
# iWay

## iWay Java Adapter for Mainframe Installation Guide

DN3501658.0505

# Preface

Proper installation is essential to successfully operating iWay Java Adapter for Mainframe (iWay JAM). This documentation assists you through the iWay JAM installation process.

## How This Manual Is Organized

The following table lists the titles and numbers of the chapters and appendix for this manual with a brief description of the contents of each chapter or appendix.

| Chapter | | Contents |
|---|---|---|
| **1** | Introduction to Installing iWay JAM | Provides an overview of the ProductName installation process. |
| **2** | Preparing to Install iWay Java Adaper for Mainframe | Provides information on several tasks you must perform before you install the iWay Java Adapter for Mainframe. |
| **3** | Installing iWay Java Adapter for Mainframe | Describes how to install iWay Java Adapter for Mainframe. |
| **4** | Verifying Your Installation | Describes the iWay Java Adapter for Mainframe installation verification process. |
| **5** | Uninstalling iWay Java Adapter for Mainframe | Describes how to uninstall iWay Java Adapter for Mainframe. |

## Documentation Conventions

The following table lists and describes the conventions that apply throughout this manual.

| Convention | Description |
|---|---|
| `THIS TYPEFACE` or `this typeface` | Denotes syntax that you must enter exactly as shown. |
| ***`this typeface`*** | Represents a placeholder (or variable) in syntax for a value that you or the system must supply. |
| `underscore` | Indicates a default setting. |
| *this typeface* | Represents a placeholder (or variable) in a text paragraph, a cross-reference, or an important term. |
| **this typeface** | Highlights a file name or command in a text paragraph that must be lowercase. |
| *this typeface* | Indicates a button, menu item, or dialog box option you can click or select. |
| Key + Key | Indicates keys that you must press simultaneously. |
| `{ }` | Indicates two or three choices; type one of them, not the braces. |
| `\|` | Separates mutually exclusive choices in syntax. Type one of them, not the symbol. |
| `...` | Indicates that you can enter a parameter multiple times. Type only the parameter, not the ellipsis points (…). |
| `.`<br>`.`<br>`.` | Indicates that there are (or could be) intervening or additional commands. |

## Customer Support

Do you have questions about the iWay Java Adapter for Mainframe?

If you bought the product from a vendor other than iWay Software, contact your distributor.

If you bought the product directly from iWay Software, call Information Builders Customer Support Service (CSS) at (800) 736-6130 or (212) 736-6130. Customer Support Consultants are available Monday through Friday between 8:00 a.m. and 8:00 p.m. EST to address all

your iWay Java Adapter for Mainframe questions. iWay Software consultants can also give you general guidance regarding product capabilities and documentation. Please be ready to provide your six-digit site code number (*xxxx.xx*) when you call.

You can also access support services electronically, 24 hours a day, with InfoResponse Online. InfoResponse Online is accessible through our World Wide Web site, http://www.iwaysoftware.com. It connects you to the tracking system and known-problem database at the iWay Software support center. Registered users can open, update, and view the status of cases in the tracking system and read descriptions of reported software issues. New users can register immediately for this service. The technical support section of www.iwaysoftware.com also provides usage techniques, diagnostic tips, and answers to frequently asked questions.

To learn about the full range of available support services, ask your iWay Software representative about InfoResponse Online, or call (800) 969-INFO.

## Help Us to Serve You Better

To help our consultants answer your questions effectively, please be prepared to provide specifications and sample files and to answer questions about errors and problems.

The following tables list the specifications our consultants require.

| | |
|---|---|
| **WebLogic Server Platform Operating System and Operating System Version** | |
| **WebLogic Server Version and Service Pack / special patch** | |
| **iWay JAM CRM Platform Operating System** | |
| **CICS or IMS Operating System and Operating System Version** | |
| **CICS or IMS Version Information** | |
| **Third party SNA stack product and version** | |

The following table lists components. Specify the version in the column provided.

| Component | |
|---|---|
| iWay JAM Gateway Build / Fix Level | |
| iWay JAM CRM Build / Fix Level | |
| Pre-existing eGen Application Compiles?<br>Specify Yes or No. | |

In the following table, specify the JVM version and vendor in the columns provided.

| Version | Vendor |
|---|---|
| | |

The following table lists additional questions to help us serve you better.

| Request/Question | Error/Problem Details or Information |
|---|---|
| Provide usage scenarios or summarize the application that produces the problem. | |
| Did this happen previously? | |
| Is this configuration working on any other system? | |
| Can you reproduce this problem consistently? | |

| Request/Question | Error/Problem Details or Information |
| --- | --- |
| Any **change in the application environment** including:<br>• Migrating to a new WebLogic Server service pack or version.<br>• Installing a new operating system on WebLogic Server side or CRM component side.<br>• Migrating to a new CICS or IMS region, version, or operating system. | |
| Under what circumstance does the problem *not* occur? | |
| Describe the **steps** to reproduce the problem. | |
| Describe the **problem**. | |
| Specify the **error** message(s). | |

The following table lists error/problem files that might be applicable.

| Error/Problem Files | Error/Problem File Detail or Information |
|---|---|
| WebLogic Server Application logs or error messages | |
| CICS or IMS application logs or error messages | |
| WebLogic Server configuration file | |
| iWay JAM configuration file | |
| Third party stack SNA configuration | |
| VTAM Logical Unit definitions | |
| iWay JAM CRM startup script and script messages | |
| iWay JAM CRM JCL and JOB information (JESMSGLG, JESJCL, JEYSYSMSG) | |
| iWay JAM gateway trace diagnostics | |
| iWay JAM CRM trace diagnostics | |
| APPC trace files | |

## Collecting iWay JAM Diagnostics

If you are requested to collect additional iWay JAM diagnostic files, see the Diagnostics section in the *iWay Java Adapter for Mainframe Programming Guide*.

iWay JAM runtime traces are sent to the WebLogic log as "Debug" messages. Debug messages are written to each WebLogic Server's log file but are not sent to the administration server. In addition, these messages are only sent to the server's `stdout` if the server's configuration has both the *Log to Stdout* and *Debug to Stdout* options selected on the server's Logging/General page.

For instructions on accessing Gateway tracing options, see the *iWay Java Adapter for Mainframe Configuration and Administration Guide*.

## User Feedback

In an effort to produce effective documentation, the Documentation Services staff welcomes your opinions regarding this manual. Please use the Reader Comments form at the end of this manual to communicate suggestions for improving this publication or to alert us to corrections. You also can go to our Web site, http://www.iwaysoftware.com and use the Documentation Feedback form.

Thank you, in advance, for your comments.

## iWay Software Training and Professional Services

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For information on course descriptions, locations, and dates, or to register for classes, visit our World Wide Web site, http://www.iwaysoftware.com or call (800) 969-INFO to speak to an Education Representative.

Interested in technical assistance for your implementation? Our Professional Services department provides expert design, systems architecture, implementation, and project management services for all your business integration projects. For information, visit our World Wide Web site, http://www.iwaysoftware.com.

# Contents

CHAPTER 1

# Introduction to Installing iWay JAM

**Topics:**

- About the iWay JAM Components
- About the iWay License
- Roadmap for Installing iWay JAM

Proper installation is essential to successfully operating iWay Java Adapter for Mainframe (iWay JAM). The following sections will provide an overview of the iWay JAM installation process.

# About the iWay JAM Components

To meet the demands of today's business environment, iWay JAM integrates back-end systems with Web-based e-business applications. Business transactions supported by these applications often require direct integration with existing mainframe legacy applications. iWay JAM meets these integration requirements by providing bi-directional, online request-response integration between Java applications and mainframe applications.

iWay JAM enables applications running on WebLogic Server and mainframe systems to interact using two main components:

- iWay JAM Gateway

  The iWay JAM Gateway component is a server that runs within WebLogic Server and communicates with the CRM using the TCP/IP protocol. The iWay JAM Gateway acts as a gateway to route requests and responses between WebLogic Server (Java) and mainframe systems, such as CICS and IMS. The Gateway component also forwards configuration information to the CRM at startup.

  An iWay JAM Gateway used in conjunction with the CRM enables applications running on an instance of WebLogic Server to connect to back-end applications. Each WebLogic Server instance that needs to access back-end applications should have an iWay JAM Gateway defined for it. This iWay JAM Gateway routes requests received from Java client applications running on this instance of WebLogic Server to the CRM, which then will forward them to the back-end application. The Gateway also routes requests made by mainframe client applications that have come through the CRM to the necessary WebLogic Server applications.

- Communications Resource Manager (CRM)

  The CRM is the iWay JAM component that manages communications resources. The CRM coordinates the flow of data between Java applications running on a WebLogic Server platform and applications running on a mainframe.

  The CRM uses SNA and TCP/IP communication protocols to communicate with the mainframe and iWay JAM Gateway respectively. TCP/IP protocols always flow between the iWay JAM Gateway and the CRM. SNA protocols always flow from the CRM to the mainframe and from VTAM on the mainframe to the CRM depending upon the configuration option.

## About the iWay License

The *license.xml* file is installed during the installation and contains a 120-day evaluation license.

The production license, named *license_JAM.xml*, must be installed in the same directory as the *license.xml* file. Do not replace the production license with the evaluation license, which must remain in the same directory. Do not rename the production license, since it must coexist with the *license.xml* file as *license_JAM.xml*.

## Roadmap for Installing iWay JAM

Proper installation of the iWay JAM software involves the following tasks:

- Prepare to Install iWay JAM.

  See Chapter 2, *Preparing to Install iWay Java Adaper for Mainframe*.

  - Determine the installation method.
  - Determine your hardware requirements.
  - Verify iWay JAM software requirements.
- Install iWay JAM.

  See Chapter 3, *Installing iWay Java Adapter for Mainframe*.

  - Install the iWay JAM Gateway.
  - Install the CRM.
- Verify your installation.

  See Chapter 5, *Verifying Your Installation*.

  - Verify installation files and directories.
  - Run the installation verification sample.
- Perform post-installation task.

  See Chapter 4, *Performing Post-Installation Tasks*.

  - Manage your production license file.
  - Deploy iWay JAM in the WebLogic Server Environment.

CHAPTER 2

# Preparing to Install iWay Java Adaper for Mainframe

**Topics:**

- Determining the Installation Method
- Determining Your Hardware Requirements
- Verifying iWay JAM Software Requirements

You must complete several tasks before you install the iWay Java Adapter for Mainframe (iWay JAM). If you are migrating from a previous version of BEA JAM, see the *iWay Java Adapter for Mainframe Migration Guide*.

# Determining the Installation Method

The components of iWay JAM may be installed on a variety of platforms. See the *iWay Java Adapter for Mainframe Release Notes* for a complete list of supported platforms.

The iWay JAM Gateway can be installed in the following ways:

- On Microsoft Windows platforms, a graphical InstallShield Wizard is used. The following executable is used:

  **bwl8jam_vtam_win32.exe** - Installer for the Windows platform. It installs a .zip file containing the CRM component to be installed on the mainframe.

- On UNIX platforms, the installation is accomplished with the InstallShield Wizard, using either a graphical interface or a console (text mode) interface. The following installation files can be used:

  - **bwl8jam_vtam_hpux11.bin** - Installer for HP-UX 11.
  - **bwl8jam_vtam_solaris.bin** - Installer for the Solaris 8 and 9 SPARC chipset. It installs a .tar file with the CRM component to be installed on the mainframe.
  - **bwl8jam_vtam_solarisx86.bin** - Installer for the solaris 9 Intel chipset. It installs a .tar file with the CRM component to be installed on the mainframe.
  - **bwl8jam_dcl_solaris.bin** - Installer for the Solaris 8 and 9 SPARC chipset. It installs the CRM for the DCL stack.

The Communications Resource Manager (CRM) can be installed in the following ways:

- On z/OS Unix, installation occurs using a Unix script.
- On z/OS MVS, installation involves Job Control Language (JCL) files.

After the installation is complete, the installation may be validated using the supplied installation verification samples. Verification samples are provided for CICS or IMS.

After iWay JAM is installed, it may be removed or uninstalled. Similar to the install interface, the uninstall interface on Microsoft Windows platforms is solely graphical. The uninstall interface on Unix platforms may be either console or graphical. No iWay JAM uninstall function is provided for the CRM.

## Determining Your Hardware Requirements

Before you begin installing the iWay JAM software, verify that your system meets the size requirements for installing and running the iWay JAM components. The following requirements must be met for the iWay JAM Gateway and the CRM to be successfully installed:

- Platform Requirements

  A certified WebLogic Server platform is required. See the *iWay Java Adapter for Mainframe Release Notes* for a complete list of supported platforms.

- Hard Disk Drive Requirements

  In addition to the requirements for a WebLogic Server installation, an additional 40-MB of free storage space is required to install iWay JAM. Up to an additional 30-MB will be required temporarily for extracting the mainframe files during installation. The mainframe files can be deleted after installation is complete.

  The mainframe files require approximately 13-MB of free storage space on z/OS Unix. An additional 5-MB of free storage is required during installation for extracting the compressed files.

  The mainframe files require approximately 30 cylinders of free storage space on MVS. An additional 20 cylinders of free space is required during installation for extracting the compressed files.

- Memory Requirements

  For a Microsoft Windows or Unix system, adding a basic iWay JAM configuration to a WebLogic Server installation does not significantly increase the system RAM requirements. But increasing the number of service definitions will increase the memory requirement for iWay JAM.

## Verifying iWay JAM Software Requirements

Verify that the following software is installed before you install iWay JAM:

- Java Development Kit (JDK)

  A JDK is required by the InstallShield installation product to install the iWay JAM software.

- WebLogic Server 8.1 with a minimum of Service Pack 2 (SP2)

For additional service pack or fix requirements for WebLogic Server, see the *iWay Java Adapter for Mainframe Release Notes*.

CHAPTER 3

# Installing iWay Java Adapter for Mainframe

**Topics:**

- Locating the Installation Files
- Installing the iWay JAM Product
- Installing the CRM
- Deploying iWay JAM in the WebLogic Server Environment

After you have reviewed Chapter 2, *Preparing to Install iWay Java Adaper for Mainframe*, you are ready to begin installing iWay JAM.

## Locating the Installation Files

Locate the following installation files:

- **bwl8jam_vtam_hpux11.bin** - Installer for HP-UX 11.
- **bwl8jam_vtam_win32.exe** - Installer for the Windows platform, it installs a .zip file containing the CRM component to be installed on the mainframe.
- **bwl8jam_vtam_solaris.bin** - Installer for the Solaris 8 and 9 SPARC chipset. It installs a .tar file with the CRM component to be installed on the mainframe.
- **bwl8jam_vtam_solarisx86.bin** - Installer for the solaris 9 Intel chipset. It installs a .tar file with the CRM component to be installed on the mainframe.
- **bwl8jam_dcl_solaris.bin** - Installer for the Solaris 8 and 9 SPARC chipset. It installs the CRM for the DCL stack.

  If you purchased iWay JAM, select the file that corresponds to your system. If you downloaded iWay JAM from the Web for evaluation, only the file you requested will be downloaded.

## Installing the iWay JAM Product

Determine the platform on which you will install the iWay JAM product. The iWay JAM product can be installed in the following ways:

- In Graphical mode on Microsoft Windows or Unix

  Graphical-mode installation is the graphics-based method of executing the iWay installation program. It can be run on Microsoft Windows and Unix systems.

  To run 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 Microsoft Windows systems support Java-based GUIs, but not all consoles for Unix systems do.

- In Console mode on Unix

  Console-mode installation is the text-based method of executing the iWay JAM installation program. It can be run only on Unix systems and is intended for Unix systems with non-graphic consoles.

## Installing the iWay JAM Product Using Graphical-Mode Installation

Graphical-mode installation of iWay JAM may be used on Microsoft Windows or Unix systems. This installation will install the iWay JAM Product and the files for the installation of the CRM.

### Prepare to Install the iWay JAM Product

To prepare to install the iWay JAM product using the graphical mode, complete the steps in the following section that correspond to your platform.

### Procedure: How to Install iWay JAM Product On Microsoft Windows Platforms

Java 2 Standard Edition (J2SE™) SDK 1.3.1 or higher is required for iWay JAM 5.1 installation. For Windows, LINUX, and Solaris™, you can download and install the latest SDK at no charge from:

```
http://java.sun.com/j2se/downloads.html
```

For other platforms, contact the appropriate vendor.

**Note:** The terms JDK™ and Java SDK™ are synonymous. Java SDK was formerly called JDK.

To determine if Java is properly installed, execute the following at a command prompt:

```
java -version
```

Information on the Java build appears, for example:

```
java version "1.4.1_03"
Java(TM) 2 Runtime Environment, Standard Edition (build 1.4.1_03-b02)
Java HotSpot(TM) Client VM (build 1.4.1_03-b02, mixed mode)
```

After installing the Java SDK, the Java command must be in your search path to install iWay JAM 5.1. On Windows, the Java SDK installation normally handles this for you by placing a copy of java.exe in C:\WINNT\system32. On other platforms, ensure the following is in your PATH variable:

```
/java_home/bin
```

where:

*java_home*

Is the absolute path where the Java SDK is installed.

On Windows, you may wish to add \java_home\bin directory to your search path as well, so that the jar.exe command is available.

Access the bwl8jam_vtam_win32.exe file in one of the following ways:

1. Download the .exe file from the Web. Click on the .exe file to begin the installation.

2. Insert the iWay JAM CD-ROM in the appropriate drive. The bwl8jam_vtam_win32.exe file should run automatically. If it does not, click *Run* from the Start menu.

   The Run window appears.

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

   b. Select the *bwl8jam_vtam_win32.exe* file.

   c. 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 InstallShield screen appears. Continue with the installation of the iWay JAM Product by completing the steps in *How to Install the iWay JAM Product* on page 3-5.

## Procedure: How to Install iWay JAM Product On Unix Platforms

Java 2 Standard Edition (J2SE™) SDK 1.3.1 or higher is required for iWay JAM 5.1 installation. For Windows, LINUX, and Solaris™, you can download and install the latest SDK at no charge from:

```
http://java.sun.com/j2se/downloads.html
```

For other platforms, contact the appropriate vendor.

**Note:** The terms JDK™ and Java SDK™ are synonymous. Java SDK was formerly called JDK.

To determine if Java is properly installed, execute the following at a command prompt:

```
java -version
```

Information on the Java build appears, for example:

```
java version "1.4.1_03"
Java(TM) 2 Runtime Environment, Standard Edition (build 1.4.1_03-b02)
Java HotSpot(TM) Client VM (build 1.4.1_03-b02, mixed mode)
```

After installing the Java SDK, the Java command must be in your search path to install iWay JAM 5.1. Ensure the following is in your PATH variable:

```
/java_home/bin
```

where:

*java_home*

Is the absolute path where the Java SDK is installed.

On Unix, you may wish to add /java_home/bin directory to your search path as well, so that the jar.exe command is available.

Access the bwl8jam_vtam_solaris.bin file in one of the following ways:

1. Download the .bin file from the Web.

2. Use FTP in binary mode to transfer the installation file to your UNIX machine, or mount the CD to an accessible mnt directory.

   **Note:** Installing as a root is not recommended.

3. Navigate to the directory containing the installation file.

4. Ensure the installation file is executable, for example:

   ```
   chmod 755 bw*
   ```

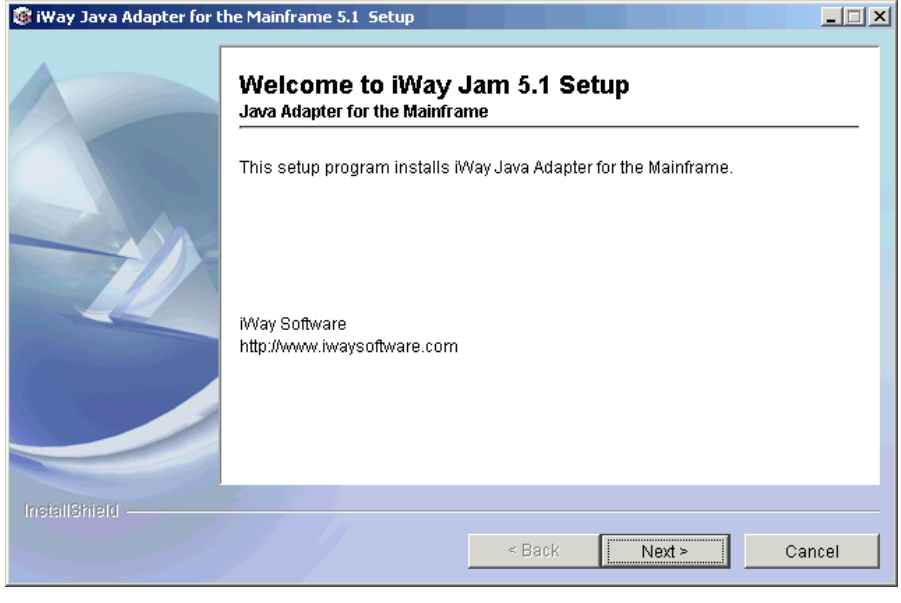
5. Execute the installation program. For example,

   ```
   sh bwl8jam_vtam_solaris.bin
   ```

   The InstallShield screen appears. Continue with the installation of the iWay JAM Product by completing the steps in *How to Install the iWay JAM Product* on page 3-5.

## Procedure: How to Install the iWay JAM Product

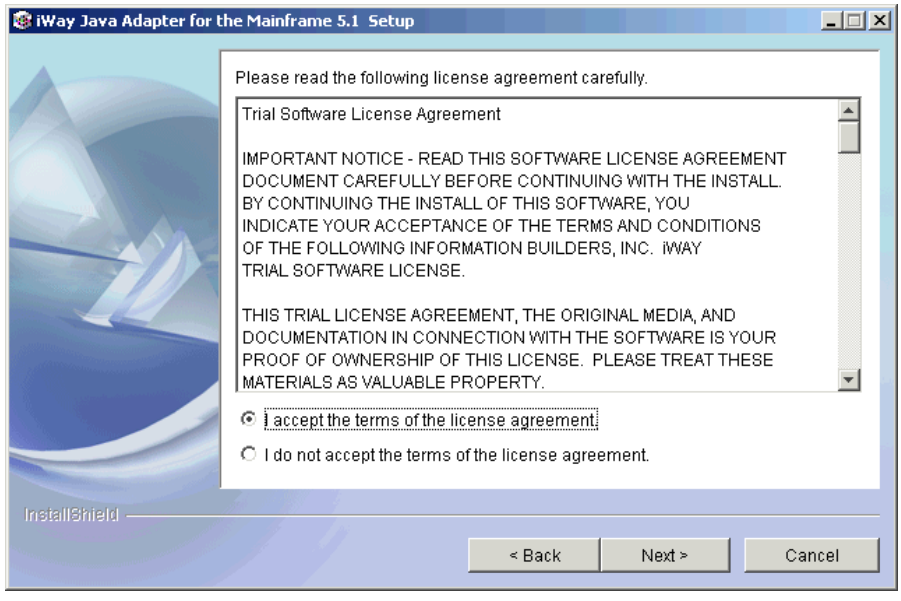
After the InstallShield Wizard screen appears, the iWay Java Adapter for Mainframe splash screen opens, followed by the Introduction screen.




1. Select *Next* on the Introduction screen to begin the installation.

   **Note:** To stop the installation process and exit the program, click *Cancel* on any screen.

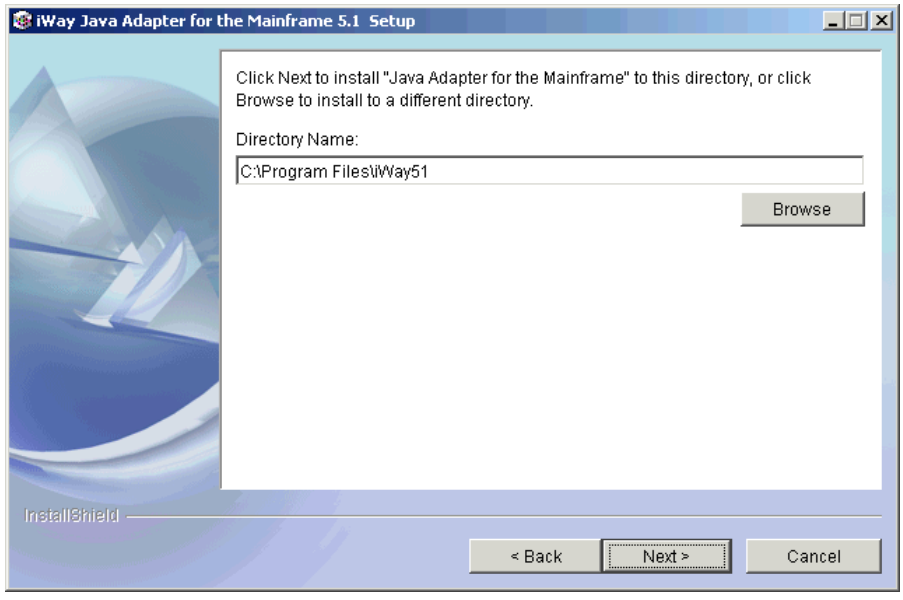
The License Agreement screen opens.




2. After reading the license agreement, select *I accept the terms of the license agreement* to accept the license agreement.
3. Click *Next* to proceed with the installation.

   **Note:** If you do not accept the license agreement, you will not be able to continue with the installation. You must either exit the installation or go back to the previous screen.

   The Choose Installation Directory screen opens.

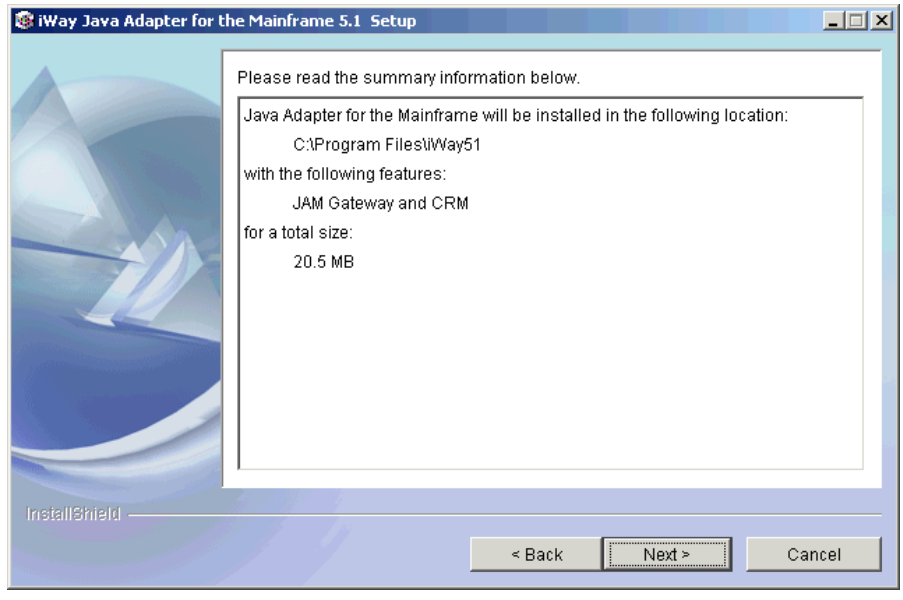



**4.** In the Directory Name field, specify the location where you want to install iWay JAM 5.1. A default location is provided.

You can click *Browse* to navigate to a specific location.

**5.** Click *Next*.

The Installation Summary screen opens.

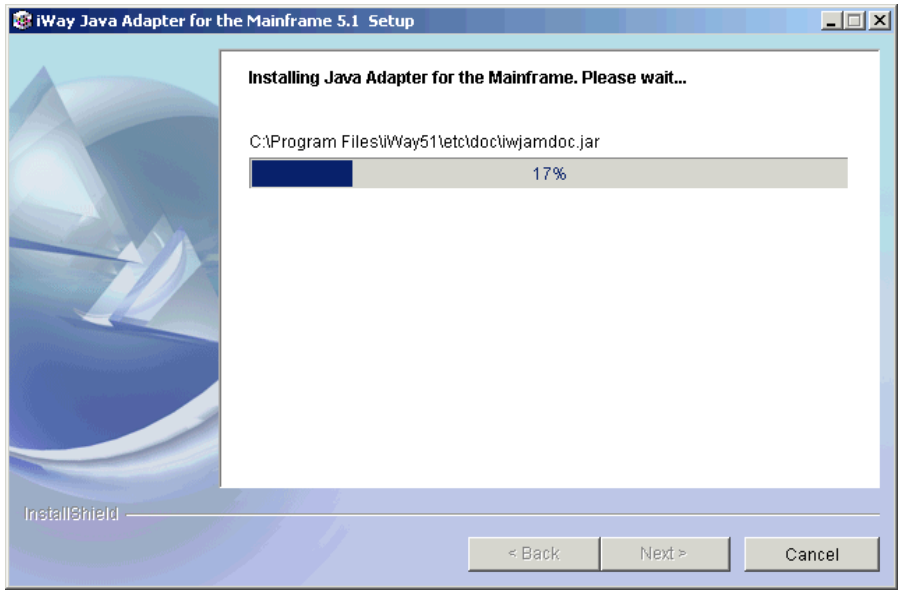



**6.** Review the installation summary, which includes installation location, features, and disk size.

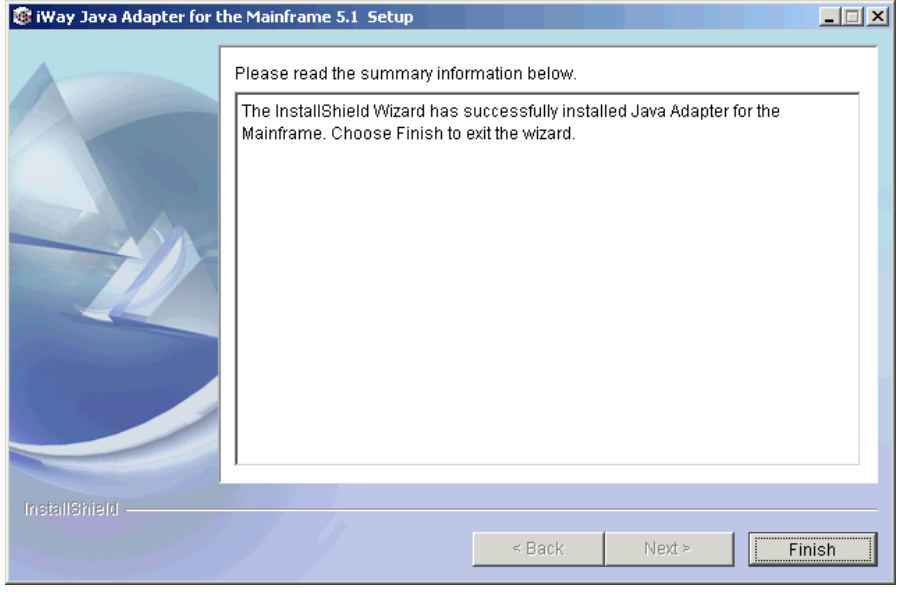
If you need to make a change to the installation, click *Back* to return to a previous screen in the InstallShield Wizard.

**7.** Click *Next* once you have reviewed the installation summary and are ready to install iWay JAM 5.1.

The Installation Progress screen opens showing a status bar indicator.




Once the installation is finished, the Install Complete screen opens.




**8.** Click *Finish* to exit the installation program.

iWay JAM 5.1 is now installed on your machine.

9. Install the CRM as described in *Installing the CRM* on page 3-12 to verify the files and run the installation verification sample.

## Installing the iWay JAM Product on Unix Systems Using Console-Mode Installation

To install the iWay JAM Product and the files for the installation of the CRM on Unix systems using the console-mode installation, run the iWay standard installation shell script for the platform on which you want to install iWay JAM. Select the following scripts:

- **bwl8jam_vtam_hpux11.bin**
- **bwl8jam_vtam_solaris.bin**
- **bwl8jam_vtam_solarisx86.bin**
- **bwl8jam_dcl_solaris.bin**

**Note:** This procedure follows the text installation. The prompts in a GUI installation are identical.

To install iWay JAM on a Unix system using console mode, perform the following steps.

1. Use FTP in binary mode to transfer the installation file to your UNIX machine, or mount the CD to an accessible mnt directory.

   **Note:** Installing as a root is not recommended.

2. Navigate to the directory containing the installation file.

3. Ensure the installation file is executable, for example:

   ```
   chmod 755 bw*
   ```

4. Start the installation by executing the installation program for your platform and version of iWay JAM 5.1 The name of the installation will vary by platform and JAM CRM option.

   If you do not have an X Windows environment, use the text-based installation by executing the installation program with the -console option, for example:

   ```
   ./bwl8jam_vtam_solaris.bin -console
   ```

   If you have an X Windows environment, you can use a GUI based installation by executing the installation program with no options, for example:

   ```
   ./bwl8jam_vtam_solaris.bin
   ```

   Once the installation is initialized, a Welcome prompt appears:

   ```
   Welcome to iWay Jam 5.1 Setup
   Java Adapter for the Mainframe
   This setup program installs iWay Java Adapter for the Mainframe.
   ```

```
iWay Software
http://www.iwaysoftware.com

Press 1 for Next, 3 to Cancel or 4 to Redisplay [1]
```

5. Press *Enter* to continue.

   A license agreement appears.

6. Review the agreement and press *Enter* until you see the following prompt:

```
Please choose from the following options:

[ ] 1 - I accept the terms of the license agreement.

[X] 2 - I do not accept the terms of the license agreement.

To select an item enter its number, or 0 when you are finished: [0]
```

7. If you accept the terms, enter 1 and press *Enter*.

   The prompt repeats showing the new value.

```
[X] 1 - I accept the terms of the license agreement.

[ ] 2 - I do not accept the terms of the license agreement.

To select an item enter its number, or 0 when you are finished: [0]
```

8. Press *Enter* again.

   A navigation prompt appears.

```
Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1]
```

9. Press *Enter* to continue.

   The installation directory prompt appears:

```
Java Adapter for the Mainframe Install Location

Please specify a directory or press Enter to accept the default
directory.

Directory Name: [/u1/iwayqa/iWay51]

Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1]
```

10. Specify where to install iWay Java Adapter for the Mainframe and then press *Enter*.

    Ensure this is a directory to which you have write access.

    A confirmation screen appears.

```
Java Adapter for the Mainframe will be installed in the following
location:

/u1/iwayqa/dcl/iWay51
```

```
with the following features:

JAM Gateway and CRM

for a total size:

 35.1 MB

Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1]
```

11. Verify the installation directory and the size requirements before proceeding.
12. Press *Enter* to install iWay Java Adapter for the Mainframe.

    Files are copied to your system and configured.

    When this completes a message displaying the results displays.

    ```
    The InstallShield Wizard has successfully installed Java Adapter for
    the Mainframe. Choose Finish to exit the wizard.

    Press 3 to Finish or 4 to Redisplay [3]
    ```

13. Press *Enter* to continue.

    iWay JAM 5.1 is now installed on your machine.

14. Install the CRM as described in *Installing the CRM* on page 3-12 to verify the files and run the installation verification sample.

# Installing the CRM

Installation files for the CRM are placed in the iWay JAM installation directory during the installation process based on your selection of the install set. To install the CRM, use FTP to send the CRM files to the mainframe and run the specific install procedure for that platform. The following sections provide installation instruction for supported platforms.

**Note:** The mainframe, CICS, and IMS do not need to be restarted for a iWay JAM installation.

## Installing the CRM on Solaris

When your CRM will run on your Solaris installaiton using the DCL SNAP-IX product, the install procedure installs all necessary components to run the CRM for the DCL product in your iWay 51 JAM directory. You can find the CRM components under iWay51/tools/crm directory.

For more information on configuring and running the CRM for DCL, see the *iWay Java Adapter for Mainframe Configuration and Administration Supplement for DCL SNAP-IX*.

## Installing the CRM on z/OS Unix

If you selected the JAM & CRM Unix install set during the installation of the iWay JAM Product, complete the following steps to install the CRM on the mainframe in a z/OS Unix environment.

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

### Procedure: How to Install the CRM on z/OS Unix

1. Create a temporary directory on your z/OS Unix file system for the installation files.
2. Using FTP, send the *os390.tar* file (in binary mode) from the location you unzipped your CRM for the mainframe components to your temporary location.
3. Create a production iWay 51 installation directory, with the appropriate user and group permissions for installing and running the CRM for the z/OS Unix environment. For example:

   ```
   <product home>/iWay51/CRM
   ```

4. Navigate to this location to prepare for the installation of the CRM z/OS Unix components.
5. To extract the installation script from the .tar file on the mainframe, use the following command:

   ```
   tar xvf <temporary ftp install directory>/os390.tar
   ```

   Executing the .tar command extracts the CRM bin and lib components into your current installation directory.

For more information on how to configure your CRM on the z/OS Unix System Services environment, see the *iWay Java Adapter for Mainframe Configuration and Administration Guide*.

## Installing the CRM on z/OS MVS

If you selected the JAM & CRM MVS install set during the installation of the iWay JAM Gateway, complete the following steps to install the CRM on the mainframe in a z/OS MVS environment.

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

The following files relating to this installation procedure are available in the iwjamcrmmf.zip archive (Windows) and iwjamcrmmf.tar archive (Unix). These archives can be found in the <JAM_INSTALL_DIR>\etc\setup directory.

- The readme file contains notes on how to install the product in this environment. This file is a summary of the procedure in this section.
- The createds.jcl is a JCL example for creating MVS data sets to receive the iWay JAM software.
- The uncmprss.jcl file is a JCL example to uncompress and unload into the product data sets.
- The JAM51.LOAD file contains the iWay JAM program objects. (Required)
- The JAM51.DATA file contains iWay JAM data files. (Required)
- The JAM51.SAMPLE file contains sample JCL files.

### Procedure: How to Install CRM on z/OS MVS

Perform the following steps to install the CRM component on a z/OS MVS platform.

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

You may transfer the files with IND$FILE protocol, if you prefer, provided the text files are transferred in text mode, and the LOAD, DATA, and SAMPLE files are in binary mode. See your Terminal Emulation Software for instructions.

1. Using FTP, send the following JCL files in ASCII to the MVS system using any PDS you choose as the destination:

   ```
   createds.jcl
   ```

   ```
   uncmprss.jcl
   ```

   **Note:** Use conventional MVS naming standards for the destination member name. For example:

   ```
   ftp>put createds.jcl CREATEDS
   ```

2. Change the CREATEDS job to suit your environment. This JCL allocates the data sets needed to receive and install the product software files from the product distribution.

   Use the SET statements in the CREATEDS job to set the high-level qualifiers of the receiving data sets according to the following syntax:

   `SET HLQPDSE=[QUALIFIER]`

   In this statement, [QUALIFIER] is the high-level qualifier for the CRM load library. The load library containing the JAM51.LOAD program objects must be a partitioned data set with extended attributes (PDSE).

   `SET SCLASS=[CLASS NAME]`

   In this statement, [CLASS NAME] is the storage class name of the PDSE.

   `SET HLQPDS=[QUALIFIER]`

   In this statement, `[QUALIFIER]` is the high-level qualifier for the sample and data sets.

   `SET TMPHLQ=[QUALIFIER]`

   In this statement, `[QUALIFIER]` is the high-level qualifier for the temporary data sets. These temporary data sets will be used to receive the distribution files from the FTP.

   The CREATEDS job has the following steps:

   `DELETE`

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

   `CREATE`

   Allocates the data sets needed to receive and install the product software files.

3. Run the CREATEDS job.

4. Using FTP, put the following product files into their corresponding data sets. The data sets were created in the previous step and have the high-level qualifier identified by TMPHLQ.

   `JAM51.LOAD`

   `JAM51.DATA`

   `JAM51.SAMPLE`

   From the Unix or Microsoft Windows command prompt, set the binary data transfer mode using the FTP program.

5. Transfer the data sets using the PUT command.

   Note the following example of a PUT command:

```
put JAM51.LOAD 'BEA.JAM51.TEMP.LOAD'
```

**6.** Change the UNCMPRSS job to suit your environment.

Use the SET statement in the UNCMPRSS job to set the high-level qualifiers of the temporary data sets using the same value that was used in CREATEDS:

```
SET TMPHLQ = <TMPHLQ>
```

In this statement, TMPHLQ identifies the high-level qualifier used for the temporary data sets created in step 1.

Modify the following variables in the SYSIN JCL to the high-level qualifiers used in step 1:

`HLQPDSE`

The value from the SET HLQPDSE in CREATEDS.

`HLQPDS`

The value from the SET HLQPDS in CREATEDS.

The UNCMPRSS job has the following steps:

`UNLOAD`

Performs a TSO RECEIVE to uncompress and unload the data in your installation data sets created with the CREATEDS job. This step will delete the temporary data sets created by CREATEDS.

**Note:** Instead of running the UNCMPRSS job, you may choose to manually perform the TSO RECEIVE command. This command unloads the data in your temporary installation data sets. Run TSO RECEIVE in the following way:

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

When prompted, enter:

```
DA("yyy")
```

where:

*xxx*

Is the temporary data set from CREATEDS. For example, [TMPHLQ].LOAD.

*yyy*

Is the data set that from CREATEDS that corresponds to the HLQPDS data sets and the HLQPDSE data set.

**7.** Run the UNCMPRSS job.

## Deploying iWay JAM in the WebLogic Server Environment

After iWay JAM has been installed, it must be deployed in the WebLogic Server environment. The following tasks must be completed if you are not running a pre-configured sample.

You can deploy iWay JAM in the following ways:

- If you are creating applications, the example domain and the verify domain are examples of domains deployed in the WebLogic Server environment. You may want to use these domains as a starting point, adding other J2EE applications to meet your specific requirements.
- If you are adding iWay JAM to existing WebLogic Server applications, you need to manually deploy iWay JAM by completing the following steps:
    - Adding the iwjam.jar file to the WebLogic Server CLASSPATH
    - Deploying the iwjam.jar file
    - Defining the iWay JAM startup class

For more information on how to deploy iWay JAM, see the *iWay Java Adapter for Mainframe Configuration and Administration Guide*.

CHAPTER 4

# Verifying Your Installation

**Topics:**

- Using the Installation Verification Samples
- Roadmap for Installation Verification Samples
- Before You Use the Samples
- Using the Installation Verification Sample for IMS
- Using the Installation Verification Sample for CICS

When you have completed the iWay Java Adapter for Mainframe (iWay JAM) installation process, it is recommended that you verify your installation.

# Using the Installation Verification Samples

After you have installed iWay JAM, run the installation verification sample that corresponds to your system:

- Installation verification sample for IMS
- Installation verification sample for CICS

## About the Installation Verification Samples

As the name implies, the installation verification samples are designed to allow you to verify that iWay JAM is installed and running on your system. The samples allow a client to make a request of a mainframe server program on either IMS or CICS.

The samples are designed to run "out of the box" with very limited modification. The installation verification samples include:

- Java Files
  - Java .class files
  - Java source
  - eGen scripts
  - Build scripts
  - Preconfigured WebLogic Server domain
- Mainframe Files
  - Mainframe source
  - Sample JCL
  - IMS or CICS sample configurations

**Note:** JCL to compile the mainframe sample programs is included as examples to provide completeness. The JCL that is shipped may not conform to your standards or installations. The sample JCL may need to be modified or replaced to meet your needs.

Program definitions and other configuration for your IMS or CICS region may require coordination with the IMS or CICS system programmer.

Most configuration tasks are preconfigured or completed during the installation process. Working from the WebLogic Administration Console, you can make the modifications required for the sample to run on your system. When these modifications are complete, you can run the simple client supplied by the sample to verify that iWay JAM is installed and running properly. The installation verification sample runs in the supplied verify domain. The client uses the Gateway to send a request from the WebLogic Server environment to the mainframe. The mainframe server converts the supplied string from mixed case to uppercase.

The only difference between the IMS and the CICS sides of this sample is that for IMS, TOUPPER is an APPC Service that is mapped to an IMS transaction; for CICS, TOUPPER is a DPL Service that is mapped to a CICS program.

## How to Use the Samples

While the iWay JAM samples contain precompiled source for the Java portion of the sample, you may choose to generate and compile source. Depending on your skill, experience, and time-constraints, you may choose to work with the Java portion of the samples in the following ways:

- Run the sample

  Because of the contents shipped with the samples, in most cases, you can simply run the sample with minimal configuration to run on your system. The sample will use the supplied .class files.

- Compile source and run the sample

  Each sample provides build scripts that allow you to compile the source. This option allows you to see how the source is compiled and run the sample.

- Generate source, compile, and run the sample

  Each sample provides eGen scripts. This option allows you to use eGen Application Code Generator to generate source. Afterward, the build scripts can be run. By using this option, you can see how the eGen utility generates source and run the sample.

### Preconfigured WebLogic Server Domains

The iWay JAM installation includes a directory named config. This config directory contains subdirectories for two preconfigured WebLogic Server domains:

- verify

  WebLogic Server domain that is set up for running the installation verification. verify is the directory that contains the files necessary to configure and run the verify domain

- examples

  WebLogic Server domain that is set up for examples of iWay JAM running with WebLogic Server and mainframe applications

## Roadmap for Installation Verification Samples

To run each of the installation verification samples, follow the roadmap listed below:

1. Verify prerequisite tasks.

   For a listing of prerequisite tasks, see *Before You Use the Samples*.

2. Configure the sample.

   See *Configuring the Sample for IMS* on page 4-7 or *Configuring the Sample for CICS* on page 4-20.

   a. Start the CRM.

   b. Update the iWay JAM configuration file.

   c. Start the verify domain.

   d. Configure the iWay JAM Gateway.

   e. Enable services.

   f. Set the environment.

   g. Generate and build source (optional).

   h. Complete mainframe tasks.

3. Run the sample.

## Before You Use the Samples

Before you run the samples, the following tasks must be completed:

- Install WebLogic Server.

  For information about installing WebLogic Server, see the BEA WebLogic Server documentation.

- Install iWay JAM.

  For information about installing iWay JAM, see Chapter 3, *Installing iWay Java Adapter for Mainframe*.

- Define the Logical Unit for the CRM and vary it active.

  For information about defining the Logical Unit, see the *iWay Java Adapter for Mainframe Configuration and Administration Guide*.

- If using IMS, verify that the APPC communication to IMS is active.

  For information about APPC communication with iWay JAM, see the *iWay Java Adapter for Mainframe Configuration and Administration Guide*.

- If using CICS, the connection must be defined to the CICS region.

  For information about CICS connection with iWay JAM, see the *iWay Java Adapter for Mainframe Configuration and Administration Guide*.

# Using the Installation Verification Sample for IMS

After completing the tasks in *Before You Use the Samples* on page 4-4, you are ready to configure and run the sample.

## How the Sample Works

The program TOUPIMS is a simple COBOL IMS server program that dequeues the request data, converts the data to uppercase, then inserts the data back on the message queue. The copybook CHARDATA provides the structure of the user data in the request and response messages. No special considerations are required in this program as a result of being used in an application with a Java client making requests through iWay JAM.

### Understanding the Sample Configuration

For this simple sample, no special configuration is required. The Java client calls the service TOUPPER.

- Gateway

  The APPC Service TOUPPER is mapped to the name of the IMS transaction program, TOUPIMS.

- On the mainframe

  The server program TOUPIMS is defined to the IMS region in the usual way any program is defined to an IMS region.

### Understanding the Sample Programming

The programming for this sample is described in the following sections.

## WebLogic Application

Three classes compose the WebLogic side of this sample application:

- Chardata
- BaseClient
- Client

Chardata is a DataView class that is generated by the eGen Application Code Generator. The data member in the Chardata class corresponds to the data field in the CHARDATA copybook. The Chardata class is responsible for all data translation between the mainframe format of the data and the Java format of the data.

The BaseClient class that is generated by the eGen Application Code Generator is an extension of the EgenClient class. BaseClient is the class that implements the actual calls to the TOUPPER mainframe service in its toupper method. The toupper method is a wrapper for the callService method of the EgenClient class with the TOUPPER service as a parameter.

The Client class is the actual user interface. The Client class has a BaseClient member. The Client class receives string input as a command line argument. You may also enter a URL if the iWay JAM Gateway is running on a different machine or the corresponding instance of WebLogic Server is listening on a different port than 7001. The URL is set in the BaseClient member. In the Client class, a Chardata DataView is initialized with the input data. The toupper method of the BaseClient member is called with this DataView as a parameter. The converted string value encapsulated in the returned DataView is then displayed.

## IMS Program

The program TOUPIMS is a simple COBOL IMS server program that dequeues the request data, converts the data to uppercase, then inserts the data back on the message queue. The copybook, CHARDATA, provides the structure of the user data in the request and response messages. No special considerations are required in this program as a result of being used in an application with a Java client making requests through iWay JAM.

## Sample Files

The files for the WebLogic side of the sample are installed in the following directory:

```
<JAM_INSTALL_DIR>\tools\egen\samples\verify\gateway\outbound
```

The following table lists the sample files and their purpose:

| File Name | File Purpose |
|---|---|
| chardata.cpy | COBOL copybook that defines the structure of the string mainframe data. |

| File Name | File Purpose |
|---|---|
| chardata.egen | eGen script that generates the Chardata.java DataView class. |
| Chardata.java | DataView class that corresponds to the chardata.cpy COBOL copybook. |
| baseClient.egen | eGen script that generates the Chardata.java DataView class and the BaseClient.java EgenClient class. |
| BaseClient.java | Java class that extends EgenClient class that calls the TOUPPER service. |
| Client.java | The user-interface client class that receives the input string from the user, and displays the result of the TOUPPER service to the user. It invokes the TOUPPER service by calling the callService method of its BaseClient member. |
| build.cmd | Script that builds the Chardata, BaseClient, and Client classes. The built class files are in the following directory:<br>`<JAM_INSTALL_DIR>\etc\samples\iwjam\domains\verify\clientclasses\verify\gateway\outbound` |

The files for the IMS side of the sample are installed in the following directory:

`<JAM_INSTALL_DIR>\tools\egen\samples\verify\IMS\outbound\source`

The following table lists the samples files and their purpose:

| File Name | File Purpose |
|---|---|
| CHARDATA | COBOL copybook that defines the structure of the string input and output data. |
| COMPTOUP | JCL that compiles and links the `TOUPIMS` program. |
| JAMDEFI | Contains sample IMS stage 1 and `PSBGEN` input for the IMS configuration of the `TOUPIMS` program. |
| TOUPIMS | IMS server program that receives a string in mixed case and returns the string in uppercase. |

## Configuring the Sample for IMS

To configure the installation verification sample for IMS, perform the following steps.

### Step 1: Start the CRM

Before starting the iWay JAM Gateway, start the CRM. The CRM must be configured with certain parameter values at startup. These parameter values include:

- The address of the machine on which the CRM is running
- The port on which the CRM listens
- The name the Gateway will use to refer to the CRM

For running the samples, you must set the machine address and port. The values that you set for the machine address and port when the CRM is started, must agree with the values that you set for the CRM in the WebLogic Administration Console for the samples CRM. The name of the CRM that is preconfigured for running all of the samples is CRM1. Use this name when the CRM is started to run any of the samples.

The way you start the CRM depends on whether the CRM will be started under a Unix or MVS system. On Unix, start the CRM using a shell script. On MVS, start the CRM using JCL.

## Procedure: How to Start the CRM on z/OS Unix

On z/OS Unix, you may use a script to start the CRM. Scripts are installed with the iWay JAM product in the os390.tar file which is packaged with the iwjamcrmmf.zip archive in the <JAM_INSTALL_DIR>/etc/setup directory. The script, crm.env, appends the necessary values to your environment variables. The script, startcrm.sh, starts the CRM. To use these scripts, complete the following steps:

1. Use FTP to send the following two scripts to the directory from which the CRM will run:

   ```
   crm.env
   ```

   ```
   startcrm.sh
   ```

2. Edit crm.env. Supply the correct values for the APPDIR and CRMDIR variables. APPDIR is the directory from which the CRM will run. CRMDIR is the CRM installation directory.

3. Edit startcrm.sh. To use a different port than the default port, 7101, change the port number. However, if you change the port number, make sure to change it in the corresponding field in the WebLogic Administration Console CRM1 pane. You do not need to change the address because the script will run on the machine where the CRM is installed.

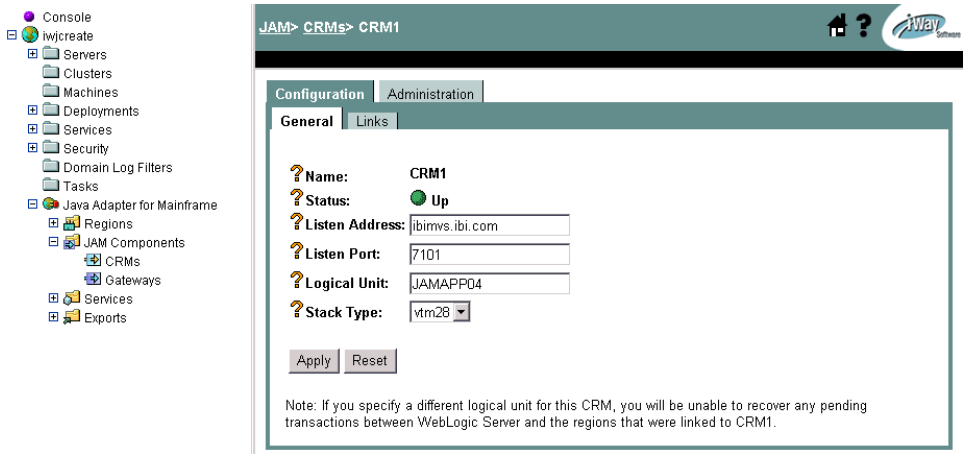
   **Note:** iWay recommends that you do not change the CRM name from CRM1. This name for the CRM is preconfigured for all of the samples.

4. Execute the startcrm.sh script:

   ```
   . ./startcrm.sh
   ```

Compare the following screenshot with the script beneath it. Notice how the parameters in the script correspond to the fields in the WebLogic Administration Console. The script illustrates the values for `startcrm.sh` script parameters for running the samples.

**Note:** The port number is 7101. You can change the port number; however, if the port number is changed make sure to change it in the corresponding field in the Gateway configuration CRM1 pane of the WebLogic Administration Console.




Use the following command to run the CRM:

```
$CRMDIR/bin/CRM //127.0.0.1:7101 CRM1 < /dev/null > std.out 2>std.err &
```

## Procedure: How to Start the CRM on z/OS MVS

On z/OS MVS, start the CRM by submitting the CRMSTART JCL that is installed with the CRM. The CRMSTART JCL must be modified for your environment. For information about modifying the CRMSTART JCL, see the *iWay Java Adapter for Mainframe Configuration and Administration Guide*.

As you modify the CRMSTART JCL, make sure that you note the following parameters in the value of the STARTCMD parameter in the JCL. These parameters correspond to fields in the WebLogic Administration Console. These values must be the same in the JCL and in the WebLogic Administration Console.

- The machine address where the CRM will run
- The port number on which the CRM will listen
- The name by which the Gateway will refer to the CRM

Notice how the parameters in the JCL correspond to the fields in the WebLogic Administration Console. The JCL illustrates the values for STARTCMD parameters for running the samples.

- The machine where the CRM will run is myhost in this sample. You must replace myhost with the hostname or IP address of your mainframe to allow IP-based communication from the Windows or Unix machine where WebLogic Server is running. You may verify this parameter with the ping command on Windows or Unix.
- The port number is 7101. You can change the port number; however, if you change the port number, make sure to change it in the corresponding field in the Gateway configuration CRM1 pane of the WebLogic Administration Console.

**Note:** iWay recommends that you do not change the CRM name from CRM1, because this name for the CRM is preconfigured for all of the samples.

The following is the STARTCMD parameter in the CRMSTART JCL:

```
//  SET STARTCMD='"//myhost:7101" CRM1'
```

## Procedure: How to Update the iWay JAM Configuration File

On the machine where the Gateway is located, update the iWay JAM configuration file from the command prompt by completing the following steps:

1. Locate the jamconfig_IMS.xml file in the following directory:

   ```
   <JAM_INSTALL_DIR>\etc\samples\iwjam\domains\verify
   ```

2. Copy jamconfig_IMS.xml to jamconfig.xml.

## Syntax: How to Start the Verify Domain

From the command prompt, execute the following command from the same directory to start the verify domain:

- For Microsoft Windows:

  ```
  startVerifyServer.cmd
  ```

- For Unix:

  ```
  . ./startVerifyServer.sh
  ```

## Procedure: How to Configure the iWay JAM Gateway

Most configuration tasks were preconfigured or were completed during the installation process by the installer program. For additional information about configuring iWay JAM, see the *iWay Java Adapter for Mainframe Configuration and Administration Guide*. Make the following configuration changes for the installation verification sample for IMS to run on your system. These changes can be made in the WebLogic Administration Console in the following way.

1. From your browser, open the WebLogic Administration Console using the following address:

`http://hostname:7001/console`

where:

*hostname*

Is the address of the machine where WebLogic Server is running.

7001

Is the port for WebLogic Server that has been configured for the verify domain.

**2.** When prompted, supply the following user and password information:

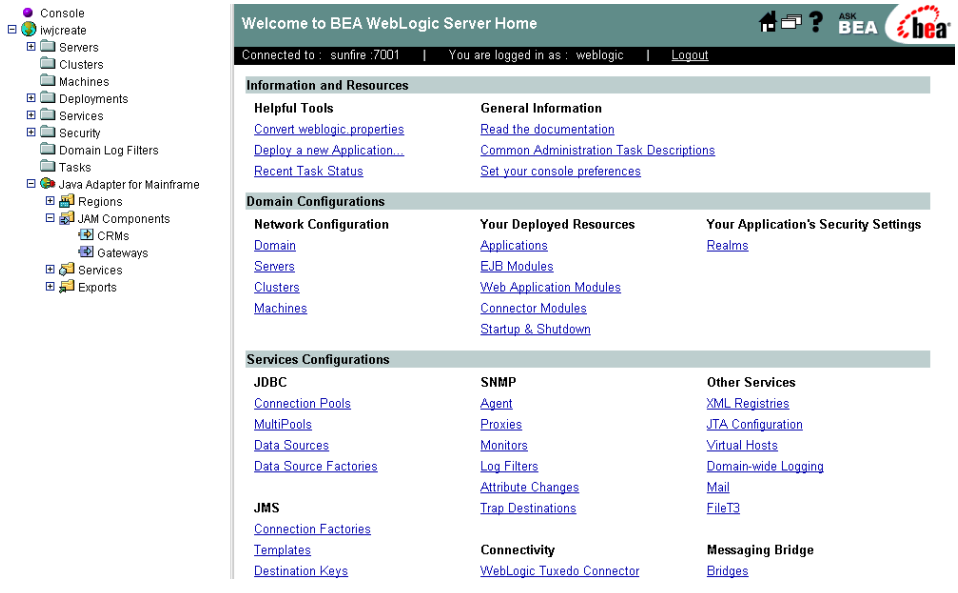
*user: system*

This user name cannot be changed.

*password: security*

To change the password, see the BEA WebLogic Server documentation.

The WebLogic Administration Console apears.




**3.** To configure the CRM to the iWay JAM Gateway, complete the following steps:

**a.** In the left pane, click *Java Adapter for Mainframe*, *JAM Components*, and then *CRMs*.

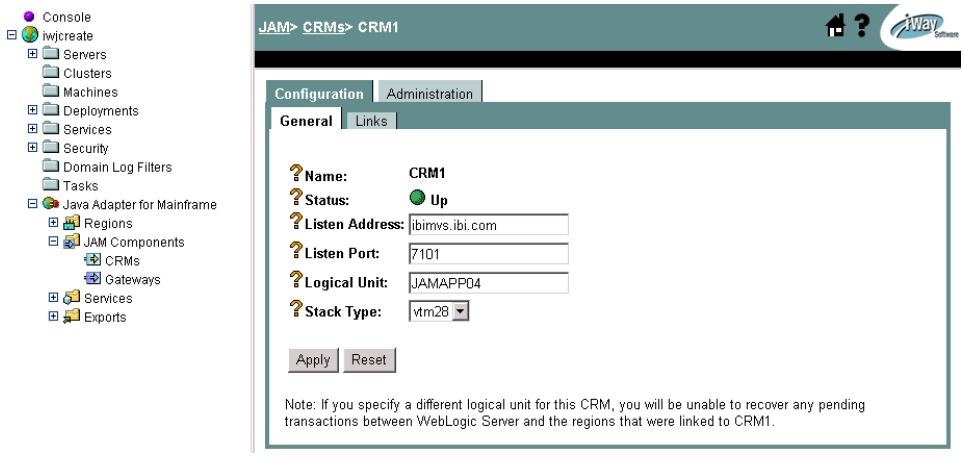
**b.** In the right pane, click *CRM1*.

**c.** On the General tab, set the following fields to correspond with your system.

| Field | Field Description |
|---|---|
| Listen Address | The address of the machine where the CRM is installed and running. This address must match the address set in the CRM startup JCL or script. |
| Listen Port | The port for the CRM. This entry must match the port set in the CRM startup JCL or script. |
| Logical Unit | The name of the Logical Unit defined for the CRM. |
| Stack Type | The stack type. |

**d.** Click *Apply*.

When the CRM is active, Status turns from red to green.




**4.** To configure the IMS region:

**a.** Click *Java Adapter for Mainframe*, *Regions*, and then *IMS Regions* in the left pane.

**b.** In the right pane, click *IMS1*.

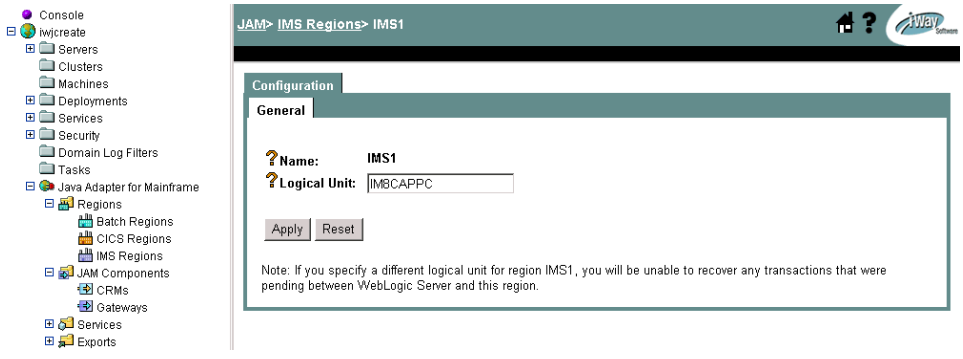
**c.** Enter the Logical Unit name that supplies your IMS control region with APPC communication.

You will find this name with the DISPLAY APPC operator command in IMS. Do not enter the Logical Unit name for APPLID of the IMS control region.

This APPLID does not support APPC communication. If your IMS control region does not currently support APPC communication, you will need to set up this communication in APPC/MVS. Then activate the communication within IMS using the START APPC Operator command.

**d.** Click *Apply* to set the Logical Unit.

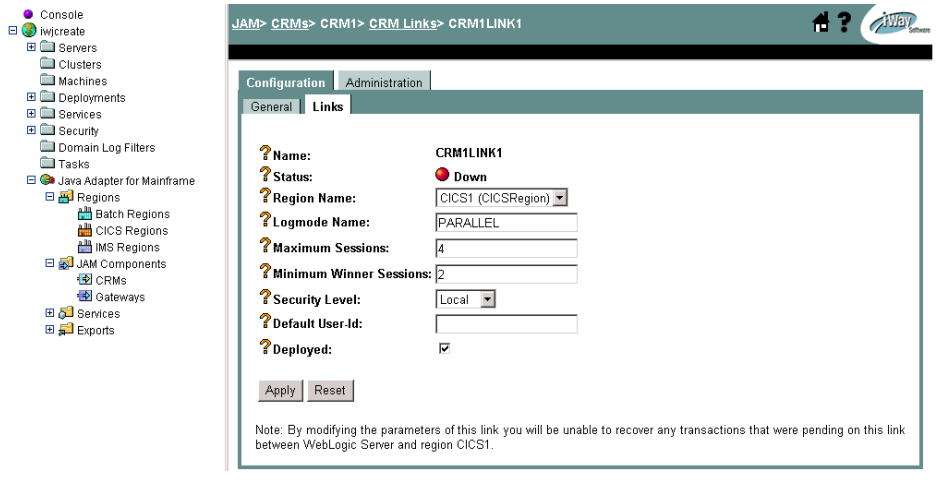
**Note:** This Logical Unit is not the same as the Logical Unit for the CRM in (3a).




**e.** At the top of the right pane, click *IMS Regions*, and then *CRM1to IMS*.

**f.** In the new window, click *CRM1LINK2*

**g.** On the Links tab, check *Deployed* and click *Apply*.

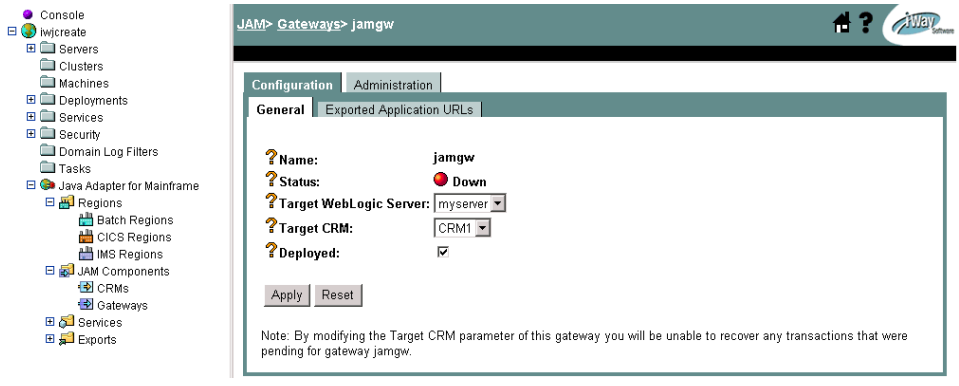



**h.** In the left pane, click *Gateways*.

**i.** Click *jamgw* in the right pane.

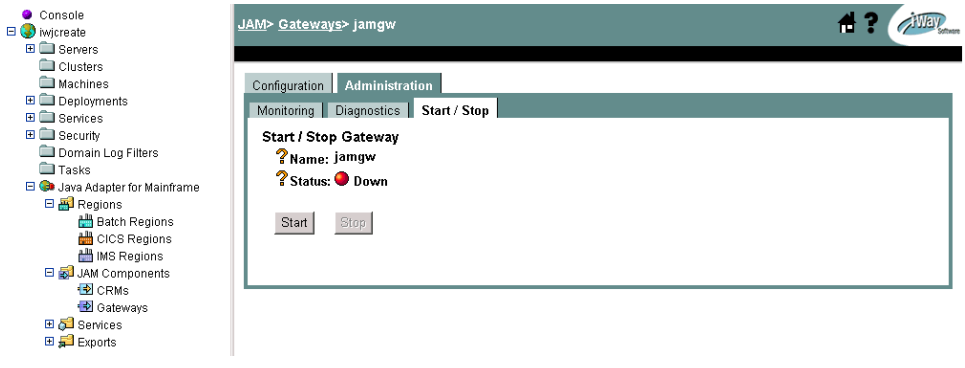
**j.** On the General tab, check *Deployed*.

**k.** Click *Apply*.




**5.** To start the Gateway, select the *Administration* tab, and then the *Start/Stop* tab.

**6.** Click *Start* to start the Gateway.




If the Gateway is running, Status changes to green in the WebLogic Administration Console and the following message appears in the WebLogic Server log:

```
"JAM Gateway ready for use. Current link status: up(1)."
```

## Procedure: How to Enable the Service

1. To enable the APPC service, click *Services*, and then *APPC Services* in the left pane.
2. In the right pane, click *doIVTNO*.
3. On the General tab, check *Enabled* and click *Apply*.


## Procedure: How to Set the Environment

On the machine where the Gateway is installed, set the environment by completing the following step:

1. From a command prompt, change to the <JAM_INSTALL_DIR>\etc\samples\iwjam\domains\verify directory and execute the following command to set the environment:

   For Microsoft Windows:

   ```
   setVerifyEnv.cmd
   ```

   For Unix:

   ```
   . ./setVerifyEnv.sh
   ```

   The following message will display:

   ```
   "Your environment has been set."
   ```

## Procedure: How to Generate and Build Source (Optional)

The iWay JAM samples provide generated source. Compiled .class files are also provided. If you want to see how the source is generated and the classes are built, change to the <JAM_INSTALL_DIR>\tools\egen\samples\verify\gateway\outbound directory and complete the following steps.

**Caution:** Using the following options will overwrite files that are installed with the iWay JAM samples.

1. Run the build.cmd (sh) script to build the client classes. The build script puts the built .class files in the <JAM_INSTALL_DIR>\etc\samples\iwjam\domains\verify\clientclasses\verify\gateway\outbound directory.
2. Run egencobol to use the eGen Application Code Generator on:
   - chardata.egen to generate Chardata.java
   - baseClient.egen to generate BaseClient.java.

   This option will generate the source. To compile the source, use the previous option to run the build.cmd (sh)script.

   For information about running the eGen Application Code Generator, see the *iWay Java Adapter for Mainframe Programming Guide*.

## Procedure: How to Complete Mainframe Tasks

On the machine with the IMS region:

1. Create a Partitioned Data Set (PDS) to store the source and JCL for the installation verification sample.
2. From the machine where the gateway is installed, use FTP to send the following files from the <JAM_INSTALL_DIR>\tools\egen\samples\verify\IMS\outbound\source directory to the PDS that you created:

   ```
   CHARDATA

   COMPTOUP

   JAMDEFI

   TOUPIMS
   ```

3. In the COMPTOUP JCL, make the following changes:
   a. Change the JOB statement.
   b. Change YOURHLQ.SOURCE to the PDS you created.
   c. Change YOUR.PGMLIB to a PGMLIB for your IMS region.
   d. Change YOUR.PROCLIB to the location of CBLTDLI.
   e. Change YOUR.RESLIB to the proper value.

f. Change RESLIB to SDFSRESL if you are using a newer IMS version. Refer to CBLTDLI in your PGMLIB to determine which library name your version uses. Make sure, if your IMS version requires this change, that you make the change to both the DD name and the library name.

4. Submit the COMPTOUP JCL. Make sure that all the condition codes are zero.

5. Define the program TOUPIMS to the IMS region. JAMDEFI contains sample IMS stage 1 and PSBGEN input. See your IMS systems programmer for assistance.

### Running the Sample

To run the installation verification sample for IMS, type the following command in the window used in step 6:

```
java verify.gateway.outbound.Client hello
```

This command will convert the string 'hello' to uppercase: HELLO.

If the client is being run on a different machine than the Gateway or if the WebLogic Server instance is listening on a port other than 7001, you may enter a URL as a second command line argument. For example:

```
java verify.gateway.outbound.Client hello "t3://hostname:port"
```

where:

*hostname*

Is the address of the machine where WebLogic Server is running.

*port*

Is the port for WebLogic Server.

If you have successfully run the installation verification sample for IMS, your installation is complete and verified.

## Using the Installation Verification Sample for CICS

After completing the tasks in *Before You Use the Samples* on page 4-4, you are ready to configure and run the sample.

### How the Sample Works

The program TOUPCICS is a simple COBOL CICS server program that is linked to and passed a COMMAREA. The characters in the COMMAREA are converted to uppercase. The structure of the data in the COMMAREA is given in the copybook CHARDATA. No special considerations are required in this program as a result of being used in an application with a Java client making requests through iWay JAM.

### Understanding the Sample Configuration

For this simple sample, no special configuration is required. The Java client calls the service TOUPPER.

- Gateway

  The DPL service TOUPPER is mapped to the name of the CICS program TOUPCICS.

- On the mainframe

  The server program TOUPCICS is defined to the CICS region, in this case using RDO, in the usual way any program is defined to a CICS region.

## Understanding the Sample Programming

The programming for this sample is described in the following sections.

### WebLogic Application

Three classes compose the WebLogic side of this sample application:

- Chardata
- BaseClient
- Client

Chardata is a DataView class that is generated by the eGen Application Code Generator. The data member in the Chardata class corresponds to the data field in the CHARDATA copybook. The Chardata class is responsible for all data translation between the mainframe format of the data and the Java format of the data.

The BaseClient class that is generated by the eGen Application Code Generator is an extension of the EgenClient class. The BaseClient is the class that implements the actual calls to the TOUPPER mainframe service in its toupper method.The toupper method is a wrapper for the callService method of the EgenClient class with the TOUPPER service as a parameter.

The Client class is the actual user interface. The Client class has a BaseClient member. The Client class receives string input as a command line argument. You may also enter a URL if the iWay JAM Gateway is running on a different machine or the corresponding instance of WebLogic Server is listening on a different port than 7001. The URL is set in the BaseClient member. In the Client class a Chardata DataView is initialized with the input data. The toupper method of the BaseClient member is called with this DataView as a parameter. The converted string value encapsulated in the returned DataView appears.

## CICS Program

The program TOUPCICS is a simple COBOL CICS server program that is linked to and passed a COMMAREA. The characters in the COMMAREA are upper-cased. The structure of the data in the COMMAREA is given in the copybook CHARDATA. No special considerations are required in this program as a result of being used in an application with a Java client making requests through iWay JAM.

## Sample Files

The files for the WebLogic side of the sample are installed in the following directory:

`<JAM_INSTALL_DIR>\tools\egen\samples\verify\gateway\outbound`

The following table lists the sample files and their purpose:

| File Name | File Purpose |
|---|---|
| chardata.cpy | COBOL copybook that defines the structure of the string mainframe data. |
| chardata.egen | eGen script that generates the `Chardata.java` DataView class. |
| Chardata.java | DataView class that corresponds to the `chardata.cpy` COBOL copybook. |
| baseClient.egen | eGen script that generates the `Chardata.ja`va DataView class and the `BaseClient.java EgenClient` class. |
| BaseClient.java | Java class that extends `EgenClient` class that calls the `TOUPPER` service. |
| Client.java | The user interface client class that receives the input string from the user, and displays the result of the `TOUPPER` service to the user. It invokes the `TOUPPER` service by calling the `callService` method of its `BaseClient` member. |
| build.cmd | Script that builds the `Chardata`, `BaseClient`, and `Client` classes. The built class files are in the following directory:<br>`<JAM_INSTALL_DIR>\etc\samples\iwjam\domains\verify\clientclasses\verify\gateway\outbound` |

The files for the CICS side of the sample are installed in the following directory:

`<JAM_INSTALL_DIR>\tools\egen\samples\verify\CICS\outbound\source`

The following table lists the sample files and their purpose:

| File Name | File Purpose |
|---|---|
| CHARDATA | COBOL copybook that defines the structure of the string input and output data. |
| CMPPROC | Procedure used to compile and link the CICS programs. |
| COMPILE | JCL that executes the `CMPROC` for the program `TOUPCICS`. |
| CSDU | RDO cards to define `TOUPCICS` to the CICS region. |
| CSDUPD | JCL that executes `CSDU`. |
| TOUPCICS | CICS server program that receives a string in mixed case and returns the string in uppercase. |

## Configuring the Sample for CICS

To configure the installation verification sample for CICS, perform the following steps.

### Step 1: Start the CRM

Before starting the iWay JAM Gateway, start the CRM. The CRM must be configured with certain parameter values at startup. These parameter values include:

- The address of the machine on which the CRM is running
- The port on which the CRM listens
- The name the Gateway will use to refer to the CRM

For running the samples, you must set the machine address and port. The values that you set for the machine address and port when the CRM is started, must agree with the values that you set for the CRM in the WebLogic Administration Console for the samples CRM. The name of the CRM that is preconfigured for running all of the samples is CRM1. Use this name when the CRM is started to run any of the samples.

The way you start the CRM depends on whether the CRM will be started under a Unix or MVS system. On Unix, start the CRM using a shell script. On MVS, start the CRM using JCL.

## Procedure: How to Start the CRM on z/OS Unix

On z/OS Unix, you may use a script to start the CRM. Scripts are installed with the iWay JAM product in the os390.tar file which is packaged with the iwjamcrmmf.zip archive in the <JAM_INSTALL_DIR>/etc/setup directory. The script, crm.env, appends the necessary values to your environment variables. The script, startcrm.sh, starts the CRM. To use these scripts, complete the following steps.

1. Use FTP to send the following two scripts to the directory from which the CRM will run:

   ```
   crm.env
   ```

   ```
   startcrm.sh
   ```

2. Edit crm.env. Supply the correct values for the APPDIR and CRMDIR variables. APPDIR is the directory from which the CRM will run. CRMDIR is the CRM installation directory.

3. Edit startcrm.sh. To use a different port than the default port, 7101, change the port number. However, if you change the port number, make sure to change it in the corresponding field in the WebLogic Administration Console CRM1 pane. You do not need to change the address because the script will run on the machine where the CRM is installed.

   **Note:** iWay recommends that you do not change the CRM name from CRM1. This name for the CRM is preconfigured for all of the samples.

4. Execute the startcrm.sh script:

   ```
   . ./startcrm.sh
   ```

Notice how the parameters in the script correspond to the fields in the WebLogic Administration Console. The script illustrates the values for `startcrm.sh` script parameters for running the samples.

**Note:** The port number is 7101. You can change the port number; however, if the port number is changed make sure to change it in the corresponding field in the Gateway configuration CRM1 pane of the WebLogic Administration Console.

Use the following command to run the CRM:

```
$CRMDIR/bin/CRM //127.0.0.1:7101 CRM1 < /dev/null > std.out 2>std.err &
```

## Procedure: How to Start the CRM on z/OS MVS

On z/OS MVS, start the CRM by submitting the CRMSTART JCL that is installed with the CRM. The CRMSTART JCL must be modified for your environment. For information about modifying the CRMSTART JCL, see the *iWay Java Adapter for Mainframe Configuration and Administration Guide*.

As you modify the CRMSTART JCL, make sure that you note the following parameters in the value of the STARTCMD parameter in the JCL. These parameters correspond to fields in the WebLogic Administration Console. These values must be the same in the JCL and in the WebLogic Administration Console.

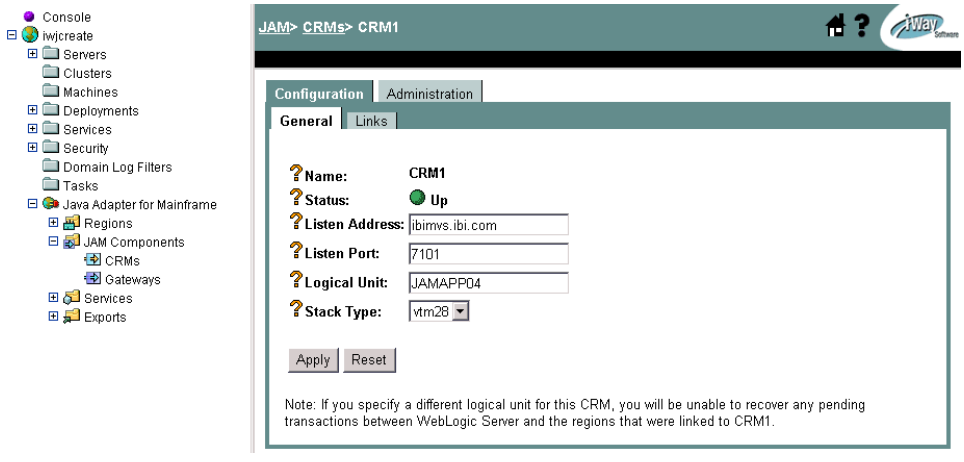
- The machine address where the CRM will run
- The port number on which the CRM will listen
- The name by which the Gateway will refer to the CRM

Notice how the parameters in the JCL correspond to the fields in the WebLogic Administration Console. The JCL illustrates the values for STARTCMD parameters for running the samples.

- The machine where the CRM will run is myhost in this sample. You must replace myhost with the hostname or IP address of your mainframe to allow IP-based communication from the Windows or Unix machine where WebLogic Server is running. You may verify this parameter with the ping command on Windows or Unix.
- The port number is 7101. You can change the port number; however, if you change the port number, make sure to change it in the corresponding field in the Gateway configuration CRM1 pane of the WebLogic Administration Console.

**Note:** iWay recommends that you do not change the CRM name from CRM1, because this name for the CRM is preconfigured for all of the samples.

The following screenshot lists fields for the CRM.




The following example shows the STARTCMD parameter in the CRMSTART JCL.

```
//  SET STARTCMD=''"//myhost:7101" CRM1'
```

## Procedure: How to Update the iWay JAM Configuration File

On the machine where the Gateway is located, update the iWay JAM configuration file from the command prompt by completing the following steps:

1. Locate the jamconfig_CICS.xml file in the following directory:

   ```
   <JAM_INSTALL_DIR>\etc\samples\iwjam\domains\verify
   ```

2. Copy jamconfig_CICS.xml to jamconfig.xml.

## Syntax: How to Start the verify Domain

From the command prompt, execute the following command from the same directory to start the verify domain:

- For Microsoft Windows:

  ```
  startVerifyServer.cmd
  ```

- For Unix:

  ```
  . ./startVerifyServer.sh
  ```

## Procedure: How to Configure the iWay JAM Gateway

Most configuration tasks were preconfigured or were completed during the installation process by the installer program. For additional information about configuring iWay JAM, see the *iWay Java Adapter for Mainframe Configuration and Administration Guide*. Make the following configuration changes for the installation verification sample for CICS to run on your system. These changes can be made in the WebLogic Administration Console in the following way.

1. From your browser, open the WebLogic Administration Console using the following address:

   `http://hostname:7001/console`

   where:

   *hostname*

   Is the address of the machine where WebLogic Server is running.

   7001

   Is the port for WebLogic Server that has been configured for the verify domain.

2. When prompted, supply the following user and password information:

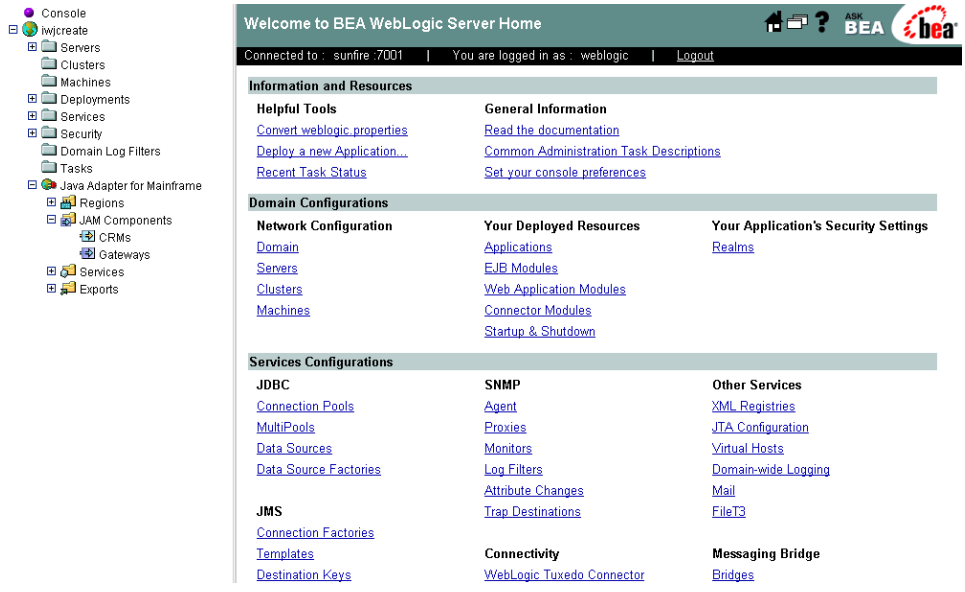
   *user: system*

   This user name cannot be changed.

   *password: security*

   To change the password, see the BEA WebLogic Server documentation.

The WebLogic Administration Console appears.




**3.** To configure the CRM to the iWay JAM Gateway, complete the following steps:

**a.** In the left pane, click *Java Adapter for Mainframe*, *JAM Components*, and then *CRMs*.

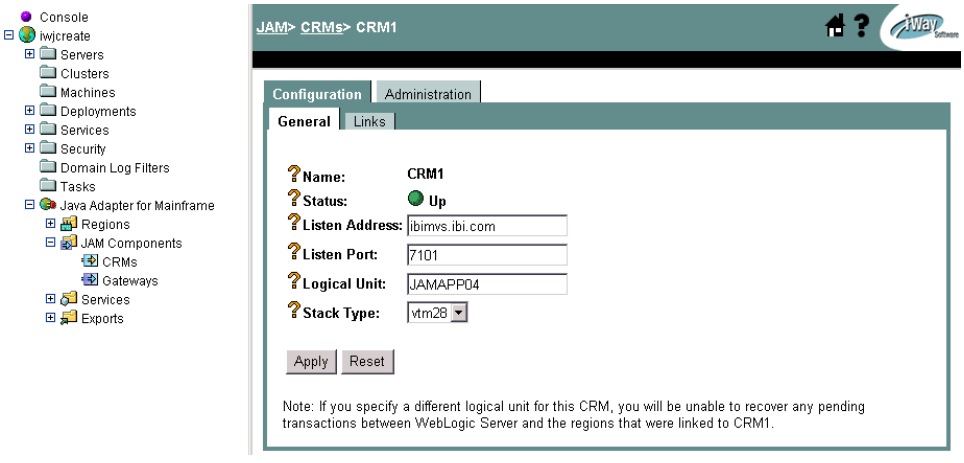
**b.** In the right pane, click *CRM1*.

**c.** On the *General* tab, set the following fields to correspond with your system.

| Field | Field Description |
|---|---|
| Listen Address | The address of the machine where the CRM is installed and running. This address must match the address set in the CRM startup JCL or script. |
| Listen Port | The port for the CRM. This entry must match the port set in the CRM startup JCL or script. |
| Logical Unit | The name of the Logical Unit defined for the CRM. |
| Stack Type | The stack type. |

**d.** Click *Apply*.

When the CRM is active, Status turns from red to green.



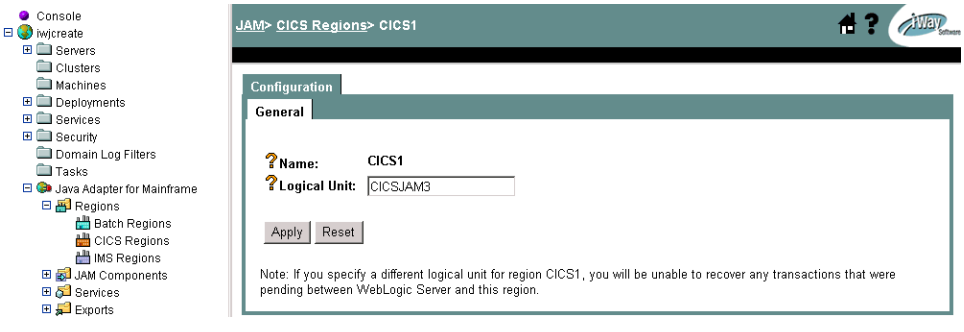

**4.** To configure the CICS region:

**a.** Click *Java Adapter for Mainframe*, *Regions*, and then *CICS Regions* in the left pane.

**b.** In the right pane, click on *CICS1* and enter the name of the *Logical Unit*.

**Note:** This name is the ACBNAME in the VTAM Logical Unit definition or the APPLID of the region.

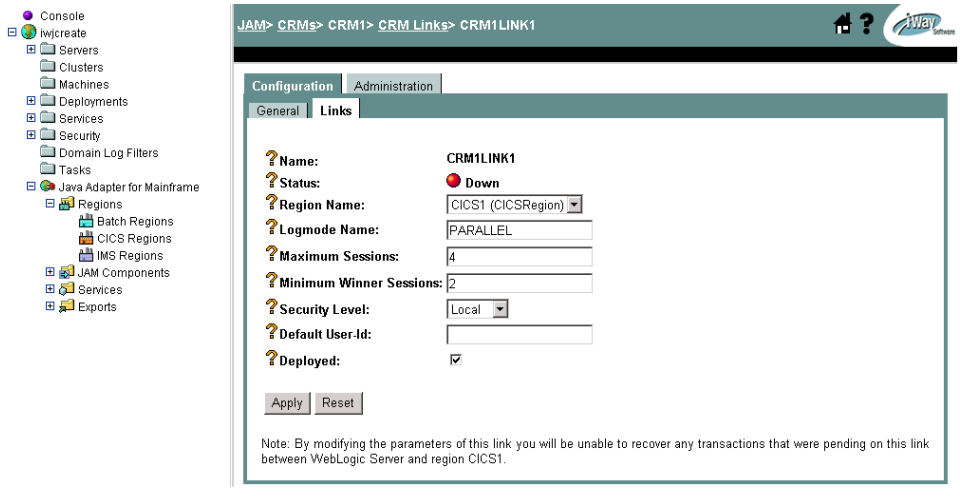
**c.** Click *Apply* to set the Logical Unit.




**d.** At the top of the pane, click *CICS Regions*, and then *CRM1LINK1*.

**e.** In the new window, click *CRM1LINK1*.

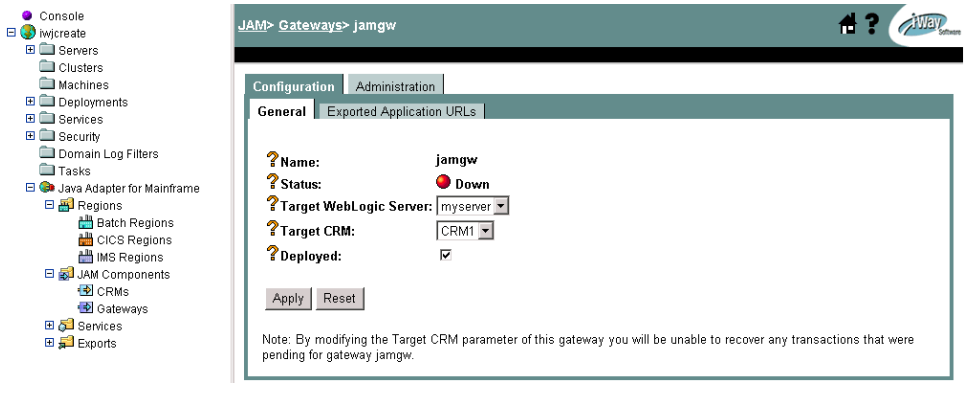
**f.** On the Links tab, check *Deployed* and click *Apply*.




**g.** In the left pane, click *Gateways*.

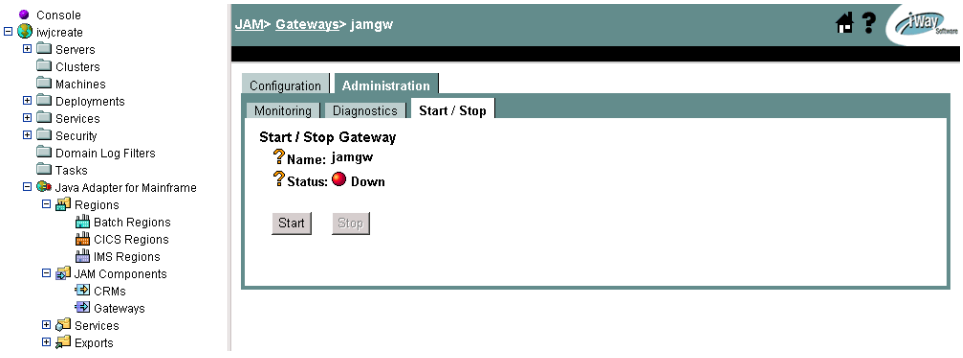
**h.** Click *jamgw* in the right pane.

**i.** On the General tab, check *Deployed* and click *Apply*.




**j.** To start the iWay JAM Gateway, select the *Administration* tab, and then the *Start/Stop* tab.

**k.** Click *Start* to start the Gateway.



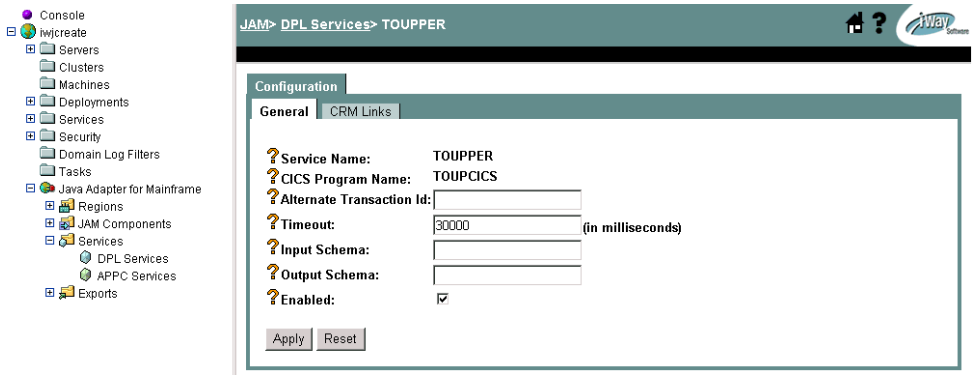

If the Gateway is running, Status changes to green in the WebLogic Administration Console and the following message appears in the WebLogic Server log:

```
"JAM Gateway ready for use. Current link status: up(1)."
```

## Procedure: How to Enable the Service

To enable the DPL service:

1. In the left pane, click *Java Adapter for Mainframe*, *Services*, and then *DPL Services*.
2. In the right pane, click *TOUPPER* under Service Name.
3. Check *Enabled* and click *Apply*.




## Syntax: How to Set the Environment

On the machine where the Gateway is installed, set the environment by completing the following step:

From a command prompt, change to the <JAM_INSTALL_DIR>\etc\samples\iwjam\domains\verify and execute the following command to set the environment:

- For Microsoft Windows:

  ```
  setVerifyEnv.cmd
  ```

- For Unix:

  ```
  . ./setVerifyEnv.sh
  ```

The following message will display:

```
"Your environment has been set."
```

## Procedure: How to Generate and Build Source (Optional)

The iWay JAM samples provide generated source. The samples also provide classes to run the samples. If you want to see how the source is generated and the classes are built, change to the <JAM_INSTALL_DIR>\tools\egen\samples\verify\gateway\outbound directory and complete the following steps.

**Caution:** Using the following options will overwrite files that are installed with the iWay JAM samples.

1. Run the build.cmd (sh) script to build the client classes.

   The build script puts the built.class files in the <JAM_INSTALL_DIR>\etc\samples\iwjam\domains\verify\clientclasses\verify\gateway\outbound directory.

2. Run egencobol to use the eGen Application Code Generator on:

   - chardata.egen to generate Chardata.java
   - baseClient.egen to generate BaseClient.java.

   This option will generate the source. To compile the source, use the previous option to run the build.cmd (sh)script.

   For information about running the eGen Application Code Generator, see the iWay Java Adapter for Mainframe *Programming Guide*.

## Procedure: How to Complete Mainframe Tasks

On the machine with the CICS region:

1. Create a Partitioned Data Set (PDS) to store the source and JCL for the installation verification sample for CICS.

2. From the machine where the Gateway was installed, use FTP to send the following files from the <JAM_INSTALL_DIR>\tools\egen\samples\verify\CICS\outbound\source directory to the PDS that you created:

   ```
   CHARDATA

   CMPPROC

   COMPILE

   CSDU

   CSDUPD

   TOUPCICS
   ```

3. In the procedure, CMPPROC, you do not need to set LNKLIB, PDSSRC, and PROC. The values are supplied by the COMPILE JCL that will exec COMPROC. Set INDEX, COMPHLQ, COMPHL2. You may need to change OUTC and the unit of WORK.

4. In the COMPILE JCL, make the following changes:

   **a.** Change the JOB statement.

   **b.** Change the LNKLIB to a load lib for your CICS region.

   **c.** Change the YOURHLQ.JCLLIB.ORDER to the PDS name containing CMPPROC.

5. Submit the COMPILE JCL. Make sure that the condition code is zero.

6. In the RDO script CSDU, make the following changes:

   **a.** Change the name of the LIST of a valid list name for your CICS region.

   **b.** You can also change the GROUP name, but make sure it is changed everywhere.

7. In the CSDUPD JCL, make the following changes:

   **a.** Change the STEPLIB, DFHCSD, and SYSIN DSNs.

   **b.** You may need to change the unit of WORK.

8. Submit the CSDUPD JCL.

   Note that you may get a warning on the Delete step in the CSDU, because the TOUPCICS program probably was not defined before. The condition code should not be above 4.

9. Log on to your CICS region.

10. To install the iWay JAM installation verification GROUP:

    ```
    CEDA INSTALL GROUP(JAMVRFY)
    ```

11. To verify the CICS TOUPCICS program:

```
CEMT INQUIRE PROG(TOUPCICS)
```

## Running the Sample

To run the installation verification sample for CICS, type the following in the command prompt in the window you used to set the environment:

```
java verify.gateway.outbound.Client hello
```

This command will change the string, 'hello', to uppercase: HELLO.

If the client is being run on a different machine than the Gateway or if the WebLogic Server instance is listening on a port other than 7001, you may enter a URL as a second command line argument. For example:

```
java verify.gateway.outbound.Client hello "t3://hostname:port"
```

where:

*hostname*

Is the address of the machine where WebLogic Server is running.

*port*

Is the port for WebLogic Server.

If you have successfully run the installation verification sample for CICS, your installation is complete and verified.

CHAPTER 5

# Uninstalling iWay Java Adapter for Mainframe

**Topics:**

- Uninstalling iWay JAM on Windows
- Uninstalling iWay JAM on UNIX

The following sections describe the process for uninstalling iWay Java Adapter for Mainframe (iWay JAM) on Windows and UNIX platforms.

# Uninstalling iWay JAM on Windows

The following section describes how to uninstall the iWay JAM product in graphical mode on the Windows platform.

## Procedure: How to Uninstall iWay JAM on Windows

To uninstall iWay JAM on Microsoft Windows:

1. Copy any files you wish to save out of the iWay JAM directory structure.
2. Stop and undeploy each iWay JAM gateway component on every managed server in your WebLogic domain.
3. Undeploy the iWay JAM management component and remove the Startup Class from your WebLogic Server domain.
4. Navigate to the following directory:

   *drive*:\iWay51\etc\uninstall\iwjam

   where:

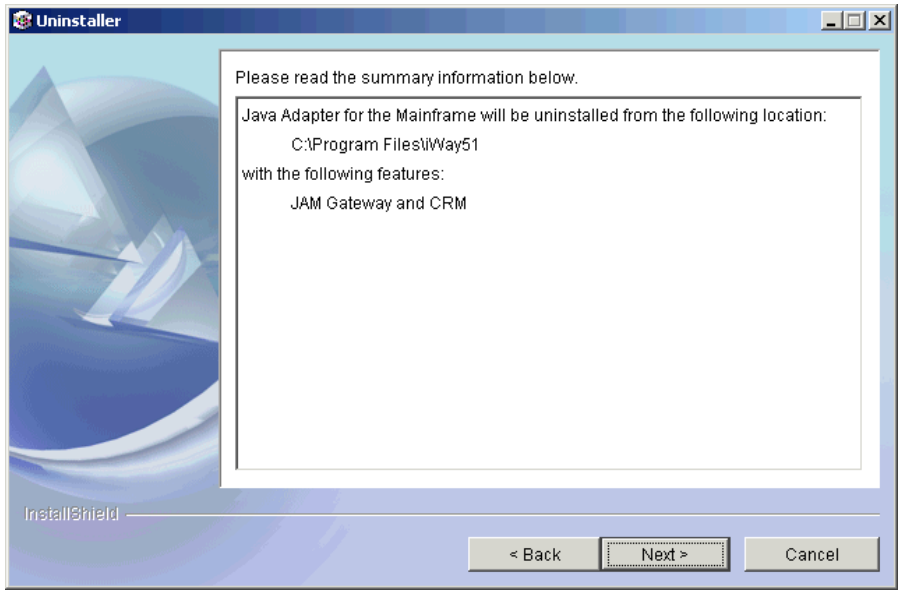
   *drive*

   Is the location where iWay JAM is installed.
5. Double-click the *uninstaller.exe* file.

   The InstallShield Uninstaller Welcome screen opens.

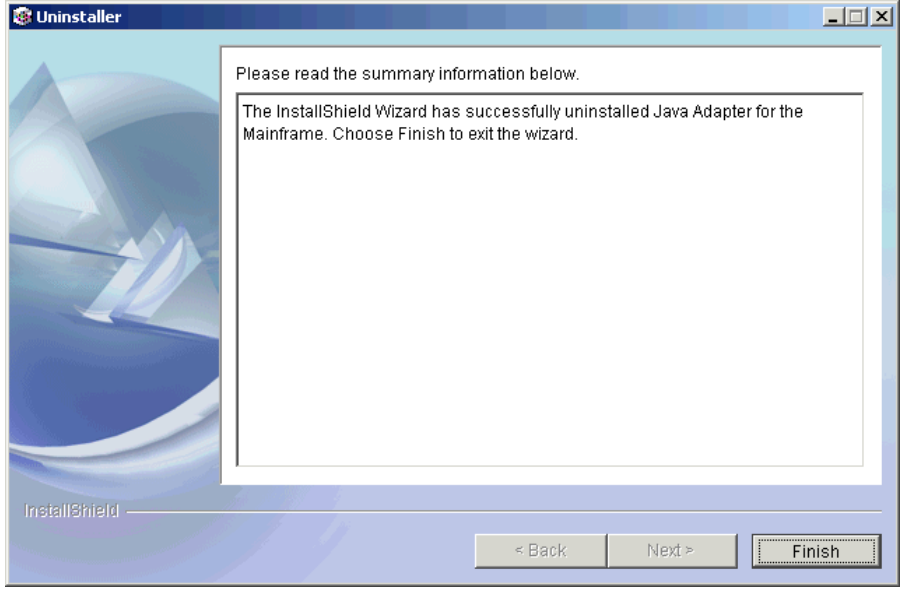
**6.** Click *Next*.

The Uninstaller Summary screen opens.




**7.** Click *Next* after you have reviewed the summary.

The Uninstaller Confirmation screen opens.



8. Click *Finish* to exit from the InstallShield Uninstaller Wizard.

   The uninstall process removes all effects of the installation, including:

   - Removing files
   - Resetting environment variables
   - Removing registry entries
   - Uninstalling the iWay JAM service on Microsoft Windows

# Uninstalling iWay JAM on UNIX

The following section describes how to uninstall the iWay JAM product in console mode on the UNIX platform.

## Procedure: How to Uninstall iWay JAM on UNIX

To uninstall iWay JAM on UNIX:

1. Copy any files you wish to save out of the iWay JAM directory structure.
2. Stop and undeploy each iWay JAM gateway component on every managed server in your WebLogic domain.
3. Undeploy the iWay JAM management component and remove the Startup Class from your WebLogic Server domain.
4. Navigate to the following directory:

   ```
   iWay51/etc/uninstall/iwjam
   ```

   a. To run the uninstall without any user interaction, type the following at the command prompt:

   ```
   ./uninstaller.bin -silent
   ```

   b. To run the uninstall utility, type the following at the command prompt:

   ```
   ./uninstaller.bin -console
   ```

   The Welcome prompt opens.

   ```
   -------------------------------------------------------------------------

   Welcome to the InstallShield Wizard for Java Adapter for the
   Mainframe

   The InstallShield Wizard will uninstall Java Adapter for the
   Mainframe from your computer.

   To continue, choose Next.

   Java Adapter for the Mainframe
   ```

```
iWay Software

http://www.iwaysoftware.com

Press 1 for Next, 3 to Cancel or 4 to Redisplay [1]
```

You are prompted with a confirmation of the location where the uninstall will remove your iWay JAM install components.

5. Verify the location on the location prompt.

```
Java Adapter for the Mainframe will be uninstalled from the following
location:

/u1/iwayqa/dcl/iWay51

with the following features:

JAM Gateway and CRM

Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1]
```

The uninstall utility will proceed with removing the components from your install directory.

When the uninstall completes, the following completion message is displayed:

```
The InstallShield Wizard has successfully uninstalled Java Adapter for
the

Mainframe. Choose Next to continue the wizard.

Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1]
```

6. Press *1* followed by *Enter* to continue.

A message reminding you to reapply your profile is displayed:

```
The wizard requires that you logout and log back in.

Press 3 to Finish or 4 to Redisplay [3]
```

7. Press *3* followed by *Enter* to complete the uninstallation.

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