



# Location Intelligence Component

Version 1.0  
for Business Objects™ XI 3.0

**INSTALLATION GUIDE**

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# Location Intelligence Component Overview

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## Overview

The Location Intelligence Component (LIC) for Business Objects provides an interface between the Business Objects InfoView and Dashboard interfaces and MapInfo MapXtreme Java.

Business Objects is Business Intelligence software that allows users to create and analyze business data using analytical tools like reports and charts, and to thus monitor business performance. The LIC enhances the Business Objects software by geographically rendering the reports data using interactive mapping pages. Users can manipulate these maps for additional data analysis using the tools provided.

This Installation Guide provides complete details on all software and hardware required to install the LIC with Business Objects, and installation instructions suitable for a variety of single-server implementations. For instructions on installing the LIC in a distributed environment, contact your Pitney Bowes MapInfo representative. Instructions for upgrading from a previous version of the LIC are also included in this guide.

A series of Location Intelligence Component guides have been provided for your use in the directory `/Docs` of the CD. Once you have successfully installed the LIC, you may want to customize your mapping capabilities. For information on configuring the LIC, see the *Location Intelligence Component Administration Guide*. Finally, distribute the *Location Intelligence Component User Guide* to all employees using the LIC with Business Objects.

Alternatively, employees can download the User Guide from the Pitney Bowes MapInfo website:

<http://www.mapinfo.com/for-developers/documentation/product-documentation>

The *Location Intelligence Component Release Notes v1.0 for Business Objects XI 3.0* are also available on this website.

## Pre-Deployment Assumptions

The instructions in this guide assume that you have already installed and implemented the following software on your system:

- Business Objects Enterprise XI Release 3, installed and configured
- InfoView (Java version) running on the machine where the LIC is to be installed
- An application server
- A Java Development Kit

Supported versions of the above software are listed in the section **Supported Systems and Servers on page 11**.

The installation script uses Ant to build directories and prepare the web application war files. All required software is included with the war file; instructions for running the script are included in this guide.

Finally, the LIC supports several different application servers (see the section **Supported Systems and Servers on page 11** for a list of supported servers).

## Typographical Conventions

This guide uses the following typographical conventions.

Text Formatting	Meaning
<angle brackets>	Angle brackets are used for text that acts as a placeholder for information you provide. For example, <string@string> represents an email address. You should replace string@string with the actual email address.
<i>Italics</i>	Italicized formatting is used for book titles (for example, <i>Location Intelligence Component User Guide</i> ).
Courier	Courier font is used for text that you type (for example, a directory path or a URL).
<b>Bold</b>	Bold formatting to indicate an instruction (for example, clicking a button, selecting an option or pressing a key). Bold is also used to differentiate a <b>directory</b> from a file, in directory structure illustrations.

## Terminology

The following table provides definitions for all abbreviations, acronyms, and definitions of common location intelligence terminology used in this guide.

Term	Definition
Business Intelligence	Applications and technologies that gather, analyze and monitor company operations data. Analyzing and monitoring this data provides a comprehensive understanding of all factors affecting a business, resulting in the ability to make better business decisions.
Location intelligence	The ability to analyze geographical data to make informed business decisions. Location intelligence tools may employ a variety of data sources, including geographic information systems (GIS), aerial maps, demographic information and, most importantly, the Business Objects database.
Location Intelligence Component (LIC)	A powerful plug-in component that draws geographic data from Business Objects reports and displays that data in the form of maps, pie charts and bar charts.



# Preinstallation Requirements

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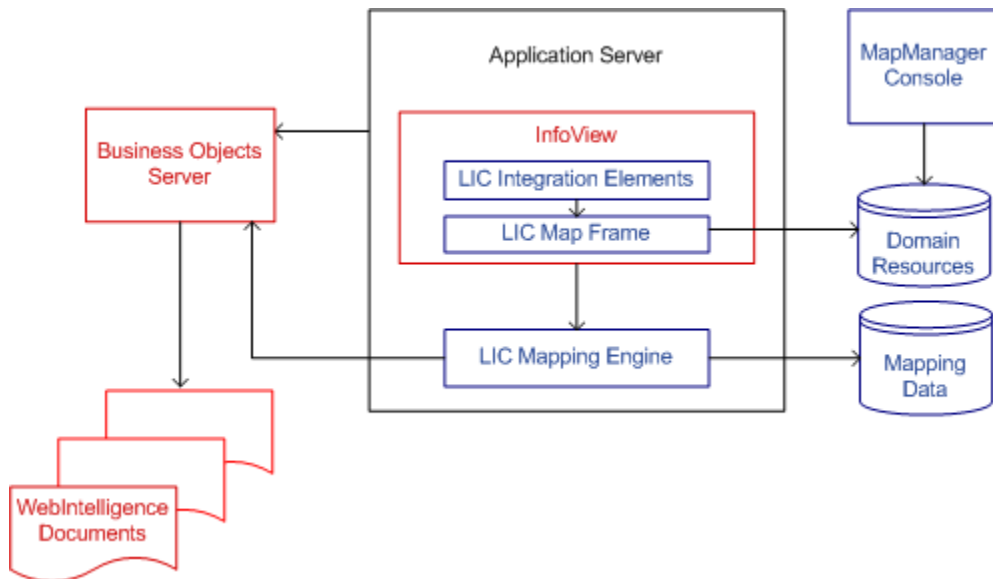
## LIC Architecture

The figure below illustrates a typical architecture for a single-server deployment of the Location Intelligence Component (LIC) when integrated with Business Objects.

All elements in red designate the Business Objects implementations. All elements in blue designate Pitney Bowes MapInfo implementations. The integration elements refer to all buttons and integrated processes available through the Business Objects interface.

During the installation process, there are two war files that are deployed on the application server:

- The AnalyticalReporting.war file deploys the integration elements for the interface (essentially it is the Business Objects AnalyticalReporting.war web application extended with the LIC Integration and Map Frame).
- The bimxtj481.war file creates the mapping engine, which includes MapXtreme with a custom data provider.



## System Requirements

The following are the minimum requirements to run the Location Intelligence Component (LIC) with Business Objects.

System Requirements		
Requirement	Version	Usage
An application server	Container or plug-in must support the 2.3 servlet API specification and the 1.1 JSP API specification	Supports servlets/JSPs, or uses a plug-in to support servlets/JSPs, or a stand-alone servlet container
A Java 2 platform-compatible virtual machine	1.5.0	
Video card (On Solaris, either a video card or X11 server)		Java 2D requires enhanced graphics capabilities
600 MB hard disk space		<ul style="list-style-type: none"> <li>• MapXtreme Java (~760 MB for installation)</li> <li>• Sample map data (400 MB)</li> <li>• MapXtreme</li> </ul>
1 GB RAM		<ul style="list-style-type: none"> <li>• MapXtreme and the LIC</li> </ul>

## Supported Systems and Servers

The LIC is supported for Business Objects XI 3.0.

The LIC is also supported for the following associated browsers:

- Internet Explorer v.6.0 SP2
- Internet Explorer v.7.0
- Firefox v.2.0

The following operating systems are supported for the LIC:

- Windows 2003 Enterprise Edition
- AIX 5.3
- Solaris 9
- Solaris 10
- Linux (Red Hat 4.0 Enterprise)

## Pre-Installation Requirements

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The following application servers are supported for the LIC:

- Tomcat 5.5
- WebLogic 9.2 MP1 (with JRockit 5.0)
- WebSphere 6.1.0.7

The following Java Developer Kits (JDKs) are supported for the LIC:

- Sun's 1.5.0
- IBM's 1.5.0
- JRockit 5.0

## Pre-Installation Requirements

The following software must be installed before proceeding with the installation of the LIC. It is strongly recommended that the LIC be installed with administrator privileges.

- Business Objects Enterprise XI Release 3, installed and configured
- An application server
- JDK 1.5.0 (shipped on the CD in the `java` directory), or the JDK appropriate for your particular application server
- A Java Virtual Machine (JVM), properly set up (see the section **JVM Setup** below for instructions)

### JVM Setup

The setup of a JVM depends on the application server you are using. However, the settings for memory, `JAVA_HOME`, and Performance Management are needed for all application servers.

#### Tomcat

In Tomcat, these settings are located in the `catalina.bat/catalina.sh` file.

- The initial and max heap sizes:

```
set CATALINA_OPTS=-Xms512m -Xmx1024m
```

- The location of the Java SDK:

```
set JAVA_HOME="C:\Program Files\Business Objects\javasdk"
```

- Add the following setting to `CATALINA_OPTS` or `JAVA_OPTS`:

```
-Dcom.mapinfo.max.in.items=500
```

#### Headless Unix Server

When installing on a headless Unix server, add the following to the JVM settings:

```
-Djava.awt.headless=true
```

However, not all JVMs will properly respect this setting, in which case you will see errors in the log file regarding `java.awt.headless` and will not be able to generate maps. In this case, you need to set up a connection to the Xserver. The details for setting this connection vary from platform to platform.

For example, you could use the following procedure:

1. Stop your application server.
2. Set up the connection to the Xserver:  

```
/usr/lpp/X11/bin/X :1 -vfb -force -x abx -x dbe -x GLX
```
3. Set the DISPLAY variable which must match display from previous step above (for example, `setenv DISPLAY=localhost:1`).
4. Start your application server.

### **WebLogic**

In WebLogic, the same settings outlined above for Tomcat are also added to the JVM arguments, either in the JAVA\_OPTS in `startWeblogic.cmd` or in the WebLogic console under JVM arguments

### **WebSphere**

In WebSphere, these settings are located in the Application Servers > <server name> > Process Definition > Java Virtual Machine dialog. The min/max heap size have their own input boxes on this dialog. Add the `-Dcom.mapinfo.max.in.items=500` setting to the WebSphere console under "Generic JVM Arguments."

Some additional setup is also required for WebSphere.

1. Shutdown the server if it is up.
2. Rename `<WebSphereHome>/lib/jdom.jar` to `jdom.jar.delete` so it will not be loaded when WebSphere starts up.
3. Rename `<WebSphereHome>/lib/jsf-api.jar` to `jsf-api.jar.delete`.
4. Rename `<WebSphereHome>/lib/ws-jsf.jar` to `ws-jsf.jar.delete`.
5. Restart the server.

## **Configurations**

The following configurations must be completed before you proceed with the installation:

- JAVA\_HOME must be set in the environment to point to the root directory where the JDK is installed.
- At least one report with a Geographic Dimension must be defined to validate the installation.

To host the LIC in a distributed environment, consult your Pitney Bowes MapInfo representative.



# Installing on a J2EE Environment

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## Upgrading From a Previous Version

If you are currently running a previous version of the Location Intelligence Component (LIC) on a J2EE environment, you may have customized your configuration files and named resources. If you have customized your files and resources, inter-related references have been set that you will want to preserve with the upgraded version. You can preserve your existing LIC configuration files and named resources by saving them and then merging them back into the new version.

**Note** If you have customized parts of the `bifaces-config.xml` file other than the `biTool` managed bean, contact your Pitney Bowes MapInfo representative for assistance merging your customizations into the new configuration file.

To upgrade to LIC version 1.0 for Business Objects XI 3.0:

1. Undeploy your existing `desktopmaps.war`, as well as any `bimxtj472.war` or `bimxtj481.war` files.
2. Rename your LIC installation directory, which contains all your existing configuration files and named resources, to a temporary name (for instance, if your directory is called by the default name `LIC`, rename it `LIC_OLD`). All files and filepaths are preserved in case you require a fallback.
3. Confirm that both `desktopmaps` and `bimxtj481` have undeployed cleanly.
4. Run the installation script as instructed in [Installing the LIC on a J2EE Environment on page 21](#), but do not configure your application server yet.

**Note** During the installation process, you must indicate to the installer that your configuration files and resources are to be stored in the same `<domain directory>` directory for this upgrade installation as it used for the original installation. If you customized this directory during the previous installation, you must customize this upgrade installation to the same directory. Otherwise, the references you are attempting to preserve will be lost.

5. Save all the files in the newly created LIC `<domain directory>/configs` directory to a second temporary directory (for instance, using our example above, create a second temporary directory for copies of the new files called `configs_NEW`).
6. Configure and restart your application server by deploying the war files, as instructed in [step 3](#) of the installation procedure.
7. Complete the installation instructions. Pay special attention to the sanity testing phase of the installation to confirm that your installation works with the default configuration.
8. Once you are satisfied that the installation was successful, stop the application server.

9. If you have customized any of your configuration files, merge the new configuration files with your existing configuration files following the recommended procedures below:

#### ***bifaces-config***

The bifaces-config file for LIC v1.0 for Business Objects XI 3.0 has a small number of changes; therefore, import these changes to the original, customized bifaces-config file you used for LIC v1.0 for Business Objects XIR2.

- a. Paste your original, customized bifaces-config file from the first temporary directory (`LIC_OLD/<domain_directory>/configs`) back into `/LIC/<domain_directory>/configs`, overwriting the newly installed bifaces-config file.
- b. Import the following changed properties for LIC v1.0 for Business Objects XI 3.0 to your original bifaces-config file:

Entry Changed	Description of Change
reportFactory bean	added
reportManager bean	added
biTool bean	changed scope to request  added reference to universeBean.universes in universes property  moved the com.mapinfo.jsf.bo.HtmlIBOToolRenderer class from this file to the bifaces-config file
universesBean	added
miSampleUniverse	changed scope to application

#### ***mapxtreme-mapping-faces-config***

The mapxtreme-mapping-faces-config file for LIC v1.0 for Business Objects XI 3.0 has a large number of changes; therefore, import the customizations from your original mapxtreme-mapping-faces-config file used for v1.0 for Business Objects XIR2 to the new mapxtreme-mapping-faces-config file for v1.0 for Business Objects XI 3.0.

- a. Open the original, customized mapxtreme-mapping-faces-config file from the first temporary directory (`LIC_OLD/<domain_directory>/configs`) and use it as a reference only.
- b. Customize the newly installed mapxtreme-mapping-faces-config file, being careful not to copy over the entire file with your original.

#### ***lic.properties***

The lic.properties file did not change for this release; therefore, paste your original, customized lic.properties file from the first temporary directory (`LIC_OLD/<domain_directory>/configs`) back into `/LIC/<domain_directory>/configs`, overwriting the newly installed lic.properties file.

10. Restart the application server and Business Objects and redo the sanity testing phase.

## Installing on a J2EE Environment

There are four steps involved in installing the LIC with Business Objects on a J2EE environment:

- Confirm that all prerequisite software is installed and configured
- Run the installation script to create the war files
- Deploy the war files
- Test the LIC with the Tutorial Data provided

### Prerequisites

You must have the following software installed and configured on your J2EE environment before you can successfully install the LIC:

- The AnalyticalReporting.war file for Business Objects Enterprise XI Release 3
- An application server, installed and configured
- A JDK, installed and configured
- A Java JVM (see the section [JVM Setup on page 12](#) for instructions)

### LIC Directory Structure

The following table outlines the structure of the LIC directory.

**Note** Some directories are not completely revealed, for simplicity. When this is the case, the contents are identified generically in parentheses.

#### XI 3.0 LIC Directory Structure

<b>Data</b>	LIC data files
<b>Docs</b>	LIC documentation
<b>Endorsed</b>	
<b>Fonts</b>	LIC fonts
<b>Install/</b>	<b>apache-ant/</b> (Apache Ant support and installation files)
	<b>J2EE/XIR3</b> Java installation files
<b>Java/</b>	Ant zip file, JDK executable and Tomcat installer
<b>LIC/</b>	(LIC, Map Manager and MapXtreme-specific deployment files, resource files and tools)

### Installing LIC TrueType Fonts

Your LIC CD includes a set of LIC TrueType fonts. These fonts are required in legends and on maps, and are used to display certain symbols on your maps (for instance, landmarks and highway shields). The previewgifs.jar file contains images of all characters and symbols included for each font. You can unzip this file and view thumbnail images of the symbols, if interested.

### Installing Fonts on a Windows Operating System

To install the LIC TrueType font files on a Windows operating system, use the standard operating system procedure in the Control Panel. Alternatively, you can use the CopyFonts.bat file to copy the fonts onto your system.

### Installing Fonts on a Unix or Linux Operating System

To install the LIC TrueType font files on a Unix operation system, copy the files \*.ttf to the directory \$JAVA\_HOME/jre/lib/fonts.

## Understanding the Installation Script

The LIC installer uses a command-line script to unpack and install the software. This script accepts all parameters listed in the table **Parameters for a J2EE Installation** below, in the format illustrated. The four required parameters must be specified to unpack the file successfully.

### Parameters for a J2EE Installation

Parameter	Required	Description
-Ddeploy.dir=<directory>	✓	Creates a <code>deploy</code> directory and drops all Web application files there. This is a temporary work directory.
-Ddata.dir=<directory>	✓	Creates a <code>data</code> directory and drops all Tutorial Data files there.
-Ddomain.dir=<directory>	✓	Creates a <code>domain</code> directory and drops all LIC configuration and Map Manager files there.
-Dinfoview.war=<directory>	✓	Identifies the absolute path to the Business Objects war file (for example, on Windows at <Business Objects installation>/java/applications/AnalyticalReporting.war; on Solaris at <Business Objects installation>/bobje/enterprise120/java/applications/AnalyticalReporting.war
-Dmapxtreme.port=<port>		Identifies the port number for MapXtreme Java, installed with the bimxtj481.war file. If not specified, the port defaults to 8080.
-Ddeploy.host=<host name>		identifies the host name of the machine on which InfoView is deployed. If not specified, the name defaults to the current machine.

### Parameters for a J2EE Installation (*continued*)

Parameter	Required	Description
<code>-Ddeploy.port=&lt;port&gt;</code>		In the case where two ports are required, configure this to something other than 8080. If not specified, the port defaults to 8080.
<code>-Dservlet.container.name=&lt;application server name&gt;</code>		Identifies to the installer that the application server in use is WebSphere. WebSphere v6.1 conflicts with certain LIC files; if defined, the installer knows to exclude the jsp-api.jar file.  This parameter is only used if deploying to WebSphere v6.1.
<code>-Dservlet.container.version=&lt;version number&gt;</code>		Identifies to the installer that the version of WebSphere in use is v6.1. If defined, the installer knows to exclude the jsp-api.jar file.  This parameter is only used if deploying to WebSphere v6.1.
<code>-Dlog.level=&lt;level&gt;</code>		Defines a custom log4j level in /INFO unless otherwise specified. Sets a property for internal logging at LIC runtime.  The default directory for logging output is <domain>/logs
<code>-logfile &lt;file&gt;</code>		Preserves output messages from the installation process into a log file.  Optionally, you can include the -v argument for more verbose log output.

## Installing the LIC on a J2EE Environment

Once you have prepared your J2EE environment as recommended in the section **Prerequisites on page 18**, you can install the LIC with Business Objects. If you have not yet completed the recommended implementations, you should do so before continuing.

**Note** You must run the installation script on the machine where Business Objects and InfoView are installed.

To install the LIC on a J2EE environment:

1. From the command line, `cd` into the `XI 3.0/Install/J2EE/XIR3` directory on your LIC CD, which contains the `install.bat/install.sh` file.
2. Run the install script, specifying all parameters at once.

Below are two examples of running the install script. The first example uses only the required parameters. The second example includes several optional parameters for comparison, such as `-logfile` which preserves output messages from the installation process into a log file and `-Dlog.level` which sets a property for internal logging at LIC runtime.

### Example 1—Required parameters only

```
install -Ddeploy.dir=C:/LIC/stage -Ddata.dir=C:/LIC/data/maps -
Ddomain.dir=C:/LIC/domain -Dinfoview.war="C:/Program Files/Business
Objects/Business Objects Enterprise 12.0/java/applications/
AnalyticalReporting.war"
```

### Example 2—Required parameters with some optional parameters

```
install -logfile C:/LIC/Logging/install.log -Ddeploy.dir=C:/LIC/deploy
-Ddata.dir=C:/LIC/data -Ddomain.dir=C:/LIC/domain -Dinfoview.war="C:/
Program Files/Business Objects/Business Objects Enterprise 12.0/java/
applications/AnalyticalReporting.war" -Dmapxtreme.port=4043 -
Dlog.level=error
```

**Note** If your directory naming convention includes spaces, enclose the directory path in double quotes.

3. Configure your application server for the LIC.

For Tomcat (that was packaged with Business Objects):

- a. Shut down Tomcat.
- b. In the `..\Business Objects\Tomcat55\conf\Catalina\localhost` directory, rename the `AnalyticalReporting.xml` to `"AnalyticalReporting.xml.SAVE"`.
- c. Delete the current `AnalyticalReporting` directory from Tomcat's `webapps` folder
- d. Restart Tomcat.
- e. Deploy the `bimxtj481.war` and `AnalyticalReporting.war` from the LIC's `deploy` directory.

## Default Directory Structure

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For Tomcat (that was not packaged with Business Objects):

- a. Locate the following files in your `/deploy/webapps` directory, which were created during the installation process:
  - `bimxtj481.war`
  - `AnalyticalReporting.war`
- b. Copy these files into your `/Tomcat/webapps` directory.
- c. Restart Tomcat, allowing it time to recognize and unpack the LIC web application files.

For WebSphere:

- a. In the WebSphere Administrative console, deploy the `bimxtj481.war` file, located in the `/webapps` folder.

Specify **bimxtj481** as the context name for this file; if you specify a different name, you must update the MapXtreme Servlet URL in the `mapxtreme-mapping-faces-config` file, located in the `/domain` directory.
  - b. Deploy the `AnalyticalReporting.war` file, located in the `/webapps` folder using the instructions found in your Business Objects documentation. Since the Context Root path is optional for `AnalyticalReporting`, leave this variable blank.
4. Once the war files have been recognized and unpacked by the application server, restart Business Objects. The first web server restart after deployment may take as long as 20 minutes.

## Default Directory Structure

The directory structure below illustrates the default structure for a J2EE environment installation, once the LIC is implemented.

<b>mapinfo/</b>	<b>data/</b>	data files for Business Objects tutorials
<b>deploy/</b>	<b>webapps/</b>	<b>bimxtj481/</b> <b>AnalyticalReporting/</b> <code>bimxtj481.war</code> <code>AnalyticalReporting.war</code> (deployed war files)
<b>domain/</b>	<b>configs</b>	<code>bifaces-config</code> <code>mapxtreme-mapping-faces-config</code> <code>bofaces-config</code> <code>lic.properties</code>
	<b>images</b>	LIC mapping images
	<b>logs</b>	log files for deployed war files

<b>MapManager/</b>	<b>lib/</b> EnvinsaMapManager.bat EnvinsaMapManager.sh (other support files)	(MapManager support files)
<b>resources/</b>	<b>customlayers/</b> <b>custommaps</b> <b>customstyles/</b>	(named resource files)

## Testing the Installation

Once you have installed the LIC, you should test your installation. This test allows you to confirm that the software installed successfully and works in a simulated data environment, before you progress to using real Business Intelligence reports and maps. You should test the report-to-map capability in Business Objects, as well as Map Manager. For information on testing Map Manager, see the section [Testing Map Manager on page 24](#).

### Testing the Report-to-Map Capability

To test the report-to-map capability:

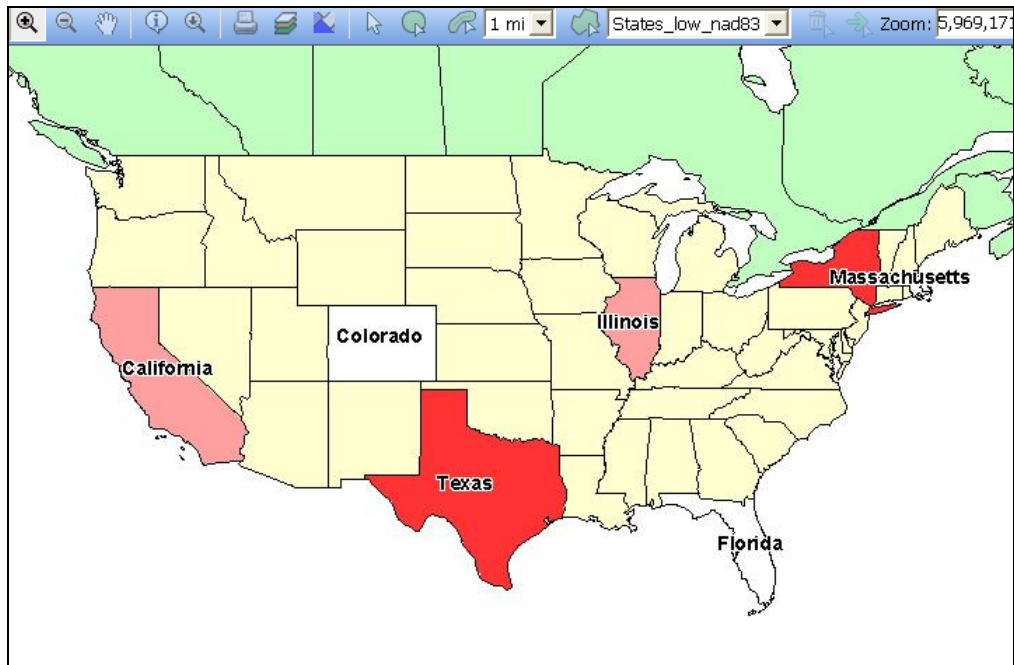
1. Confirm that the **eFashion** universe is available. (This is sample data that is stored in the same location as Business Objects.)
2. From your browser, open **InfoView** as follows:  
`http://<host>:<port>/InfoViewApp`
3. Create a new Web Intelligence document using the universe eFashion, and add the object **State** and the metrics **Sales Revenue** and **Margin** to the report.
4. Open the report.

## Testing the Installation

---

5. From the View menu, select **Map mode**.

The **Map** page opens with a geographic display of the data, similar to the one illustrated below:



### Testing Map Manager

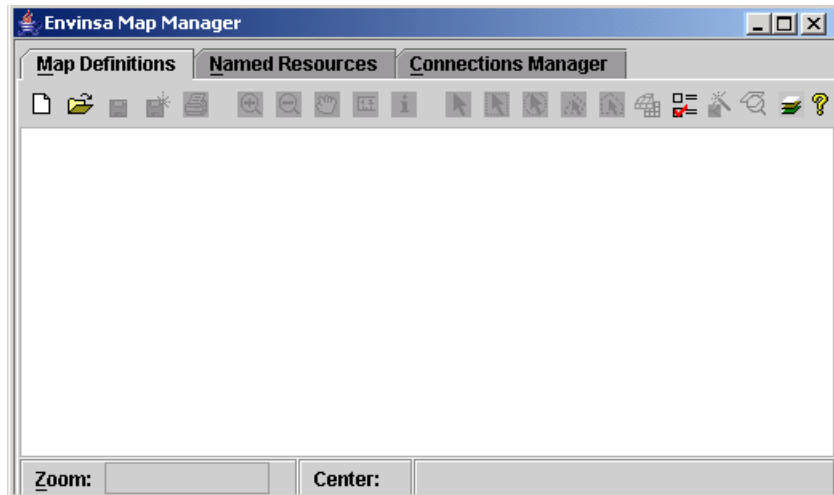
The Map Manager is used to define such named resources as map definitions, custom layers and custom styles. You should test this utility to confirm it installed correctly.

To test Map Manager:

1. Open the `<domain dir>/MapManager` directory.

2. Run Map Manager as follows:
  - For Windows, double-click the **EnvinsaMapManager.bat** file.
  - For Solaris, use the **EnvinsaMapManager.sh** file.

Map Manager opens.



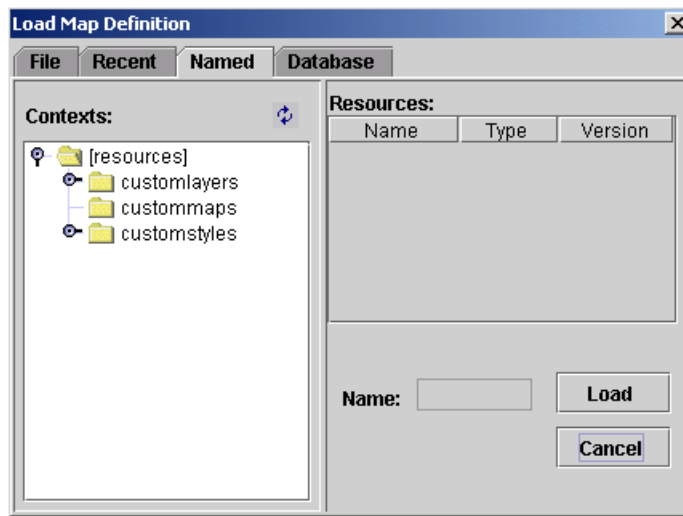
**Note** For Unix, you must be running X11, not Telnet, for this to work.

3. Click the **Open** button.

The **Load Map Definition** window opens.

4. Click the **Named** tab.

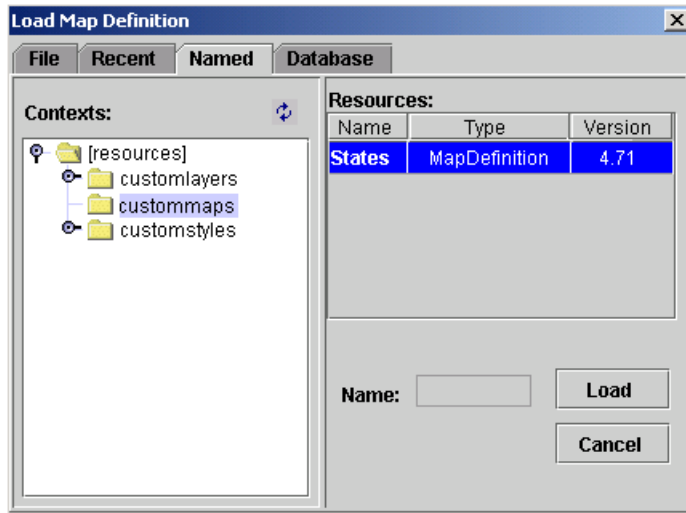
The **Contexts** pane appears with a list of your available resources.



## Testing the Installation

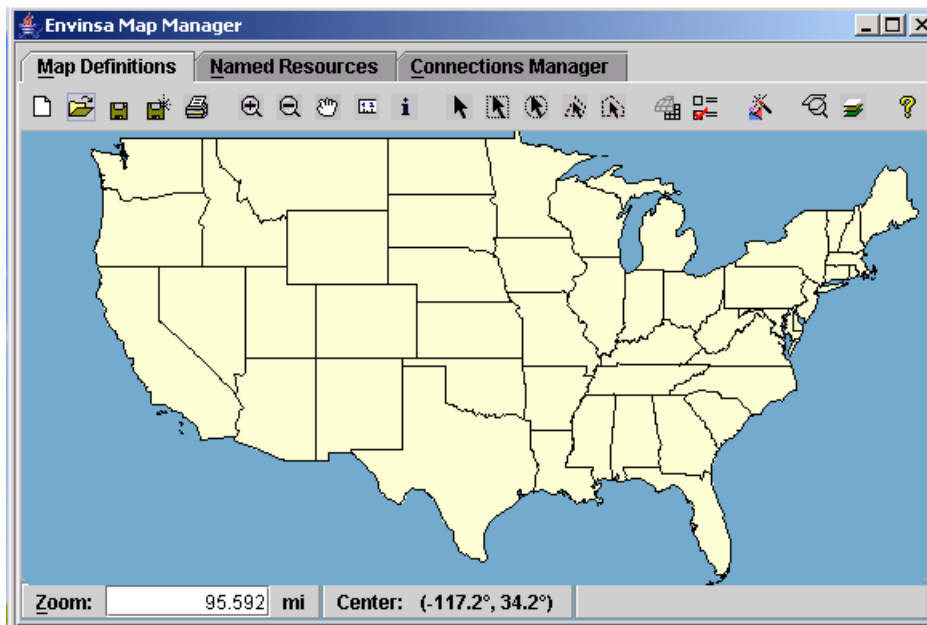
5. Click the **custommaps** directory.

The **Resources** pane displays the **States** map definition.



6. Select the **States** map definition and click the **Load** button.

**Map Manager** displays a geographic display of the data, similar to the one illustrated below:



## Deleting Installation Files

Once the installation is complete and you have tested that everything works properly, you can delete the installation files from your system. They are not required for running the LIC.

The following directories, including all their contents, are redundant once the installation process is complete:

```
Data
Install/
Java
LIC/
```

The Data directory now resides with the installed software. The Java software should have already been deployed and therefore resides in your Program Files directory (or a custom directory, if you did not use the default).

You should retain all Pitney Bowes MapInfo documentation, found in the `/Docs` directory. We recommend you save the directory and its associated PDF files in the `/domain` directory that was created during the installation process. The resulting file structure would look as follows:

```
/domain /configs
/Docs
/images
/logs
/MapManager/
/resources/
```

## Configuring the LIC

Now that you have successfully installed the LIC, you can now begin to configure the product according to your company's needs.

There are a variety of standard settings in the LIC you can change. To begin, you may want to configure your system for optimal performance. You can change the look and feel of your users' Mapping page. You can also change the appearance and functionality of your users' maps, map layers, themes and legends. For full details on configuring the product's performance and customizing any of these LIC features, see the *Location Intelligence Component Administration Guide*.



# Troubleshooting

This appendix includes information on situations that might arise during the installation process. Different systems than the standard ones identified in this documentation or different implementations than those configured here can cause unexpected results. This appendix provides details on tuning your system for optimal performance in both a standard and a non-standard implementation.

## In this appendix:

### Installation Failures

- ♦ **Logging the Installation Process** .....30
- ♦ **Common Problems** .....30
- ♦ **Correcting Application Server Startup Errors** .....32

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## Installation Failures

### Logging the Installation Process

The `-logfile <file>` argument logs output messages to a text file from the installation process. We recommend you include this argument if you are experiencing problems with the installation process. Optionally, you can add the `-v` argument for more verbose log output.

For example,

```
install -v -logfile C:\temp\lic_install.log ...
```

creates a text file that logs all output generated by the installation. Some common mistakes are included in the table below and your log file may assist you in identifying and resolving your particular problem.

### Common Problems

The Location Intelligence Component (LIC) currently uses the ANT utility to assist with the installation process, in the absence of a wizard. Since all required variables must be entered by hand, you must confirm that the process was completed precisely as documented in this guide.

The following table includes common mistakes which will cause the installation to fail.

Issue	Recommendation
<b><i>The command line input includes odd characters</i></b>	
If you compose your installation commands in text editing software and then copy the commands into the command line, you may transfer extra or non-standard characters.	Use Notepad as your text editor rather than Microsoft Word. Word tends to create invisible, non-standard characters which transfer during a copy/paste operation.
<b><i>The parser does not recognize the installation arguments</i></b>	
Double quotation marks are not recognized in command arguments unless they surround a directory name that includes a space (for example, <code>/"Acme Installation"</code> ; directory names like <code>/AcmeInstallation</code> or <code>/Acme_Installation</code> do not require quotation marks, and would cause the parser to fail.	<p>Confirm that only the directories that include a space in the naming convention are surrounded by double quotation marks. In no other instances should double quotes be used.</p> <p>If your parser continues to fail, you can define the values of the arguments as properties in the file <code>build.properties</code>. Add arguments to this file in the format <code>&lt;property&gt;=&lt;value&gt;</code>, for example</p> <pre>data.dir=C:/Acme Installation/data</pre> <p>This file is found in the directory <code>/Install/J2EE/XIR3</code>.</p>

Issue	Recommendation
<b><i>The installation fails as a result of a Java error</i></b>	
ANT fails to run or process anything due to some Java error.	Confirm that your JAVA_HOME variable points to the JAVA VM used by Business Objects (or a compatible version).
	<p>Confirm that the following environment variables are not set:</p> <ul style="list-style-type: none"> <li>• CLASSPATH</li> <li>• ANT_HOME</li> </ul> <p>Additionally, you should confirm that you do not have a second installation of ANT on your system. The following files indicate a second installation:</p> <pre>/etc/ant.conf or \$HOME/.ant*</pre> <p>If you do have a second installation, open the install.sh script in a text editor and modify the last line as follows:</p> <pre>apache-ant/bin/ant --noconfig -lib ../../LIC/Lib/Java/Apache/Ant deploy "\$@"</pre>
<b><i>LIC throws an exception error on the hostname</i></b>	
<p>The installer fails with the following error:</p> <pre>java.net.UnknownHostException: \${env.HOSTNAME}</pre>	<p>Confirm that the ANT installer is substituting the <code>env.HOSTNAME</code> token in the <code>mapxtreme-mapping-faces-config</code> file.</p>

## Correcting Application Server Startup Errors

The following table includes descriptions of errors that may arise at startup involving the application server. Recommendations for resolving the issue are included for each error.

Issue	Recommendation
<b><i>InfoView and the LIC fail to run</i></b>	
<p>The LIC components (bimxtj481 and AnalyticalReporting) fail for no apparent reason.</p>	<p>Give your application server sufficient time to deploy the war files before restarting it and accessing InfoView and the LIC.</p> <p>The first time you request a map for a report, do not interrupt the map display process until the map draw completes. If you must interrupt the process, delete the <code>webapps/AnalyticalReporting</code> directory and the <code>webapps/bimtxj481</code> directory; redeploy the war files.</p> <p>If, after a second installation, you find the software still fails, go through the following checklist:</p> <ul style="list-style-type: none"> <li>Using log4j, track your debug output by setting the property <code>rootCategory</code> to <code>DEBUG</code> in the following file: <pre>WEB-INF\classes\log4j.property</pre> <p>These log files will automatically appear during installation in your <code>&lt;domain.dir&gt;/log/</code> directory. There are <code>log4j.properties</code> files for both contexts (AnalyticalReporting and bimxtj481).</p> </li> <li>Check the content of the <code>webapps/AnalyticalReporting/WEB-INF/web.xml</code> file, particularly the integrated sections</li> <li>Confirm that the <code>AnalyticalReporting.war</code> and <code>bimxtj481.war</code> files deployed correctly</li> <li>Check your application server log files for stack trace messages</li> <li>Confirm that the MapXtreme instance (bimxtj481) instance is running, using the following URL: <pre>http://&lt;host&gt;:8080/bimxtj481/servlet/mapxtreme?debug=on</pre> </li> </ul>

Issue	Recommendation
<b><i>Failure at startup due to syntax error in configuration file</i></b>	
<p>The log file will indicate you have a syntax error with the following message:</p> <pre> ...StandardContext[/ AnalyticalReporting] StandardWrapper.Throwable  java.lang.IllegalStateException: No Factories configured for this Application. ...      at javax.faces.FactoryFinder.     getFactory(FactoryFinder.java:90 )      at javax.faces.webapp.FacesServlet.     init(FacesServlet.java:88) </pre>	<p>Confirm that this syntax error exists in the log4j output in your &lt;domain&gt;/log/*.log file.</p> <p>If this error exists, you should confirm that your bifaces-config file is well formed. The most common mistakes are:</p> <ul style="list-style-type: none"> <li>• Leaving off the closing tag; for example, every opening tag like &lt;property&gt; needs a closing tag like &lt;/property&gt; with the slash</li> <li>• Extra or missing brackets on tags.</li> </ul>
<b><i>Innocuous Tomcat error messages</i></b>	
<p>Tomcat may output the following message the first time a map is displayed:</p> <pre> 108048 [http-8080-Processor23] ERROR org.apache.myfaces.renderkit.html. util.MyFacesResourceLoader - Unparsable lastModified:@lastModified@ </pre>	<p>This error can be safely ignored. For more information on this error, visit the <a href="#">Tomcat</a> website.</p>

## Testing the Installation

This section includes descriptions of problems you may encounter during the testing phase, after the installation is complete.

### Testing Configuration Files for Well-Formedness

If you need to test your XML configuration files for well-formedness, there are a variety of third-party validation tools available (for example, XMLSPY, UltraEdit, rxp and GTRI XML Validation Tool.) However, many of these will fail to validate the XML, since they typically only process the first tag encountered and fail at the first line.

If your validation fails, you can temporarily comment out the first line in the file, allowing the validator to bypass this line and read the rest of the file.

