



BEA WebLogic Java Adapter for Mainframe

Installation Guide

BEA WebLogic Java Adapter for Mainframe 4.2
Document Edition 4.2
July 2001

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About This Document

The BEA WebLogic Java Adapter for Mainframe product (hereafter referred to as JAM) is a gateway connectivity application that enables client/server transactions between Java applications and OS/390 Customer Information Control System (CICS) or Information Management System (IMS) programs. In addition to the runtime environment that provides the gateway connectivity, JAM also provides tools for developing cooperative Java applications.

This document provides the following topics on installing JAM:

- “Preparing for Installation” describes tasks you may need to consider before installing and running JAM.
- “Installing the Software” provides installation information for JAM.

What You Need to Know

This document is intended for system installers who will install the BEA WebLogic Java Adapter for Mainframe product.

e-docs Web Site

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

How to Print the Document

A PDF version of this document is available on the JAM documentation Home page on the e-docs Web site (and also on the installation CD). You can open the PDF in Adobe Acrobat Reader and print the entire document (or a portion of it) in book format. To access the PDFs, open the JAM documentation Home page, click the PDF files button, and select the document you want to print.

If you do not have the Adobe Acrobat Reader, you can get it for free from the Adobe Web site at <http://www.adobe.com/>.

Related Information

The following BEA publications are available for JAM 4.2:

- *BEA WebLogic Java Adapter for Mainframe Release Notes*
- *BEA WebLogic Java Adapter for Mainframe Introduction*
- *BEA WebLogic Java Adapter for Mainframe Installation Guide*
- *BEA WebLogic Java Adapter for Mainframe Configuration and Administration Guide*
- *BEA WebLogic Java Adapter for Mainframe Programming Guide*
- *BEA WebLogic Java Adapter for Mainframe Workflow Processing Guide*
- *BEA WebLogic Java Adapter for Mainframe Reference Guide*
- *BEA WebLogic Java Adapter for Mainframe Scenarios Guide*

Contact Us

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

In your e-mail message, please indicate that you are using the documentation for the BEA WebLogic Java Adapter for Mainframe 4.2 release.

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

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

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

Documentation Conventions

The following documentation conventions are used throughout this document.

Convention	Item
blue text	Indicates a hypertext link in PDF or HTML
<i>italics</i>	Indicates emphasis or book titles or variables.

Convention	Item
"string with quotes"	Indicates a string entry that requires quote marks.
UPPERCASE TEXT	Indicates generic file names, device names, environment variables, and logical operators. <i>Examples:</i> LPT1 SIGNON OR
monospace text	Indicates code samples, commands and their options, data structures and their members, data types, directories, and file names and their extensions. Monospace text also indicates text that you must enter from the keyboard. <i>Examples:</i> #include <iostream.h> void main () the pointer psz chmod u+w * \tux\data\ap .doc tux.doc BITMAP float
monospace boldface text	Identifies significant words in code. <i>Example:</i> void xa_commit ()
{ }	Indicates a set of choices in a syntax line. The braces themselves should never be typed.
[]	Indicates optional items in a syntax line. The brackets themselves should never be typed. <i>Example:</i> buildclient [-v] [-o name] [-f file-list]... [-l file-list]...
	Separates mutually exclusive choices in a syntax line. The symbol itself should never be typed.

Convention	Item
...	<p>Indicates one of the following in a command line:</p> <ul style="list-style-type: none">■ That an argument can be repeated several times in a command line■ That the statement omits additional optional arguments■ That you can enter additional parameters, values, or other information <p>The ellipsis itself should never be typed.</p> <p><i>Example:</i></p> <pre>buildclient [-v] [-o name] [-f file-list]... [-l file-list]...</pre>
. . . .	<p>Indicates the omission of items from a code example or from a syntax line.</p> <p>The vertical ellipsis itself should never be typed.</p>



1 Preparing for Installation

This section contains information about the pre-installation preparation that is necessary before installing the BEA WebLogic Java Adapter for Mainframe (JAM) product.

Action List

Before you prepare for your JAM installation, see the following action list and refer to the appropriate information sources.

Your action...	Refer to...
1 Complete all prerequisite tasks.	“Prerequisites”
2 Determine your configuration.	“Determining Your Configuration” and “Considering Requirements for Other Components”
3 Consider requirements for other components.	“Considering Requirements for Other Components”
4 Install the prerequisite software.	“Installing the Prerequisite Software”
5 Verify SNA stack installation (optional).	“Verifying SNA Stack Installation (Optional)”

1 *Preparing for Installation*

Your action...	Refer to...
6 Verify BEA WebLogic Server installation.	“Verifying WebLogic Server Installation”
7 Proceed to installation.	“What Do I Do Next?”

Prerequisites

Before you prepare for installation, you should complete the following task:

Your action...	Refer to...
1 You should have verified that system requirements have been met.	<i>BEA WebLogic Java Adapter for Mainframe Introduction and Release Notes</i>

Determining Your Configuration

Your system configuration is important to consider when planning the installation of the JAM product. The primary components of JAM are:

- JAM gateway
- Communications Resource Manager (CRM)

The JAM gateway must be installed on the same machine in the same BEA Home directory as WebLogic Server. The CRM can be installed on the mainframe, the same computer as the JAM gateway, or on another UNIX or Windows NT computer.

The location of the CRM determines the type of JAM configuration. The three different configurations are defined as follows:

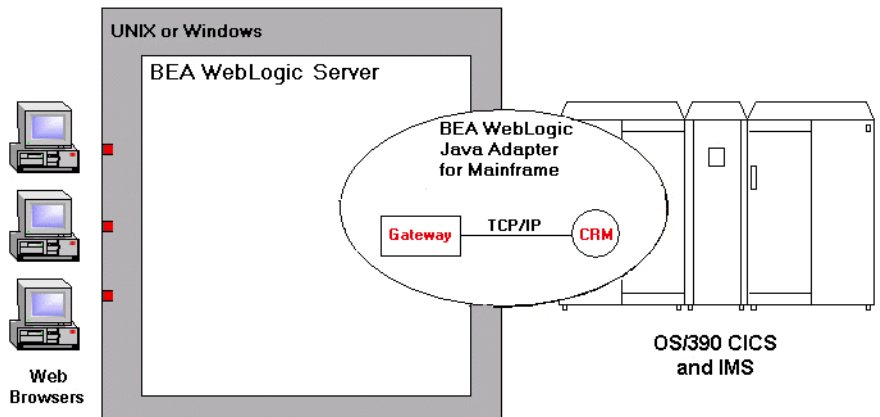
- Distributed Configuration: CRM installed on mainframe
- Local Configuration: CRM installed on same machine as JAM gateway
- Non-Mainframe Distributed Configuration: CRM installed on UNIX or Windows NT machine other than the one where the JAM gateway is installed

The diagrams in the following sections show examples of the relationships of the JAM components in the three types of configurations. For both types of distributed configurations, you must run the installation program more than once.

Distributed Configuration

In a distributed configuration, the CRM is installed on the mainframe. If the CRM is installed on the mainframe, there is no need to install a third-party SNA stack. However, you must specify your Virtual Telecommunications Access Method (VTAM) in the JAM gateway configuration file (for information about configuration, see the *BEA Java Adapter for Mainframe Configuration and Administration Guide*). Figure 1-1 illustrates the distributed configuration architecture.

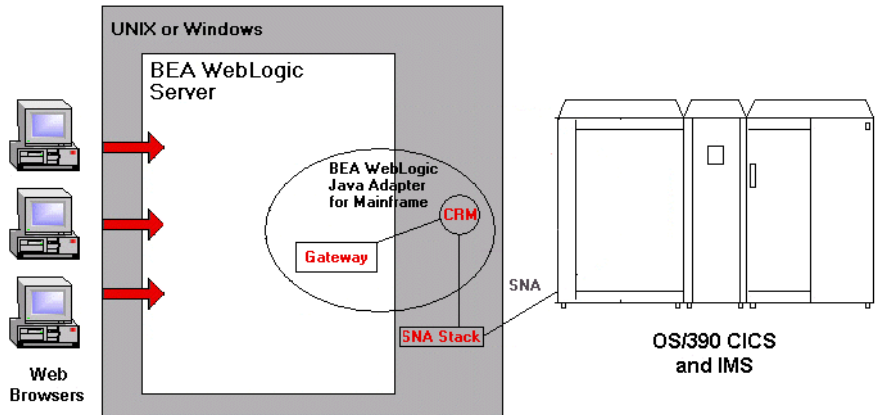
Figure 1-1 Distributed Configuration JAM Architecture



Local Configuration

The local configuration combines the JAM gateway, WebLogic Server, and the CRM with the stack (PU2.1 server) on the same UNIX or Windows machine. It employs the IBM proprietary SNA protocol for transactions with the mainframe via the stack.

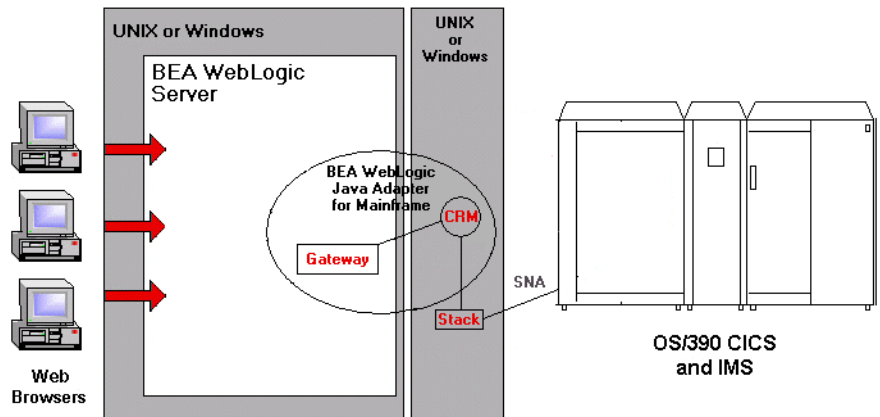
Figure 1-2 JAM Local Configuration



Non-Mainframe Distributed Configuration

The non-mainframe distributed configuration separates the JAM gateway from the CRM on different UNIX or Windows NT machines. It employs Transmission Control Protocol/Internet Protocol (TCP/IP) connectivity between the JAM gateway and the CRM, as well as SNA connectivity to the mainframe environment(s). This configuration gives you the flexibility to deploy WebLogic Server separately from the CRM at installations that require WebLogic Server on a platform other than the one on which the SNA stack is running. Note that this configuration requires a one-to-one relationship between the local JAM gateway and the remote CRM.

Figure 1-3 Non-Mainframe JAM Distributed Configuration



Considering Requirements for Other Components

Because JAM interacts with mainframe applications, be sure to involve your mainframe system support personnel early in the process of planning and installing your JAM product. In a large shop, separate individuals may be responsible for Multiple Virtual System (MVS), Virtual Telecommunications Access Method

(VTAM), Information Management System (IMS), and Customer Information Control System/Enterprise Systems Architecture (CICS/ESA). Make sure everyone is involved.

Whether your JAM product is installed on Windows NT, UNIX, or a mainframe, you will need to make sure your system meets the appropriate requirements and that supporting software is operating correctly. The following sections describe mainframe and non-mainframe requirements, and verification of supporting software installations.

Mainframe Requirements

The CRM component of JAM may or may not be located on the mainframe environment; however, mainframe configurations affect how JAM works. The following configurations are required on the mainframe in order to conduct operations within the WebLogic Server environment:

- Established VTAM configuration
- CICS/ESA Logical Unit (LU) configured with proper connections created and sessions defined
- If using IMS, APPC and transaction definitions must exist for that environment

Non-Mainframe Requirements

A non-mainframe environment is a UNIX-based or Windows NT-based machine running the JAM product. The software is fully bi-directional, supporting the local system as either a client or server. This environment consists of the following components:

- Hardware, which is any workstation and network interface supported by the required software
- Operating system software and SNA protocol stacks (PU servers) if the CRM is not installed on the mainframe (Refer to the *BEA WebLogic Java Adapter for Mainframe Release Notes* for a complete listing.)

Stack installation should also be completed and verified. (Refer to vendor documentation for stack installation and verification information.)

- WebLogic Server (Refer to the *BEA WebLogic Java Adapter for Mainframe Release Notes* for the precise version and service pack required.)
- BEA WebLogic Integration components as follows:
 - BEA WebLogic Process Integrator
 - BEA WebLogic XML/Non-XML Translator

(if you are using JAM for workflow processing in WebLogic Process Integrator)
For more information on using JAM for workflow processing, see the *BEA Java Adapter for Mainframe Workflow Processing Guide*. Refer to the *BEA WebLogic Java Adapter for Mainframe Release Notes* for the version and service pack required for these products.

Installing the Prerequisite Software

The following software should be installed prior to installing the JAM product:

1. Install and configure a supported SNA stack on the operating system where the CRM will be installed.

Note: Installation of an SNA stack is not required if you are installing the CRM on the mainframe.

A properly configured SNA protocol stack is required for the CRM to communicate with a mainframe.

Note: Refer to the *BEA WebLogic Java Adapter for Mainframe Release Notes* for a list of supported SNA stacks and refer to the SNA stack vendor's documentation on configuring for your environment. Ensure that the stack is properly installed and that the configuration can be activated.

2. Install WebLogic Server. Refer to the *BEA WebLogic Java Adapter for Mainframe Release Notes* for specific release and service pack required.

Refer to the WebLogic Server product documentation for installation information.

3. Make sure that your `JAVA_HOME` and `PATH` environment variables are set so that they are pointing to the JDK that is installed with WebLogic Server. Also, the `JAVA_HOME\bin` directory must be the first path listed in your `PATH` environment variable. The following are examples of settings for these environment variables if your BEA Home directory is `c:\bea`:

`JAVA_HOME: c:\bea\jdk130`

`PATH: c:\bea\jdk130\bin;%PATH%`

Instructions for setting the `JAVA_HOME` and `PATH` environment variables on UNIX are included as part of the installation instructions. See “Installing on UNIX in Console Mode.”

4. If you want to use the JAM Plug-in for WebLogic Process Integrator (contained in `jampi.jar`), install and configure the following components of WebLogic Integration:
 - WebLogic Process Integrator
 - WebLogic XML/Non-XML Translator

Note: WebLogic Process Integrator and WebLogic XML/Non-XML Translator are available only as part of WebLogic Integration. Refer to the *BEA WebLogic Java Adapter for Mainframe Release Notes* for specific release and service pack required.

Verifying SNA Stack Installation (Optional)

Proper stack installation will ensure that your applications deploy and operate correctly. Complete the following installation tasks in order:

1. Install the stack software per vendor instructions.
2. Start the stack.
3. Successfully activate definitions.
4. Execute vendor-provided tests.

Verifying WebLogic Server Installation

Proper WebLogic Server installation ensures that your applications deploy and operate correctly.

After starting the WebLogic Server default server, validate the WebLogic Server product installation by entering the following URL in the address or location field of a certified web browser:

`http://localhost:<port>`

The default port is 7001, so if you did not change your port number during WebLogic Server installation, the following URL should work:

`http://localhost:7001`

What Do I Do Next?

If WebLogic Server is properly installed and running, the WebLogic Server Web Server Index Page is displayed. If it is, proceed to installing the JAM product. For instructions, see “Installing the Software”

2 Installing the Software

This section provides information on installing the BEA Java Adapter for Mainframe (JAM) software.

Installation topics are grouped by platform, by component (JAM or CRM) if the component installations differ for particular platforms, and by type of installation. Console mode or graphics mode installations are available. Also, you may have to run the installation program multiple times depending on your configuration.

Action List

As you install the JAM software, see the action list below and refer to the appropriate information sources.

Your action...	Refer to...
1 Complete all prerequisite tasks.	“Prerequisites”
2 Install the CRM for your platform and configuration.	
Install the CRM on a mainframe (distributed configuration)	“Installing the CRM on OS/390 UNIX” or “Installing the CRM on OS/390 MVS”
Install the CRM on non-mainframe UNIX (local or non-mainframe distributed configuration)	“Installing on UNIX in Console Mode” or “Installing in Graphics Mode”
Install the CRM on Windows NT (local or non-mainframe distributed configuration)	“Installing in Graphics Mode”

2 *Installing the Software*

Your action...	Refer to...
3 Install the JAM gateway for your platform and configuration.	
Install the JAM gateway on a non-mainframe UNIX machine.	“Installing on UNIX in Console Mode” or “Installing in Graphics Mode”
Install the JAM gateway on a Windows NT machine.	“Installing in Graphics Mode”
4 Verify the installation files and directories.	“Verifying Installation Files and Directories”
5 Set up the license key.	“Setting Up the License Key”
6 Add the JAM class to the BEA WebLogic Server CLASSPATH.	“Adding JAM to the CLASSPATH”
7 Proceed to configuration.	“What Do I Do Next?”

Prerequisites

Before you install JAM, you should complete the following tasks:

Your action...	Refer to...
1. You should have verified that all required pre-installation tasks have been performed.	“Preparing for Installation”

Installing on UNIX in Console Mode

To install the JAM software in console mode on UNIX, run the BEA standard installation shell script for the particular platform upon which you wish to install JAM. The scripts are:

- `wljam42_Sol7.bin` for Solaris 7
- `wljam42_Sol8.bin` for Solaris 8
- `wljam42_Aix.bin` for AIX
- `wljam42_Hp.bin` for HP-UX

Select which components to install, and where to install them, based on your configuration requirements.

Perform the following steps to install the JAM software in console mode on a certified UNIX platform:

1. Log on as root to install the JAM software.

```
$ su -  
Password:
```

2. Mount the CD-ROM. Mount commands vary depending on your system configuration. Refer to your System Administrator for the specific command for your system.

3. Change the directory to the `mnt` directory on your CD-ROM device. For example,

```
> cd /mnt
```

4. List the CD-ROM contents.

```
mnt> ls  
  
wljam42_Sol7.bin wljam42_Sol8.bin wljam42_Hp.bin  
wljam42_Aix.bin wljam42_Nt.exe mvsnt mvsunix os390.tar
```

5. Set the `JAVA_HOME` and `PATH` environment variables as follows

```
/mnt> export JAVA_HOME=<BEA_HOME>/jdk130  
/mnt> export PATH=<BEA_HOME>/jdk130/bin:$PATH
```

Example: If your BEA Home directory is `/usr/BEA`, then these environment variables should be set as follows:

```
/mnt> export JAVA_HOME=/usr/BEA/jdk130
/mnt> export PATH=/usr/BEA/jdk130/bin:$PATH
```

6. Execute the appropriate installation program for your particular UNIX platform in character-based mode. For example, to execute the Solaris 7 installation program, enter the following:

```
mnt> sh wljam42_Sol7.bin -i console
```

7. The installation program runs and prompts you for responses.

Note: Listing 2-1 provides an example of a default console mode installation with the assumption that WebLogic Server, BEA WebLogic Process Integrator, and BEA WebLogic XML/Non-XML Translator are installed. For an explanation of the various installation options, see “Installing in Graphics Mode.”

Listing 2-1 Console Mode Installation Example

```
Preparing to install...
Preparing CONSOLE Mode Installation...
=====

BEA WebLogic Java Adapter for Mainframe(created with
InstallAnywhere by Zero G)
-----

=====
Introduction
-----
This installer will guide you through the installation of 'WebLogic
Java Adapter for Mainframe'. On each step, answer the questions
provided. Type "quit" at any time to exit the installer.

PRESS <ENTER> TO CONTINUE: <ENTER>
=====
License Agreement
-----
Please read before installing:

BEA WebLogic Java Adapter for Mainframe(r) v4.2 Software License
The Software and accompanying documentation (respectively
"Software" and "Documentation") ...
```


•
•
•

User Count means the number of users specified on the uniform product code label provided on the outside packaging of the Product. PRESS <ENTER> TO CONTINUE: **<ENTER>**
Connection Management Software means the computer programs ...

•
•
•

... countries
Copyright 2000, 1996-1999 BEA Systems, Inc., or its suppliers, as applicable.
All Rights Reserved.
DO YOU AGREE WITH THE TERMS OF THE LICENSE? (Y/N): **Y**
=====

Choose Install Set

Please Choose the Install Set to be installed by this installer.
->1- Typical Install
 2- Customize...

ENTER THE NUMBER FOR THE INSTALL SET, OR <ENTER> TO ACCEPT THE DEFAULT **1**
=====

Choose BEA Home Directory

1- Create a New BEA Home
2- Use Existing BEA Home

Enter a number: **2**

1- //usr/wlclbea
2- //usr/bea
3- //usr/rosetta
4- /usr/laguna/bea

Existing BEA Home: **2**
=====

Choose Product Directory

1- Modify Current Selection (/usr/bea/wljam4.2)
2- Use Current Selection (/usr/bea/wljam4.2)

Enter a number: **2**
=====

```
Installing...
-----
[=====|=====|=====|=====]
[-----|-----|-----|-----]
=====
Install Complete
-----
Congratulations. 'WebLogic Java Adapter for Mainframe' has been
successfully installed to:
    /usr/bean/wljam4.2
PRESS <ENTER> TO EXIT THE INSTALLER: <ENTER>
```

Uninstalling on UNIX in Console Mode

If you install JAM in console mode, you must uninstall it in console mode.

To uninstall JAM in console mode:

1. Change directories to your uninstaller directory under your root directory (default is /usr/bean/wljam4.2/uninstaller) with the following command:

```
> cd /usr/bean/wljam4.2/uninstaller
```

2. Start the uninstallation program with the following command:

```
/usr/bean/wljam4.2/uninstaller> sh Uninstall -i console
```

Listing 2-2 displays a JAM uninstallation.

Listing 2-2 Console Mode Uninstallation Example

```
Preparing CONSOLE Uninstall...
```

```
=====
```

```
BEA WebLogic Java Adapter for Mainframe (InstallAnywhere
Uninstaller by Zero G)
```

```
-----
```

```
About to uninstall...
```

BEA WebLogic Java Adapter for Mainframe

This will completely remove all components installed by InstallAnywhere. It will not remove files and folders created after the installation.

PRESS <ENTER> TO BEGIN THE UNINSTALL, OR 'QUIT' TO EXIT THE UNINSTALLER: <ENTER>

```
=====
Uninstall...
-----
[=====|=====|=====|=====]
[-----|-----|-----|-----]
=====
Uninstall Complete
-----
All items were successfully uninstalled.
PRESS <ENTER> TO EXIT THE UNINSTALLER: <ENTER>
```

Installing in Graphics Mode

Both the JAM and the CRM components are installed on Windows NT and non-mainframe UNIX-based machines with the JAM installation program. This installation program is a standard BEA installation program. The file names of the JAM installation program are as follows:

- wljam42_Nt.exe for Microsoft Windows NT
- wljam42_So17.bin for Solaris 7
- wljam42_So18.bin for Solaris 8
- wljam42_Aix.bin for AIX
- wljam42_Hp.bin for HP-UX

Select which components to install, and where to install them, based on your configuration requirements.

Perform the following steps to install the JAM software:

1. Insert the JAM CD-ROM.

On Windows NT:

- a. Click **Run** from the **Start** menu.

The Run window displays.

- b. Click **Browse** to navigate to the CD-ROM drive.

- c. Select the `wljam42_Nt.exe` program.

- d. Click **Open** to make the path and executable appear in the Run dialog box, then select **OK** to run the executable and begin the installation.

The Introduction screen (see Figure 2-1) displays.

On UNIX:

- a. Log on as root to install the JAM software.

```
$ su -  
Password:
```

- b. Mount the CD-ROM. Mount commands vary depending on your system configuration. Refer to your System Administrator for the specific command for your system.

- c. Change the directory to the `mnt` directory on your CD-ROM device. For example,

```
> cd /mnt
```

- d. List the CD-ROM contents.

```
/mnt> ls  
  
wljam42_Sol7.bin wljam42_Sol8.bin wljam42_Hp.bin  
wljam42_Aix.bin wljam42_Nt.exe mvsnnt mvsunix os390.tar
```

- e. Set the `JAVA_HOME` and `PATH` environment variables as follows:

```
/mnt> export JAVA_HOME=<BEA_HOME>/jdk130
```

```
/mnt> export PATH=<BEA_HOME>/jdk130/bin:$PATH
```

Example: If your BEA Home directory is `/usr/bea`, then these environment variables should be set as follows:

```
/mnt> export JAVA_HOME=/usr/bea/jdk130
```

```
/mnt> export PATH=/usr/bea/jdk130/bin:$PATH
```

- f. If you are installing remotely (from a machine other than the one upon which you are installing JAM), define the `DISPLAY` environment variable as follows:

```
/mnt> export DISPLAY=xx.xx.xx.xx:0.0
```

(where `xx.xx.xx.xx` is the IP address of the machine from which you are installing)

- Note:** If you are installing remotely from Windows NT, you must use an X-Windows terminal emulator.

- g. Execute the installation program. The following example executes the Solaris 7 installation program:

```
/mnt> sh w1jam42_Sol7.bin
```

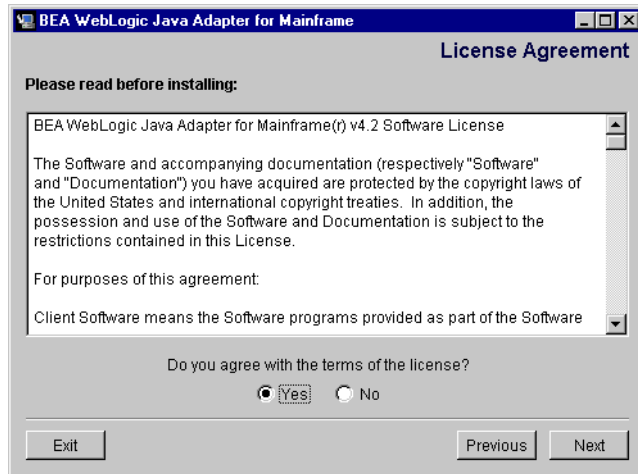
The Introduction screen (see Figure 2-1) displays.

Figure 2-1 Introduction Screen



- 2. Click **Next** on the Introduction screen to continue with the installation. The License Agreement screen displays (see Figure 2-2).

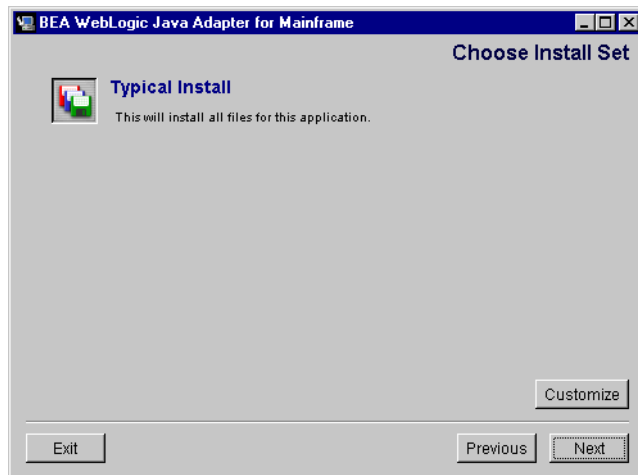
Figure 2-2 License Agreement Screen



3. Select **Yes** to accept the license agreement, then click **Next** to proceed with the installation. The Choose Install Set screen displays (see Figure 2-3).

Note: If you select **No**, you will not be able to continue with the installation. You must either exit the installation or go back to the Introduction screen.

Figure 2-3 Choose Install Set Screen



4. Select one of the following:

- **Typical Install:** Choose this option to install all of the JAM components.

Selecting this option installs all of the components available for your platform. See Table 2-1 for the components available.

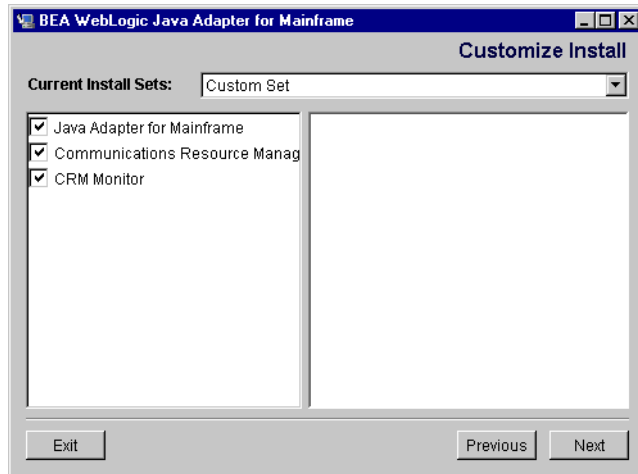
Table 2-1 Components Available for Installation by Platform

Platform	Available Components
Windows NT	Java Adapter for Mainframe (JAM) gateway Communications Resource Manager (CRM) CRM Monitor
Solaris 7	Java Adapter for Mainframe (JAM) gateway Communications Resource Manager (CRM) CRM Monitor
HP-UX	Java Adapter for Mainframe (JAM) gateway CRM Monitor
AIX	Java Adapter for Mainframe (JAM) gateway CRM Monitor
Solaris 8	Java Adapter for Mainframe (JAM) gateway CRM Monitor

- **Customize:** Choose this option to select from the applications available.

The Customize Install screen appears (see Figure 2-4) for the platform upon which you are installing JAM. The applications available for each certified platform are listed in Table 2-1.

Figure 2-4 Customize Install Screen

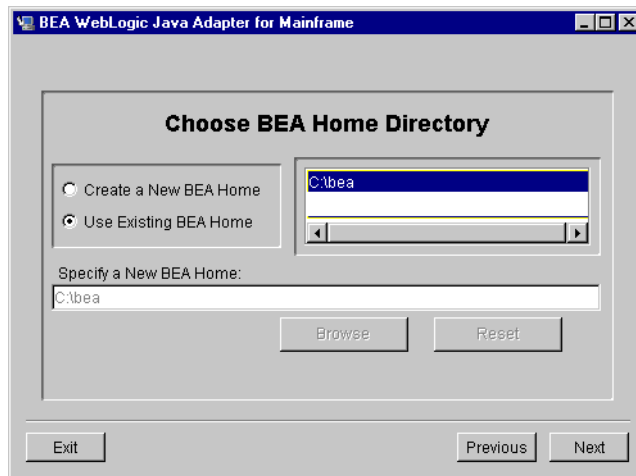


- a. Select the applications that you want to install. Make sure that a checkmark appears in the checkbox for each application that you want to install.

Note: To determine whether or not you need to run this installation program on another machine, see “Determining Your Configuration.”

- b. Click **Next** to proceed with the installation. The Choose BEA Home Directory screen is displayed (see Figure 2-5).

Figure 2-5 Choose BEA Home Directory Screen



5. Create or select a BEA Home directory. The BEA Home directory is the root directory in which you install all BEA products. If you do not already have a BEA Home directory (default is `c:\bea` on Windows NT and `/usr/bea` on UNIX), you will have the option of creating a new BEA Home directory. You can create a new BEA Home directory as follows:
 - a. Select the **Create a New BEA Home** radio button.
 - b. Accept the default location for your BEA Home directory or click **Browse** to specify a different location. If you accept the default location, your BEA Home directory will be `c:\bea`, and your JAM software default installation directory is `c:\bea\wljam4.2`. Click **Next** to proceed with the installation.

If you have WebLogic Server 6.0 Service Pack 2, WebLogic Process Integrator 2.0, and WebLogic XML/Non-XML Translator 2.0 installed on your machine under the BEA Home directory that you created, the Choose Product Directory screen displays (see Figure 2-7).

If you already have one or more BEA Home directories on your system, you can use one of those directories as follows:

- a. Click on the **Use Existing BEA Home** radio button.

- b. Select a BEA Home directory from the scrolling list displayed to the right of the radio buttons. All of the valid BEA Home directories will be displayed in the scrolling list, and only valid BEA Home directories can be used to install JAM. Valid BEA Home directories are directories where BEA products have been installed using BEA's standard installation program. Click **Next** to proceed with the installation.

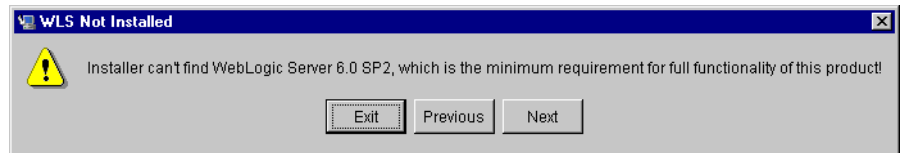
If you have WebLogic Server 6.0 Service Pack 2, WebLogic Process Integrator 2.0, and WebLogic XML/Non-XML Translator 2.0 installed on your machine under the BEA Home directory that you selected, the Choose Product Directory screen displays (see Figure 2-7).

If you are:

- Installing the JAM gateway
- Have installed WebLogic Server on your machine
- The "Installer can't find WebLogic Server 6.0 SP2" message appears (see Figure 2-6)

You have probably installed WebLogic Server under a different BEA Home directory than the one you selected or created in the Choose BEA Home Directory screen.

Figure 2-6 Installer Can't Find WebLogic Server 6.0 SP2 Message



To install JAM under the correct BEA Home directory:

- a. Click **Previous** to display the Choose BEA Home Directory screen (see Figure 2-5)
- b. Choose a different BEA Home directory from the scrollable text field displayed to the right of the radio buttons, then
- c. Click **Next**.

The Choose Product Directory screen displays (see Figure 2-7).

If you are installing the JAM gateway and have not installed WebLogic Server, WebLogic Process Integrator, or WebLogic XML/Non-XML Translator, refer to Table 2-2 for more information.

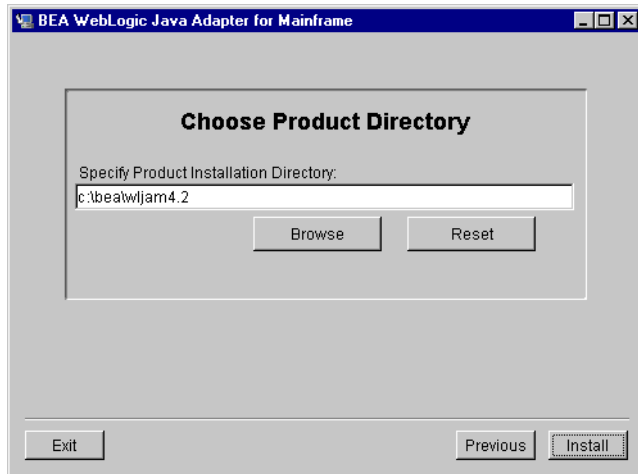
Table 2-2 Installation Alternatives

If you have not installed...	The results will be...
WebLogic Server	The JAM gateway will be installed. However, the JAM functionality will be limited because the JAM gateway is designed for use with WebLogic Server.
WebLogic Process Integrator	The JAM gateway and JAM Plug-in for WebLogic Process Integrator will be installed. However, the JAM Plug-in will not be functional. If you install WebLogic Process Integrator subsequent to your JAM gateway installation, the JAM Plug-in will become functional.
WebLogic XML/Non-XML Translator	The JAM gateway and JAM Plug-in for WebLogic Process Integrator will be functional. However, its functionality will be limited because the JAM plug-in is designed for use with WebLogic XML/Non-XML Translator. You will not be able to request mainframe actions from your workflows or request workflows from your mainframe.

If you do not want the result listed in Table 2-2, click **Exit**. You will exit the installation program without installing JAM. You can rerun the JAM installation program after you have installed the software that will give you the desired result.

If you do want the result listed in Table 2-2, click **Next** to proceed to the Choose Product Directory screen (see Figure 2-7).

Figure 2-7 Choose Product Directory Screen



6. Accept the installation directory listed in the **Specify Product Installation Directory** field.

Warning: It is highly recommended that your installation directory remain <BEA Home>\wljam4.2.

7. Click **Install** to install the software. Upon installation completion, the Install Complete screen displays (see Figure 2-8).

Figure 2-8 Install Complete Screen



8. Click **Done** to complete the installation.

Uninstalling in Graphics Mode

Perform the following steps to uninstall the JAM software:

1. **On Windows NT:**

Choose **Start**—>**Programs**—>**BEA WebLogic E-Business Platform**—>**WebLogic Java Adapter for Mainframe 4.2**—>**Uninstall Java Adapter for Mainframe** from the **Start** menu. The screen in Figure 2-9 is displayed.

On UNIX:

- a. Change directories to your uninstaller directory under your JAM root directory (default is `/usr/beanwljam4.2/uninstaller`) with the following command:

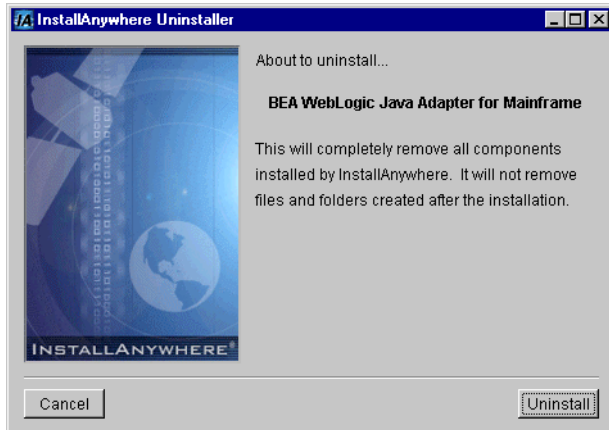
```
> cd /usr/beanwljam4.2/uninstaller
```

- b. Start the uninstallation program with the following command:

```
/usr/beanwljam4.2/uninstaller> sh Uninstall
```

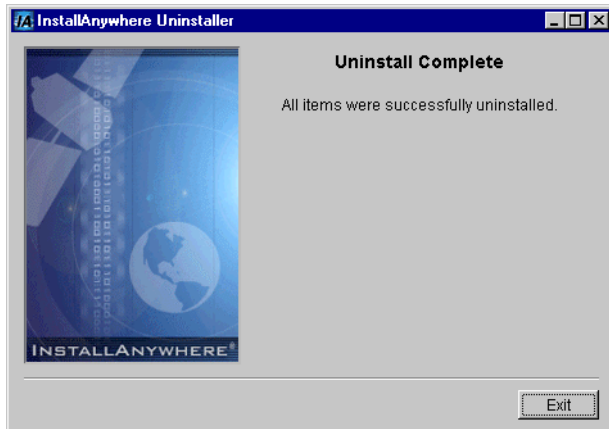
The screen shown in Figure 2-9 displays.

Figure 2-9 JAM Uninstall Start Screen



2. Click **Uninstall** to start uninstalling JAM. When the uninstallation of JAM is complete, the screen shown in Figure 2-10 displays.

Figure 2-10 JAM Uninstallation Complete Screen



3. Click **Exit** to complete the uninstallation.

Installing the CRM on OS/390 UNIX

The following steps install the CRM on OS/390 UNIX. This installation is for a distributed configuration where the CRM resides on the mainframe in an OS/390 UNIX environment.

Note: This procedure assumes the installer is familiar with File Transfer Protocol (FTP) functions.

1. Load the product CD-ROM on a machine that has FTP access to the OS/390 host.
2. Log on to your OS/390 UNIX system as superuser.
3. Copy the file `os390.tar` (in binary mode) from the root directory on the CD-ROM to the working directory on the OS/390 host.
4. To extract the installation script from the `tar` file on the mainframe, use the following command:

```
tar xvfo os390.tar
```

Executing the `tar` command extracts the `install.sh` script and subdirectories containing the software to be installed from the `tar` file.

5. Execute the `install.sh` script using the following command:

```
sh install.sh
```

The installation script prompts you for responses. Listing 2-3 is a sample installation. It shows the installation of the CRM in a distributed configuration on an OS/390 mainframe platform. User responses are in bold.

Listing 2-3 Sample Script for CRM Component Installation on an OS/390 Unix Platform

```
cmadm@dalsun4:/cmhome/dist/fig-4: >sh install.sh
```

```
01) os390/os390r8
```

```
Install which platform's files? [01-      1 , q to quit, l for list]: 1
```

```
** You have chosen to install from os390/os390r8 **
```

2 *Installing the Software*

Communications Resource Manager Release 1.2

This directory contains the Communications Resource Manager 1.2 for IBM OS/390 Unix R8 on IBM OS/390.

Is this correct? [y,n,q]: **y**

To terminate the installation at any time press the interrupt key, typically , <break>, or <ctrl+c>.

The following packages are available:

1 crm SNA Communications Resource Manager

Select the package(s) you wish to install (or 'all' to install all packages) (default: all) [?,??,q]: **all**

Communications Resource Manager
(OS390) Release 1.2
Copyright (c) 2001 BEA Systems, Inc.
All Rights Reserved.
Distributed under license by BEA Systems, Inc.
BEA eLink is a trademark of BEA Systems, Inc.

Directory where Communications Resource Manager files are to be installed (Enter your directory path) [?,q]: **/bea/wljam4.2**

Using /bea/wljam4.2 as the Communications Resource Manager base directory

The following CRM stack support options are available:

1 vtm28 OpenEdition MVS 390

Select an option [?,??,q]: **1**

Determining if sufficient space is available ...
68000 blocks are required
270552 blocks are available to /bea/wljam4.2

Unloading /bea/loads/dist/fig-4/os390/os390r8/crm/CRMSA.Z ...
6800 blocks
x bin/CRMLOGS
x bin/CRM
x bin/crmdown
x bin/crmlkoff
x bin/crmlkon
x bin/uss.env


```
x lib/ctxdebugs_12.dll
x lib/ctxos_12.dll
x lib/ctxprim_12.dll
x lib/ctxplat_12.dll
x lib/csxappc.dll
x lib/csxxfm.dll
x lib/csxxmw.dll
x lib/csxgpw.dll
x lib/csxcrm.dll
x lib/csxxcrm.dll
x lib/csxsCRM.dll
x lib/libgp40.dll
x lib/libgpnet.dll
```

```
... finished
```

```
Unloading /bea/loads/dist/fig-4/os390/os390r8/crm/STKSA.Z ...
241 blocks
x lib/csxvtm28.dll
... finished
```

```
Changing file permissions...
... finished
```

Installation of Communications Resource Manager was successful

Please don't forget to fill out and send in your registration card
>

Installing the CRM on OS/390 MVS

This section explains how to install the CRM on OS/390 Multiple Virtual Storage (MVS). This installation is for a distributed configuration where the CRM resides on the mainframe in an OS/390 MVS environment.

Note: While certain JAM components are certified on IBM OS/390 2.8, 2.9, and 2.10, problems may be encountered starting these components on OS/390 depending on variations of IBM PTF levels. To determine the appropriate PTFs to apply, see the *BEA Java Adapter for Mainframe Release Notes*.

Summary of Installation Tasks

The following list is a summary of the tasks detailed in “Installation Procedure for CRM on OS/390 MVS.”

1. Put the JCL files in the MVS environment prior to installation using the FTP program.
2. Allocate the initial data sets using the `DSUPLOAD.JCL` job.
3. FTP the product software files (`JAM42.xxx`) to the allocated data sets.
4. Run the `INSTALL.JCL` job to allocate the final data sets.
5. Run the `TSO RECEIVE` command to unload the data in your product data sets. A third JCL file, `UNCMRSS.JCL`, has been provided to run this procedure in a batch.

Note: The installation process assumes the installer is familiar with Job Control Language (JCL) job operations and File Transfer Protocol (FTP) functions.

Installation Files

The installation for this environment is semi-automated. Three JCL files are provided to facilitate prerequisites for allocating data sets in the MVS environment and to unload JAM product software into the allocated data sets.

The product CD-ROM contains the following files relating to this installation procedure:

- `readme.txt` file contains notes on how to install the product in this environment. This is a summary of the procedure in this section.
- `dsupload.jcl` file is a JCL example for creating MVS data sets to receive the JAM software.
- `install.jcl` file is a JCL example creating the unloaded product datasets.
- `uncmrss.jcl` file is a JCL example to uncompress and unload into the product datasets.

- JAM42 .LOAD file contains the JAM program objects. (Required)
- JAM42 .DATA file contains JAM data files. (Required)
- JAM42 .SAMPLE file contains sample JCL files.

Installation Procedure for CRM on OS/390 MVS

Perform the following steps to install the CRM component on an OS/390 MVS platform:

1. Load the product CD-ROM on a machine that has File Transfer Protocol (FTP) access to the MVS UNIX or MVS NT directory.

2. Use FTP to put the following JCL files in the MVS destination PDS dataset:

```
dsupload.jcl  
install.jcl  
uncmprss.jcl
```

3. In your MVS environment, change the DSUPLOAD job to suit your environment. This job allocates the initial data sets needed to receive the product software files from the FTP file transfer.

Use the SET statements in the DSUPLOAD job to set the high-level qualifiers of the receiving datasets according to the following syntax:

```
SET PRODHLQ=[QUALIFIER]
```

The DSUPLOAD job has the following steps:

DELOAD

Deletes any existing data sets previously created so you can run this JCL multiple times, if necessary.

CREATE

Allocates the initial data sets needed to receive the product software files.

4. Run the DSUPLOAD job.
5. Put the files listed in Table 2-3 into their corresponding data sets. Use the table as a worksheet and fill in the names you created in step 3. Use the worksheet as a guide for transferring the product data to the OS/390 platform.

Table 2-3 MVS Installation Product Files and DD Name Data Sets

Product File	Set Statement	Your Dataset Name
JAM42 .LOAD	PRODHLQ	.LOAD
JAM42 .DATA	PRODHLQ	.DATA
JAM42 .SAMPLE	PRODHLQ	.SAMPLE

6. From the UNIX/NT command prompt, set the binary data transfer mode using the FTP program.

Note the following example of a PUT command:

```
put JAM42.LOAD 'BEA.JAM42.LOAD'
```

Transfer the datasets using the PUT command.

7. In your MVS environment, change the INSTALL job to suit your environment.

Use the SET statements to alter the job for your environment according to the following syntax:

```
SET BEAPDSE=[QUALIFIER]
```

In this statement, [QUALIFIER] is the high-level qualifier for the CRM load library. The load library containing the JAM42.LOAD program objects must be a partitioned data set with extended attributes (PDSE). The PDSE minimally must have storage class SMS declaration for OS/390 v2.8.

```
SET SCLASS=[CLASS NAME]
```

In this statement, [CLASS NAME] is the storage class name of the PDSE. This is required for OS/390 v2.8.

```
SET BEAPDS=[QUALIFIER]
```

In this statement, [QUALIFIER] is the high-level qualifier for the sample and data datasets. These are standard PDS.

The INSTALL job has the following steps:

```
DELOLD
```

Deletes any existing data sets created by the INSTALL job so you can run this JCL multiple times, if necessary.

CREATE

Creates the MVS data sets for you.

This step includes the minimal JCL needed to create the data sets for OS/390 v2.8. You may change the JCL to reflect your own environment.

8. Run the `INSTALL` job.

Use Table 2-4 as a worksheet to fill out the names of the datasets created in this step.

Table 2-4 Set Statements and Corresponding Datasets

Set Statement	Your Dataset Name
BEAPDSE	.LOAD
BEAPDS	.DATA
BEAPDS	.SAMPLE

9. In your MVS environment, change the `UNCMRPS` job to suit your environment.

Modify the following variables in the JCL to the high-level qualifier you listed in the tables according to the following syntax:

`<PRODHQ>=[QUALIFIER]`

Use the qualifier you listed in Table 2-3.

`<BEAPDSE>=[QUALIFIER]`

Use the PDSE qualifier you listed in Table 2-4.

`<BEAPDS>=[QUALIFIER]`

Use the PDS qualifier you listed in Table 2-4.

The `UNCMRPS` job has the following step:

UNLOAD

Performs a TSO `RECEIVE` to uncompress and unload the data in your installation datasets created in step 8.

Note: To manually perform the TSO `RECEIVE` command, which unloads the data in your installation data sets created in Step 8, enter the following command:

```
TSO RECEIVE INDS( 'xxx' )
```

When prompted, enter:

```
DA( "YY" )
```

In these statements, the following definitions apply:

xxx

Is the dataset name you listed in Table 2-3.

yyy

Is the corresponding dataset name you listed in Table 2-4.

Verifying Installation Files and Directories

The JAM CD-ROM contains the following libraries and executable programs for each of the following installation scenarios and their supported platforms. After installing the JAM software, verify that these libraries and programs are installed on your system.

JAM Gateway Installation

All directories are relative to the installation directory.

Solaris (Version 7 or 8)

Verify that the following JAM files are installed by the JAM software:

Table 2-5 Solaris Installation Files and Directories

Directory	Files
bin	egencobol
lib	jam.jar jam.ear

Directory	Files
classdocs	jamdoc.jar
examples	samples.jar
uninstaller	complist install.log lax.jar Uninstall Uninstall.lax uninstaller.jar user.zip
uninstaller\resource	remove.sh
uninstaller\resource\ i18nresources	custom_en

AIX

Verify that the following JAM files are installed by the JAM software:

Table 2-6 AIX Installation Files and Directories

Directory	Files
bin	egencobol
lib	jam.jar jam.ear
classdocs	jamdoc.jar
examples	samples.jar
uninstaller	complist install.log lax.jar Uninstall Uninstall.lax uninstaller.jar user.zip

Directory	Files
uninstaller\resource	remove.sh
uninstaller\resource\ i18nresources	custom_en

HP-UX

Verify that the following JAM files are installed by the JAM software:

Table 2-7 HP-UX Installation Files and Directories

Directory	Files
bin	egencobol
lib	jam.jar jam.ear
classdocs	jamdoc.jar
examples	samples.jar
uninstaller	complist install.log lax.jar Uninstall Uninstall.lax uninstaller.jar user.zip
uninstaller\resource	remove.sh
uninstaller\resource\ i18nresources	custom_en

Windows NT

Verify that the following JAM files are installed by the JAM software:

Table 2-8 Windows NT Installation Files and Directories

Directory	Files
bin	egencobol.cmd
lib	jam.jar jam.ear
classdocs	jamdoc.jar
examples	samples.jar
uninstaller	complist install.log lax.jar Uninstall.exe Uninstall.lax uninstaller.jar user.zip
uninstaller\resource	iawin32.dll jdglue.zip remove.exe
uninstaller\resource\ i18nresources	custom_en

JAM Plug-in for WebLogic Process Integrator

If you had WebLogic Process Integrator installed on your Solaris, AIX, HP-UX, or Windows NT machine prior to running the JAM gateway installation, the following files will be installed into your <WebLogic Process Integrator Home>/lib (<WebLogic Process Integrator Home>\lib on Windows NT) directory:

```
jampi.jar
jampi.war
```

If WebLogic Process Integrator was not installed on your Solaris, AIX, HP-UX, or Windows NT machine prior to running the JAM gateway installation, these two files were installed into your <WebLogic Integration Home>/repository/lib (<WebLogic Integration Home>\repository\lib on Windows NT) directory.

Note: Other distribution files will be installed into the <WebLogic Integration Home>/repository/lib (<WebLogic Integration Home>\repository\lib on Windows NT) directory. These files are not listed in this section.

Communications Resource Manager (CRM) Installation

Verify that the CRM files listed by section are installed on your system.

All directories are relative to the specified installation directory. Also included are the ATMI libraries that ship with the standalone CRM. For encryption purposes, the libgp that is shipped is the one enabled for 40-bit encryption. Platform-specific stack abstraction libraries are included in these tables as well.

Note: The CRM is not available on Solaris 8, AIX, or HP-UX.

Solaris 7

Verify that the following CRM application files are installed by the JAM software:

Table 2-9 Solaris Installation Files and Directories

Directory	Files
bin	CRMLOGS CRM crmlkon crmlkoff crmdown solaris.env

Table 2-9 Solaris Installation Files and Directories

Directory	Files
lib	libctxdebugs_12.so libctxos_12.so libctxprim_12.so libctxplat_12.so libcsxappc.so libcsxxfm.so libcsxxmw.so libcsxgpw.so libcsxcrm.so libcsxcrm.so libcsxscrm.so libcsxspx62.so libgp.so.60 libgpnet.so.60

OS/390 UNIX

Verify that the following CRM application files are installed by the JAM software.

Table 2-10 OS/390 UNIX Installation Files and Directories

Directory	Files
bin	crmlkoff crmlkon CRMLOGS CRM crmdown uss.env

Table 2-10 OS/390 UNIX Installation Files and Directories

Directory	Files
lib	ctxdebugs_12.dll ctxos_12.dll ctxprim_12.dll ctxplat_12.dll csxappc.dll csxxfm.dll csxxmw.dll csxgpw.dll csxcrm.dll csxxcrm.dll csxsrm.dll csxvtm28.dll libgp.dll --> libgp40.dll libgpnet.dll

OS/390 MVS

Verify that the following CRM application files are installed by the JAM software.

Table 2-11 OS/390 MVS Installation Files and Directories

Directory	Files
load library	CRMLOGS CRM CRMLKON CRMLKOFF CRMDOWN CSXAPPC CSXXFM CSXXMW CSXGPW CSXCRM CSXXCRM CSXSCRM CSXVTM28 DEBUGS OS PRIM PLAT LIBGPNET LIBGP LIBGP40
data library	ENV
sample	CRMSTART CRMLKON CRMLKOFF CRMDOWN CRMLOGS

Windows NT

Verify that the following CRM application files are installed by the JAM software

Table 2-12 Windows NT Installation Files and Directories

Directory	Files
bin	CRM.exe crmlkoff.exe crmlkon.exe CRMLOGS.exe crmdown.exe ntenv.bat csxappc.dll csxcrm.dll csxgpw.dll csxibm60.dll csxsrm.dll csxxfm.dll ctxdebugs_12.dll ctxos_12.dll ctxplat_12.dll ctxprim_12.dll libgp.dll libgpnet.dll
lib	

CRM Monitor Installation

The java-enabled CRM monitor files are as follows:

- On Windows NT, the `crmmon.jar` file should be in the `<JAM Installation>\lib` directory.
- On Solaris 7, Solaris 8, HP-UX, and AIX, the `crmmon.jar` file should be in the `<JAM Installation>/lib` directory.

Setting Up the License Key

The CRM cannot be used without a valid software license. A 30-day license file is automatically installed when you install JAM. When you purchase the software, a permanent JAM license key file will be provided to you by BEA. Follow the directions below to update your license file on the target system.

To update your JAM software license:

1. Copy the JAM license key file that you received from distribution to your BEA Home directory.
2. Open a Command Prompt window.
3. Navigate to the BEA Home directory where you installed WebLogic Server and JAM. You must be in this BEA Home directory to update `license.bea` using this method. If your BEA Home is `c:\bea`, use the following command:

```
c:\> cd bea
```

4. Execute the UpdateLicense utility as follows:

```
c:\bea> UpdateLicense <JAM license key file>
```

Your license file (`license.bea`) is now updated with the information in your JAM license key file. This addition to your BEA license file allows you to connect to a mainframe through the CRM.

Adding JAM to the CLASSPATH

The `jam.jar` file should be placed in your WebLogic Server CLASSPATH so that JAM will work. Place `jam.jar` in your CLASSPATH as follows:

For UNIX:

- `<JAM 42 Installation directory>/lib/jam.jar`

For Windows NT:

- `<JAM 42 Installation directory>\lib\jam.jar`

What Do I Do Next?

After you have installed the JAM software and set up the license file and classpath, you are ready to configure and use the JAM product. Refer to the *BEA WebLogic Java Adapter for Mainframe Configuration and Administration Guide*, the *WebLogic Java Adapter for Mainframe Programming Guide*, and *BEA WebLogic Java Adapter for Mainframe Scenarios Guide* for detailed information about configuring and using the JAM Gateway and the CRM.

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