</code>	Relative path to the directory where you want the Edge Server to store state data.
<code>com.connecterra.ale.p ersistence.allowBadDa ta = false</code>	When it starts, the Edge Server may discover that the state data you have is incomplete or not properly formatted. When this happens, you can tell the Edge Server to either stop, or continue starting with the bad data. true: Continue Edge Server startup, using as much data as it can, and moving the bad data aside. false: Stop startup if the Edge Server encounters bad state data.
<code>com.connecterra.ale.p ersistence.interval = 0</code>	How frequently to save different types of state data. Can be zero or a non zero positive integer (milliseconds). Zero: Tells the Edge Server to save state data ONLY when: <ul style="list-style-type: none"> • An ECSpec is defined or undefined. • An ECSpec is subscribed or unsubscribed. • An ECSpec delivers reports. A non-zero positive integer: Tells the Edge Server to: <ul style="list-style-type: none"> • Save state data under the conditions listed for zero, AND • Save the activation count and last activated time periodically (according to the value of the integer), even when activations do not result in reports being generated.

Using ClearEdgeServerState to Delete State Data

The `ClearEdgeServerState` utility removes all state data that you are storing in your state data directory. After you run `ClearEdgeServerState`, your Edge Server will start with no `ECSpec` instances defined. This `ClearEdgeServerState` utility also removes all dynamic configuration

data. Be sure that you want the Edge Server in a newly installed state before you use this utility.

To run `ClearEdgeServerState`:

1. Stop the Edge Server.
2. Run `ClearEdgeServerState` as appropriate for your environment:

Windows: From a command line in the `RFID_EDGE_HOME\bin` directory, type:

```
ClearEdgeServerState.bat
```

UNIX: From the `RFID_EDGE_HOME/bin` directory, type:

```
ClearEdgeServerState.sh
```

3. `ClearEdgeServerState` displays a confirmation message warning you that running `ClearEdgeServerState` will reset the Edge Server to the state it was in when it was newly installed, and that client applications that depend on Edge Server state may fail.

Note: If you run `ClearEdgeServerState` with the `-force` flag, no confirmation prompt is displayed.

4. If you are sure you want to reset the Edge Server state, type:

```
YES
```

Configuring the HTTP Notification Driver

To configure the HTTP notification driver, you can use the `edge.props` timeout values shown in [Table 8-2](#).

Table 8-2 `edge.props` Timeout Values

Property	Description
<code>connectTimeout</code>	Specifies, in milliseconds, how long the driver will wait to connect to an HTTP endpoint before failing. Defaults to 30000 milliseconds if not specified.
<code>readTimeout</code>	Specifies, in milliseconds, how long the driver will wait for a response before failing. Defaults to 30000 milliseconds if not specified.

For example:

```
com.connecterra.ale.notificationDriver.http.class =
    com.connecterra.ale.notifytypes.HTTPNotificationDriver
com.connecterra.ale.notificationDriver.http.connectTimeout = 5000
com.connecterra.ale.notificationDriver.http.readTimeout = 10000
```

Enabling the SNMP Log Handler

WebLogic RFID Edge Server installations support an SNMP Log Handler, which creates SNMP traps from WebLogic RFID Edge Server log event messages and sends them to one or more configured destinations (called *trap sinks*). Typically, these destinations are SNMP-based Network Management Systems.

The default installation of WebLogic RFID Edge Server does not enable the SNMP Log Handler. To enable it, use the following instructions to edit the `etc/logging.props.edge` file. This file contains Java property definitions that control which log messages are forwarded to which handlers.

1. Add the handler class `com.connecterra.mgmtagent.SNMPLogHandler` to the comma-separated list of handlers in `logging.props.edge`.

```
handlers = com.connecterra.mgmtagent.SNMPLogHandler
```
2. Set the logging level associated with the SNMP Log Handler. We recommend setting the level to either `WARNING` or `SEVERE` to avoid excessive numbers of traps.

```
com.connecterra.mgmtagent.SNMPLogHandler.level= WARNING
```
3. Configure one or more trap sinks as shown below. Each trap sink has a unique name assigned to it, `sink1` in the following example, and up to four configuration properties. The `hostname` property is required; the `port`, `snmpversion`, and `community` properties are optional.

```
com.connecterra.mgmtagent.SNMPLogHandler.trapSink.sink1.hostname =
myMgmtStation.acme.com

# port is an optional property. The default SNMP UDP port is 162
com.connecterra.mgmtagent.SNMPLogHandler.trapSink.sink1.port = 162

# snmpversion specifies the version of the SNMP protocol SNMP traps
# directed to this trapSink will be encoded in. This is an optional
# parameter, which if present must be set to either "v1" or "v2c". The
# default value is "v2c".

com.connecterra.mgmtagent.SNMPLogHandler.trapSink.sink1.snmpversion =
v2c
```

```
# community specifies the community string that appears in SNMP trap
# messages. This is an optional parameter; its default value is "public"
com.connecterra.mgmtagent.SNMPLogHandler.trapSink.sink1.community =
public
```

4. Save your changes and restart the Edge Server. When log events of the type(s) specified are generated, SNMP trap information will be sent to the destination(s) you provided.

The MIB files can be found under `share/mibs` in the WebLogic RFID Edge Server installation directory.

Setting Up the JMS Notification Driver

To use the JMS notification driver, you edit various WebLogic RFID Edge Server configuration files to include JMS specifications, which is covered in this section. In addition, you set up a Java Naming and Directory Interface (JNDI) provider and JMS server, which is covered in [“Setting Up the JNDI Provider and JMS Server” on page 8-17](#).

To use the JMS notification driver, edit the following Edge Server configuration files:

- `RFID_EDGE_HOME/etc/edge.props` (see [“edge.props” on page 8-15](#))
- `RFID_EDGE_HOME/etc/jms.options` (see [“jms.options” on page 8-16](#))
- `RFID_EDGE_HOME/etc/naming.props` (see [“naming.props” on page 8-16](#))

edge.props

Find the notification driver properties, and under the property `com.connecterra.ale.notificationDriver` (shortened to `ND` in the following example), edit the JMS notification driver properties as follows.

1. Find and uncomment the `ND.jms.class` line.

```
com.connecterra.ale.notificationDriver.jms.class =
com.connecterra.ale.notifytypes.JMSNotificationDriver
```

2. Find and uncomment the `ND.jms.default.namingPropertiesFile` line, then set it to the file name of the JNDI naming properties file. The file name may include either an absolute path or a path relative to the location of `edge.props`.

```
com.connecterra.ale.notificationDriver.jms.default.namingPropertiesFile
= naming.props
```

See [“naming.props” on page 8-16](#).

3. Find the `ND.jms.default.namingInitialContextClass` line. Setting this optional property configures the JMS Driver to use the specified class to perform JNDI lookups. The value of this class must be a valid Java class that is available in the system classpath. The value defaults to `javax.naming.InitialContext`, which is used when this property is not specified. Other values for this class are:

```
javax.naming.directory.InitialDirContext
```

```
javax.naming.ldap.InitialLdapContext
```

See the Javadoc for these classes when deciding which class to use.

jms.options

Edit the `JMS_LIB` environment variable to indicate the location of the `JAR` and `ZIP` files provided by your JMS vendor that provide the naming context factory class (as you previously specified in `edge.props`) and all other classes required by JMS clients for your JMS vendor's implementation. Vendor-specific samples of JMS options are in `samples/JMSSamples`.

The exact convention for setting this environment variable depends on your operating system and shell environment.

- Windows example: `set JMS_LIB=d:\programs\libraries\jmsclientlib.jar`
- UNIX example: `JMS_LIB=/opt/lib/jmsclientlib.jar`

For WebLogic Server, `JMS_LIB` must contain the location of `wljmsclient.jar`; `wlclient.jar` must also be in the same path. These files are normally installed in the WebLogic Server product installation directory (`WL_HOME`) in `WL_HOME/server/lib`; for example, in `/bea/weblogic92/server/lib`. An alternative is to add both `JAR` files to the `CLASSPATH`.

naming.props

The naming properties file is used to initialize the instance of the `javax.naming.Context` class. The names and values of the properties specified in the file are used as Context environment properties, as with, for example, the properties from the BEA `naming.props` file:

```
java.naming.provider.url=t3://localhost:7001
```

```
java.naming.factory.initial=weblogic.jndi.WLInitialContextFactory
```

A `naming.props` file resides in the `RFID_EDGE_HOME/etc` directory. You can copy other sample files from vendor-specific examples located in:

```
RFID_EDGE_HOME/samples/JMSSamples/<vendor_name>/etc
```

To create a naming properties file:

1. Copy a `naming.props` file from the appropriate `JMSSamples/<vendor_name>/etc` directory to the `RFID_EDGE_HOME/etc` directory. (You do not have to name the copy of the file `naming.props`. What matters is that the file name you use matches the value you set for the `namingPropertiesFile` property in the next step.)

2. Specify the file name as the value for the following property in `edge.props`:

```
com.connecterra.ale.notificationDriver.jms.default.namingPropertiesFile
```

For example, if you copy the BEA `naming.props` file to `etc/naming.props.BEA`, the `edge.props` entry would be:

```
com.connecterra.ale.notificationDriver.jms.default.namingPropertiesFile
= ../etc/naming.props.BEA
```

Note: In general, the properties in a naming properties file are considered default values, and can be overridden by a notification subscription URI (by adding the equivalent property to the notification URI as a query parameter). However, when configuring a SAF client, you cannot override naming properties by using a notification subscription URI. SAF only uses the properties in the naming properties file.

Setting Up the JNDI Provider and JMS Server

To use WebLogic RFID Edge Server's JMS notification driver, you need to set up the following components in your environment:

- Java Naming and Directory Interface (JNDI)

The WebLogic RFID Edge Server JMS notification driver in the Edge Server uses the JNDI provider to obtain the necessary JMS objects for sending JMS messages. Examples of JNDI providers include:

- LDAP provider
- File system provider
- JNDI provider built into an application server

You will have to configure the JNDI provider with a connection factory and queue name along with their corresponding JMS objects. Each vendor provides administrative tools for administering JMS objects.

- JMS server

You need to configure the JMS server with the appropriate destinations: queue or topic. Each vendor provides administrative tools for configuring the JMS server.

The following sections include configuration instructions for the following vendors:

- “BEA® WebLogic Server® Configuration” on page 8-18
- “IBM WebSphere Configuration” on page 8-19
- “JBoss Application Server Configuration” on page 8-21
- “Sun Java System Application Server Configuration” on page 8-22
- “TIBCO Enterprise for JMS Configuration”

BEA® WebLogic Server® Configuration

Use the BEA WebLogic Server Administration Console (for example, <http://<wlhost>:7001/console>) to configure the JNDI provider and JMS server.

For example, use the following Administration Console page flows:

- Configure JMS Server:
 - Services, Messaging, JMS Servers
 - Create a JMS server. Example: `jms_server1`
 - For information on configuring JMS in WebLogic Server 9.x, see *Configuring and Managing WebLogic JMS*.
- Configure JNDI Provider:
 - Services, JMS, Servers, `jms_server1`, Configure Destinations, Configure a new JMS Queue
 - Create a new queue with name (example: `TestQ`) and JNDI name (example: `jms/TestQ`)
 - Note that BEA provides `weblogic.jms.ConnectionFactory` and `weblogic.jms.XAConnectionFactory` as default connection factories.
 - For information on WebLogic JNDI, see *Programming WebLogic JNDI*.

For additional information, see the WebLogic Server System Administration Documentation:

- For 8.1, see: <http://e-docs.bea.com/wls/docs81/admin.html>
- For 9.x, see: <http://e-docs.bea.com/wls/docs92/admin.html>

IBM WebSphere Configuration

- “WebSphere Application Server with Embedded Messaging Configuration” on page 8-19
- “WebSphere Application Server with Full WebSphere MQ Configuration” on page 8-20
- “WebSphere MQ Stand-alone Configuration” on page 8-20
- “Additional IBM Product Information” on page 8-21

WebSphere Application Server with Embedded Messaging Configuration

Use the WebSphere Application Server Administration Console (for example:

`http://<was_host>:9090/admin`) to configure the Internal JMS Server and to configure a listener port.

For example, use the following Administration Console page flows:

- Configure Internal JMS Server:
 - Servers, Application Servers, `server1`, Server Components, JMS Servers
 - Add queue name (example: `TestQ`)
- Configure Listener Port:
 - Servers, Application Servers, `server1`, Message Listener Service, Listener Ports, New
 - Specify Listener Port Name (for example: `JMSTestListener`)
 - Specify Connection Factory JNDI name (for example: `jms/TestQCF`)
 - Specify Destination JNDI name (for example: `jms/TestQ`)
- Configure WebSphere JMS Provider:
 - Resources, WebSphere JMS Provider, WebSphere Queue ConnectionFactories, New, Create an object for ConnectionFactory “TestQCF” with JNDI name “jms/TestQCF”.
 - Resources, WebSphere JMS Provider, WebSphere Queue Destinations, New, Create an object for Queue “TestQ” with JNDI name “jms/TestQ”.
- Apply Changes to Master Configuration:
 - Click on Save link and then Save button to apply changes to master configuration.
- Restart Application Server:

Stop the application server and then start the application server to utilize the saved master configuration.

WebSphere Application Server with Full WebSphere MQ Configuration

Use the WebSphere Application Server Administration Console (for example: `http://<was_host>:9090/admin`) to configure a listener port.

For example, use the following Administration Console page flows:

- **Configure Listener Port:**
Servers, Application Servers, `server1`, Message Listener Service, Listener Ports, New
Specify Listener Port Name (for example: `MQJMSTestListener`)
Specify Connection Factory JNDI name (for example: `jms/MQTestQCF`)
Specify Destination JNDI name (for example: `jms/MQTestQ`)
- **Apply Changes to Master Configuration:**
Click on Save link and then Save button to apply changes to master configuration.
- **Restart Application Server:**
Stop the application server and then start the application server to utilize the saved master configuration.

WebSphere MQ Stand-alone Configuration

Use the WebSphere MQ Explorer to create a queue manager (for example: `QM_host1`) and to create a queue (for example: `MQ_JMS_Q`) under the queue manager.

Use the JMSAdmin tool to define connection factories and queues.

- Update `JMSAdmin.config` file with appropriate values for `INITIAL_CONTEXT_FACTORY` and `PROVIDER_URL` environment variables.
- Update JMSAdmin script to set and use the classpath with the JAR files in `Java/bin` of the WebSphere MQ installation directory.

For example, use the JMSAdmin tool to define a connection factory with JNDI name of `jms/MQTestQCF` and a queue with JNDI name of `jms/MQTestQ` as follows:

```
InitCtx> define qcf(jms/MQTestQCF) qmgr(QM_host1)
InitCtx> define q(jms/MQTestQ) qmgr(QM_host1) queue(MQ_JMS_Q)
```

Additional IBM Product Information

For additional information, see the IBM Product Publications:

<http://www.ibm.com/support/publications/us/>

The following publications are recommended:

- IBM WebSphere Application Server and WebSphere MQ Family Integration Redbook (SG24-6878)

<http://www.redbooks.ibm.com/abstracts/sg246878.html>

- IBM WebSphere Application Server, Version 5.1: Getting Started (SC31-6323)

<http://publibfp.boulder.ibm.com/epubs/pdf/c3163231.pdf>

- IBM WebSphere MQ: Using Java:

<http://publibfp.boulder.ibm.com/epubs/pdf/csqzaw12.pdf>

- IBM Tivoli Directory Server: Administration Guide. Links to Tivoli product documentation are available at:

<http://www-306.ibm.com/software/tivoli/products/directory-server/>

JBoss Application Server Configuration

JBoss provides a default connection factory (with JNDI name of `ConnectionFactory`) which can be leveraged without any additional JNDI configuration.

For EJBs (Message Driven Beans configured to receive JMS messages) deployed in the JBoss application server, the JBoss-specific EJB deployment descriptor (`jboss.xml`) contains the destination JNDI name (example: `TestQ`) to be configured. Note that JBoss automatically configures the destination JNDI name in the “queue” JNDI context for queues (example: `queue/TestQ`) or “topic” JNDI context for topics (example: `topic/TestTopic`).

For more advanced JMS or JNDI configurations, use the JBoss JMX administrative console (example: `http://<jboss_host>:8080/jmx-console`) to configure the JMS server and JNDI provider.

For more information, see the JBoss Administration and Development Documentation:

<http://jboss.org/docs/index>

Sun Java System Application Server Configuration

Use the Application Server Admin Console (example: `http://<sun_host>:4848/asadmin`) to configure the JNDI provider and JMS server.

For example, use the following Administration Console page flows:

- Configure JMS Server and JNDI Settings:

Java Message Service, JMS Hosts

Java Message Service, Connection Factories, New

Create a new connection factory with JNDI name (example: `jms/TestQCF`), type of `javax.jms.QueueConnectionFactory`, and resource enabled.

Java Message Service, Physical Destinations, New

Create a new physical destination with name (example: `PhysicalQueue`) and type of `queue`.

Java Message Service, Destination Resources, New

Create a new connection factory with JNDI name (example: `jms/TestQ`), type of `javax.jms.Queue`, and resource enabled.

Add additional property called `Name` with value of `PhysicalQueue`.

- Restart Application Server:

Stop the application server and then start the application server to utilize the new configuration.

For additional information, see the Sun Java System Application Server Administration Guide. The Platform Edition 8.2 manual is available at:

<http://docs.sun.com/app/docs/doc/819-4712>

TIBCO Enterprise for JMS Configuration

Use the JMS Administration Tool to create JMS connection factories and queues.

For example, after starting the JMS Server, use the JMS Administration Tool to define a connection factory with JNDI name of `TestQCF` and a queue with JNDI name of `TestQ` as follows:

```
> connect host1:7222
```

```
tcp://host1:7222> create factory TestQCF queue
tcp://host1:7222> create queue TestQ
```

For additional information, see the TIBCO Enterprise for JMS User's Guide, located in the installation directory of TIBCO Enterprise for JMS:

JMS/doc/pdf/tib_jms_users_guide.pdf

Using the WebLogic JMS Store-and-Forward (SAF) Client

The WebLogic JMS SAF Client feature provides a store-and-forward mechanism whereby stand-alone JMS clients can reliably send messages to server-side JMS destinations, even when a JMS client cannot temporarily reach a destination (for example, due to a temporary network connection failure). While disconnected from the server, messages sent by a JMS SAF client are stored locally on the client file system and are forwarded to server-side JMS destinations when the client reconnects.

For detailed information, see [Reliably Sending Messages Using the JMS SAF Client](#) in *Programming Stand-alone Clients* and *Messaging (JMS) for BEA WebLogic Server® 9.2*.

Configuring the Edge Server To Use Client-Side JMS SAF

These interoperability guidelines apply when configuring a JMS SAF client:

- Java Runtime—each client machine must have the J2SE 1.4 or higher installed.
- WebLogic Server Versions—the JMS SAF client system only works with WebLogic Server 9.2 and later. On the client-side, the JMS SAF client code must be running against WebLogic Server JAR files that are release 9.2 or later.

The RFID Edge Server installs the `9.2 weblogic.jar` file in `RFID_EDGE_HOME/lib`.

Prerequisites—Before configuring the Edge Server to use client-side JMS SAF:

- Configure a JMS server, JNDI provider, and destination queues or topics. See [Setting Up the JNDI Provider and JMS Server, BEA WebLogic Server Configuration](#).
- Uncomment the JMS notification driver properties in `edge.props`, as described in [Setting Up the JMS Notification Driver, edge.props](#).

Note: When using the RFID Administration Console to configure an ECSpec JMS subscriber for a Store-and-Forward (SAF) client, if you edit the Naming Service Message Properties values, you must restart the Edge Server for your changes to take effect. In addition, when configuring a subscriber for a SAF client, it is not possible

to override naming properties in the `naming.props` file from the RFID Administration Console. (Note however, that when using the console to configure standard non-SAF JMS properties, the console settings do override the naming properties in `naming.props`.)

Follow these steps to configure the Edge Server to use client-side SAF JMS Notifications:

1. In WebLogic Server, use the `ClientSAFGenerate` utility to create a JMS SAF client configuration XML file and then copy it to the `/etc` directory in your RFID Edge Server installation; for example, `RFID_EDGE_HOME/etc/SAFClient-jms.xml`

For detailed instructions, see [Generating a JMS SAF Client Configuration File in Programming Stand-alone Clients](#).

Alternatively, edit the sample JMS SAF client configuration XML file located at `RFID_EDGE_HOME/etc/SAFClient-jms.xml` to contain your JMS connection-specific properties.

Note: You must enable HTTP tunneling in WebLogic Server or change the protocol from `HTTP` to `t3` in the SAF client configuration file `loginURL` element. See [Listing 8-1](#). For more information on enabling tunneling, see [Configure HTTP Protocol](#) in the WebLogic Server *Administration Console Online Help*.

Note: All JMS configuration modifications require you to re-generate the JMS SAF client configuration XML file and to copy the updated file to the client machine.

2. Create encrypted passwords for remote SAF contexts using the WebLogic `ClientSAFEncrypt` utility and then copy the encrypted remote passwords in the JMS SAF client configuration file. See the sample code snippet in [Listing 8-1](#).

For detailed instructions, see [Encrypting Passwords for Remote JMS SAF Contexts in Programming Stand-alone Clients](#).

Listing 8-1 SAF Client Configuration File Code Snippet

```
<saf-remote-context name="RemoteContext0">
  <saf-login-context>
    <loginURL>t3://localhost:7001</loginURL>
    <username>weblogic</username>
    <password-encrypted>{Algorithm}PBEWithMD5AndDES{Salt}lfTtxtv1rp8
      ={Data}+DVLEh419/DSQwIHIEoQ4w==</password-encrypted>
    </saf-login-context>
  </saf-remote-context>
```

3. Specify a special initial JNDI provider to look up the remote JMS connection factories and destinations specified in the JMS SAF client configuration file. Configure the following properties in `RFID_EDGE_HOME/etc/naming.props`:

- `java.naming.provider.url=file:pathnameToSAFclient.xml`

For example,

- `java.naming.provider.url=file:///c:\\2.1.0\\rfid_edge21\\etc\\SAFClient-jms.xml`

- `java.naming.factory.initial=weblogic.jms.safclient.jndi.InitialContextFactoryImpl`

- `java.naming.security.credentials=the key-password text you specified when generating an encrypted password in step 2.`

4. Save your changes and restart the Edge Server.
5. To use JMS SAF, subscribe an ECSpec to a JMS topic or queue.

If the JMS server or destination queue or topic is unavailable, messages will be stored locally on the client. The default location for stored messages is in the `RFID_EDGE_HOME/etc/stores/` directory.

6. To disable JMS SAF, re-comment the JMS notification driver properties in `edge.props` (see [“edge.props” on page 8-15](#)) and restart the Edge Server.

What's Next: Developing for the ALE and ALEPC APIs

You can now start your own application development, using the ALE API. For complete reference information, sample applications, and code walkthroughs, see [Programming with the ALE and ALEPC APIs](#).

Configuring WebLogic RFID Edge Server

Uninstalling the Software

The following sections provide procedures for uninstalling the software:

- [“About the Uninstallation Program” on page 9-1](#)
- [“Uninstalling Your Software in Graphical Mode”](#)
- [“Uninstalling Your Software in Console Mode” on page 9-4](#)
- [“Reinstalling Your Software” on page 9-6](#)

About the Uninstallation Program

The following sections describe how to uninstall your BEA software on Windows and UNIX systems. You can uninstall the software using graphical, console, or silent mode. To run the graphical-mode uninstallation program, your console must support a Java-based GUI. If the uninstallation program determines that your system cannot support a Java-based GUI, it automatically starts running in console mode.

You can uninstall individual components of your product distribution, or the entire installation. Dependency checking in the uninstaller ensures that the appropriate components are uninstalled.

The uninstallation program does not remove the BEA Home directory associated with the installation, the JDK, or any user-created domains. Only the components that were installed by the installation program can be removed by the uninstallation program. If you choose to uninstall the entire installation, the uninstallation program also removes the product directory associated with the installation *unless* one of the following is true:

- The product directory contains user-created configuration or application files—*the uninstallation program does not delete user-created configuration files, application files, or domains.*
- The complete installation was not uninstalled. If an individual component is uninstalled, only the installation directory for that component is removed; the installation directories for other components are unaffected.
- The uninstallation program was invoked from within the product directory structure—specifically, from within the `uninstall` directory. (To remove all components, run the uninstallation program from a directory that is not under `BEA_HOME` or `RFID_EDGE_HOME`.)

Uninstalling Service Packs and Rolling Patches

If you have installed a service pack or rolling patch, you can revert your system installation to an earlier version of the release as follows:

- You can revert to the prior service pack installation on your system.
- You can revert a rolling patch upgrade to the service pack on which the rolling patch is based. (Rolling patches are cumulative: each rolling patch replaces all earlier rolling patches on a particular service pack base.) You cannot revert to an earlier rolling patch, however.

Note: If you install additional components after installing a service pack or rolling patch, you cannot roll back to any previous versions of the product.

Uninstalling Your Software in Graphical Mode

To uninstall the complete product installation, or individual components, in graphical mode:

1. Shut down any servers that are running. If any a server is configured as a Windows service, stop the service(s) before uninstalling the software.
2. Start the uninstallation program as described in [Table 9-1](#).

Table 9-1 Starting the Uninstallation Program in Graphical Mode

To start the uninstallation program on this platform . . .	Perform the following steps . . .
Windows	<ol style="list-style-type: none"> From the Windows Start menu, choose Start → Programs → BEA WebLogic RFID Edge Server <version> → Uninstall RFID Edge Server. The BEA Uninstaller Welcome window is displayed. Proceed to step 3.
UNIX	<ol style="list-style-type: none"> Change directory (<code>cd</code>) to a location that is not under <code>BEA_HOME</code> or <code>RFID_EDGE_HOME</code> (the directory in which you installed your WebLogic RFID Edge Server software.) For example, if <code>BEA_HOME</code> is <code>/usr/local/boa</code>, and <code>RFID_EDGE_HOME</code> is <code>/usr/local/boa/rfid_edge20</code>, you could use <code>/tmp</code> as the location; for example: <pre># cd /tmp</pre> Run the <code>uninstall.sh</code> script located in the following directory: <code>RFID_EDGE_HOME/uninstall</code> For example: <pre>#/usr/local/boa/rfid_edge20/uninstall/uninstall.sh</pre> The BEA Uninstaller Welcome window is displayed. <p>Note: If your system supports a graphical user interface, the uninstallation program starts in graphical mode. If your system does not support a graphical user interface, the uninstallation program starts in console mode. If console mode is started, see “Uninstalling Your Software in Console Mode” on page 9-4 for instructions.</p>

- Click **Next** to start the uninstall program.
- In the Choose Components window is displayed, select the components to uninstall by selecting or clearing the appropriate check boxes. Then click **Next**. By default, all installed components are selected, indicating that they will be removed.
- Optionally, click **Details** to view the log file that lists the uninstalled components.
- Click **Done** in the BEA Uninstaller window to exit the uninstallation program.

Uninstalling Your Software in Console Mode

To uninstall the complete product installation, or individual components, by using the command-line interface:

1. Shut down any servers that are running. If a server is configured as a Windows service, stop the service(s) before uninstalling the software.
2. Start the uninstallation program as described in [Table 9-2](#).

Table 9-2 Starting the Uninstallation Program in Console Mode

To start the uninstallation program on this platform . . .	Perform the following steps . . .
Windows	<ol style="list-style-type: none">1. Open a Command Prompt window and go to a directory that is not under <code>BEA_HOME</code> or <code>RFID_EDGE_HOME</code> (the directory in which you installed your WebLogic RFID Edge Server software.) For example, if <code>BEA_HOME</code> is <code>c:\bea</code>, and <code>RFID_EDGE_HOME</code> is <code>c:\bea\rfid_edge20</code>, you could use <code>c:\</code> as the location; for example: <pre># cd c:\</pre>2. Run the <code>uninstall</code> command located in the following directory: <code>RFID_EDGE_HOME\uninstall</code> For example: <pre>> c:\bea\rfid_edge20\uninstall\uninstall -mode=console</pre>The Welcome text is displayed.

Table 9-2 Starting the Uninstallation Program in Console Mode

To start the uninstallation program on this platform . . .	Perform the following steps . . .
UNIX	<ol style="list-style-type: none"> 1. Change directory (<code>cd</code>) to a location that is not under <code>BEA_HOME</code> or <code>RFID_EDGE_HOME</code> (the directory in which you installed your WebLogic RFID Edge Server software.) For example, if <code>BEA_HOME</code> is <code>/usr/local/boa</code>, and <code>RFID_EDGE_HOME</code> is <code>/usr/local/boa/rfid_edge20</code>, you could use <code>/tmp</code> as the location; for example: <pre># cd /tmp</pre> 2. Run the <code>uninstall.sh</code> script located in the following directory: <code>RFID_EDGE_HOME/uninstall</code> For example: <pre># /usr/local/boa/rfid_edge20/uninstall/uninstall.sh -mode=console</pre> The Welcome text is displayed.
	<ol style="list-style-type: none"> 3. Press Enter or type <code>next</code> to proceed to the next panel of the uninstallation program. Note: Instead of typing complete words when you want to enter <code>[Exit]</code>, <code>[Previous]</code>, and <code>[Next]</code>, you can use the following one-letter shortcuts: <code>x</code>, <code>p</code>, and <code>n</code>, respectively. 4. In the Choose Components window, select the components you want to uninstall. By default, all installed components are selected, indicating that they will be removed. To leave a component installed on your system, type the numeric code for that component on the command line, exactly as it appears within the brackets. Dependency checking is performed to ensure that you do not uninstall a component that is required by another component. 5. Press Enter or type <code>next</code> to proceed with the uninstallation process. 6. When the uninstallation process is complete, press Enter or type <code>exit</code> to complete the uninstallation and exit the uninstallation program.

Reinstalling Your Software

You cannot reinstall the same version of any BEA product on top of a previously installed version of the same product in the same BEA Home directory or in the same file location. You can, however, add products and product components to an existing installation. For example, you can install WebLogic Server during one installation, and WebLogic RFID Edge Server during a separate installation.

To reinstall the same version of one of the product components or the entire distribution in the same location, you must first uninstall the previous installation.

If you try to install a complete copy of a BEA product's software in a BEA Home directory that already contains a complete installation, an error message is displayed. Click or type **OK** to return to the Choose BEA Home directory prompt.

At the prompt, choose one of the following options:

- To continue installing the software using a different BEA Home directory, select an existing BEA Home directory that does not contain a previous installation, or create a new BEA Home directory.
- Exit the installation program. If you want to reinstall your BEA Products software in the same BEA Home, you must uninstall the previous installation. You can invoke the uninstall program appropriate for your platform, as described in one of the following sections:
 - [“Uninstalling Your Software in Graphical Mode”](#) on page 9-2
 - [“Uninstalling Your Software in Console Mode”](#) on page 9-4

Then reinstall the software as described in [Chapter 3, “Starting the Installation Program.”](#)

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