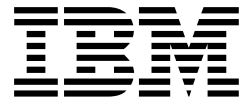


IBM WBI Workbench Server



# Deployment Guide

*Version 4.2.4 (Fix Pack1 - HotFix)*

**Note !**

Before using this information and the products it supports, be sure to read the general information under ["Notices and Trademarks" on page 119](#).

**Fourth Edition (December 2003)**

This edition applies to Version 4, Release 2, Modification 4 of IBM WebSphere Business Integration Modeler and Monitor products (5724-E46) and to all subsequent releases and modifications until otherwise indicated in new editions.

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# Contents

<b>About This Guide .....</b>	<b>1</b>
<b>Introduction to WBI Workbench Server Deployment .....</b>	<b>3</b>
<b>WBI Workbench Server Machine Requirements .....</b>	<b>5</b>
Server Requirements .....	6
Hardware Requirements .....	6
For Windows .....	6
For AIX .....	6
For Solaris .....	6
Software Requirements .....	6
System Requirements .....	7
For Windows .....	7
For AIX .....	7
For Solaris .....	7
Web Client Requirements .....	8
Hardware Requirements .....	8
Software Requirements .....	8
System Requirements .....	9
<b>Creating the WBI Workbench Server Database .....</b>	<b>11</b>
Adjusting the Required Parameters and Configuration .....	12
Adjusting the JDBC Driver Path .....	12
Adjusting the Extra Jar Files Path .....	13
Adjusting the Java Runtime Path .....	13
Adjusting the WAS_HOME Environment Variable .....	13
Running the db2profile Command .....	16
Opening the Install Server Utility .....	17
Creating and Configuring a New Database ...	19
Creating and Configuring the Database Using the InstallServer Utility .....	19
Creating and Configuring the Database Manually .....	20
For Oracle Database: .....	20
For MS SQL Server Database .....	20
For IBM DB2 Database .....	20
Creating the Database Tables .....	21
Updating an Existing Database with a New Version .....	23
Creating the WBI Workbench Server Security System Manager .....	26
<b>WBI Workbench Server Application Server Deployment .....</b>	<b>29</b>
Automated Deployment of WBI Workbench Server Application Server on WebSphere .....	30
Edit the System Properties Environment Variables .....	30
Run the Deployment Wizard .....	30
Start the New Application Server .....	44
For IBM WebSphere Application Server v4.0.2 .....	44
For IBM WebSphere Application Server v5.0 .....	45
For IBM WebSphere Deployment Manager (Network Deployment) v5.0.046 .....	45
Configure the Database Connection .....	47
WBI Workbench Server Application Server Un-deployment .....	48
WBI Workbench Server Uninstallation .....	49
Upgrading your Existing Version of WBI Workbench Server to the Recent Version .....	51
<b>Manual Deployment of WBI Workbench Server on WebSphere 4.0.2 .....</b>	<b>55</b>
WBI Workbench Server Deployment .....	56
Creating the Working Directory .....	56
Adjust the WBI Workbench Server Parameters .....	56
Configure IBM WebSphere .....	60
Create JDBC Provider and Data Sources .....	61
Create and Install the JDBC Provider .....	61
Create the Data Source .....	66
Create a new Application Server .....	68

Install the WBI Workbench Server Enterprise Application .....	72
Regenerating Web Server Plug-in .....	76
Starting the Application Server .....	77
WBI Workbench Server Application Server Un-deployment .....	79
<b>Manual Deployment of WBI Workbench Server on WebSphere 5.0 .....</b>	<b>81</b>
WBI Workbench Server Deployment .....	82
Creating the Working Directory .....	82
Configure IBM WebSphere .....	82
Create JDBC Provider and Data Sources .....	83
Create and Install the JDBC Provider .....	83
Create the Data Source .....	86
Create a new Shared Library .....	89
Create a new Application Server .....	92
Configuring the New Application Server .....	94
Configure the Virtual Host.....	100
Adjust the WBI Workbench Server Parameters .....	101
Install the WBI Workbench Server Enterprise Application .....	106
Assign the Created Shared Library to the Installed Enterprise Application .....	110
Regenerating Web Server Plug-in .....	112
Restarting the Web Server .....	113
Starting the Application Server .....	113
For IBM WebSphere Application Server v5.0 .....	113
For IBM WebSphere Deployment Manager (Network Deployment) v5.0 .....	114
WBI Workbench Server Application Server Un-deployment .....	115
<b>Using the AdminWrite Utility .....</b>	<b>117</b>
<b>Notices and Trademarks .....</b>	<b>119</b>

# About This Guide

This guide introduces the IBM® WebSphere® Business Integration (WBI) Workbench Server™ Deployment. It shows you how to extract the WBI Workbench Server necessary files and folders, install the necessary components, and deploy the WBI Workbench Server Application Server on IBM WebSphere Web Application Server.

**Introduction:** *Introduction to WBI Workbench Server Deployment* introduces how to install and deploy the WBI Workbench Server.

**Chapter 1:** *WBI Workbench Server Machine Requirements* lists the minimum and the recommended machine requirements for WBI Workbench Server.

**Chapter 2:** *Creating the WBI Workbench Server Database* Describes the required steps for creating and configuring the WBI Workbench Server database or upgrading the existing database to the recent version.

**Chapter 3:** *WBI Workbench Server Application Server Deployment* shows how to deploy/un-deploy the WBI Workbench Server Application Server automatically on IBM WebSphere Application Server.

**Appendix A:** *Manual Deployment of WBI Workbench Server on WebSphere 4.0.2* shows how to manually deploy the WBI Workbench Server Application Server on IBM WebSphere 4.0.2.

**Appendix B:** *Manual Deployment of WBI Workbench Server on WebSphere 5.0* shows how to manually deploy the WBI Workbench Server Application Server on IBM WebSphere Application Server 5.0 or IBM WebSphere Deployment Manager (Network Deployment).

**Appendix C:** *Using the AdminWrite Utility* describes how to use the AdminWrite utility in order to gather the required parameters needed for running the InstallServer utility.



# Introduction to WBI Workbench Server Deployment

The WBI Workbench Server is a Web application that is deployed on a Web Application Server. After you have installed the Web Application Server and deployed the WBI Workbench Server components, then you can access the WBI Workbench Server Web Application from anywhere through a Web browser.

The WBI Workbench Server also requires a database server to be installed. (IBM DB2® Universal Database™ Server, Oracle 8i Database Server, or MS SQL Server 2000). You may install the Database Server on the same machine as the Web Application Server or on another machine and install Database Client on the machine where the Web Application Server is installed and the WBI Workbench Server is deployed.

This guide lists the WBI Workbench Server's machine requirements, also you will be guided step by step to deploy the WBI Workbench Server on the IBM WebSphere Application Server by using the manual and automated methods.

The following chapters provide details on the WBI Workbench Server's machine requirements, how to properly create and configure the WBI Workbench Server database using the Database Configuration Utility named InstallServer Utility, and how to perform the procedure of deploying the WBI Workbench Server on IBM WebSphere Application Server on Windows, AIX® and Solaris platforms.

The following conventions are used for all the instructions throughout this Guide:

- On AIX and Solaris platforms, use forward slash / instead of back-slash \ when writing paths
- **Important note:** The names and paths of folders and files are case sensitive.
- **Important note:** Make sure that the user you are using have all needed permissions. For example, using a user who has no permissions on WebSphere or the Database will fail to deploy the WBI Workbench Server.
- The following are a list of all abbreviations in the deployment steps:
  - \* **<WBServerHomeDir>** = The WBI Workbench Server home directory where you have installed the WBI Workbench Server using the Installation Wizard.. e.g. C:\Workbench\_Server
  - \* **<WBServerWorkDir>** = The WBI Workbench Server working directory that will be created by the Automatic Deployment Wizard. e.g. C:\BPR423

- \* **<ServerName>** = The name of the server on which the WBI Workbench Server will be deployed.
- \* **<WebServerName>** = The name of the machine that hosts the Web server for which the WebSphere is configured. (Ex. The machine name on which the IBM HTTP Server or Microsoft IIS 4.0 or IIS 5.0 is installed)
- \* **<WebSphere>** = The WebSphere home directory. e.g.  
C:\Websphere\AppServer
- \* **<DB2>** = The path where the IBM DB2 is installed. (E.g. C:\SQLLIB)
- \* **<ORACLE\_HOME>** = The path where the Oracle Database Server is installed. (E.g. C:\Oracle\Ora81)
- \* **<SQLSRVR>** = The MS SQL Server database server installation root directory
- \* **<SQLJDBC>** = The MS SQL Server JDBC driver installation directory. (e.g. C:\Apps\SQL200JDBC)



# **Chapter 1: WBI Workbench Server Machine Requirements**

This section describes the current machine requirements for the WBI Workbench Server. This includes both the Server machine requirements and the client machine (s) requirements.

# 1.1 Server Requirements

The following are the Hardware, Software and System requirements of the Server machine(s) where the WBI Workbench Server will be installed.

## 1.1.1 Hardware Requirements

The Server hardware requirements are the same requirements as those for the Database Server and the Web Application Server. However, these are the **minimum** hardware requirements for the Server machine:

### 1.1.1.1 For Windows

- Pentium III 650 MHz or higher (recommended)
- 256 MB RAM (512 recommended)
- 100 MB of disk space, plus sufficient space for database

### 1.1.1.2 For AIX

- IBM RS/6000® Server
- 512 MB RAM, or higher
- 100 MB hard-disk space, plus sufficient space for database

### 1.1.1.3 For Solaris

- Sun Server
- 512 MB RAM, or higher
- 100 MB disk space, plus sufficient space for database

## 1.1.2 Software Requirements

FOR All platforms

- IBM WebSphere Application Server v4.0.2 Advanced Edition, or  
IBM WebSphere Application Server v5.0 Application Server, or  
IBM WebSphere Application Server v5.0 Network Deployment.
- IBM DB2 Universal Database version 7.2 with Fixpack 5 or higher, or IBM DB2 UDB V8.1. Or

Oracle 8i Database Server release 8.1.7.1, or Oracle 9i. Or

MS SQL Server 2000

- \* For MS SQL Server you have to download and install the MS SQL Server JDBC Driver. You can download the driver from the following location:

<http://www.microsoft.com/sql/downloads/default.asp>

You have to perform the following steps after you downloaded and installed the MS SQL Server JDBC Driver and before using it in order to use the MS SQL Server JDBC distributed transactions through JTA. This must be repeated for each SQL Server installation that will be involved in a distributed transaction.

1. Copy the file sqljdbc.dll from **<SQLJDBC>\SQLServer JTA** directory to the **<SQLSRVR>\bin** directory.
2. From the server, use the ISQL utility to run the instjdbc.sql script. The system administrator should back up the master database before running instjdbc.sql.
3. At a command prompt, use the following syntax to run instjdbc.sql:

*ISQL -U sa -P sa\_password -S server\_name -i location\instjdbc.sql*

Where:

- *sa* is the user name of the system administrator
- *sa\_password* is the password of the system administrator.
- *server\_name* is the name of the server on which SQL Server resides.
- *location* is the full path to instjdbc.sql. This script is located in the MS SQL Server JDBC Driver install\_dir/SQLServer JTA directory.

The instjdbc.sql script generates many messages. In general, these messages can be ignored; however, you should scan the output for any messages that indicate an execution error. The last message should indicate that instjdbc.sql ran successfully. The script fails when there is not enough space available in the master database to store the JDBC XA procedures or to log changes to existing procedures.

4. From the **Windows Control Panel >Administrative Tools**, Run Services and make the start up option of the service named **Distributed Transaction Coordinator** is Automatic, and then start this service.

## 1.1.3 System Requirements

### 1.1.3.1 For Windows

- Windows NT 4.0 Server (with Service Pack 4 or Higher) or Windows 2000 Server

### 1.1.3.2 For AIX

- AIX V4.3.3 or higher, or AIX 5.1 or higher

### 1.1.3.3 For Solaris

- Solaris 8, maintenance level August 2001, or Solaris 9

# 1.2 Web Client Requirements

## 1.2.1 Hardware Requirements

- Pentium III 650 MHz, or higher
- 128 MB RAM, or higher (256 MB recommended)

## 1.2.2 Software Requirements

- Java-enabled browser (preferably, IE 5.0 or higher)
- Java 2 Runtime Environment (JRE) 1.4.0 or higher.

You can download and install it from the following URL:

<http://java.sun.com/getjava/manual.html>

To Enable Printing processes diagrams and other objects' reports in BPM Web Publisher, you have to perform the following adjustments in your browser's settings:

1. Select **Tools > Internet Options** from the Microsoft Internet Explorer menu
2. Select the Advanced tab.
3. Navigate the Settings list to Java (Sun) section
4. Clear the check box named ***Use java 2 v1.4.0\_01 for <applet> (requires restart)***
5. Click OK and restart the browser.
6. Select the Security tab.
7. Select **Local Intranet** from the **Select Web content zone to specify its security setting** list.
8. Click **Custom Level**. The **Security Settings** dialog box appears.
  - Navigate the Settings list to **Microsoft VM** section.
  - Select **Custom** radio button.
  - Click **Java Custom Setting**. The Internet dialog box appears.
  - Select the Edit Permissions tab.
    - \* Navigate the Permissions list to **Unsigned Contents > Run Unsigned Content > Additional Unsigned Permissions > Printing**.
    - \* Select the **Enable** Radio Button.
    - \* Navigate the Permissions list again to **Signed Contents > Run Signed Content > Additional Signed Permissions > Printing**.
    - \* Select the **Enable** Radio Button.

9. If You are accessing the WBI Workbench Server client from the Internet then Repeat steps 7 and 8 by selecting the Internet Web content zone.
10. Restart the browser.
11. For Windows 2000 clients make sure that you have installed Service Pack 3 in order to insure proper printing.



**Important Note: Only PCL-type printers should be used in order to print BPM Web Publisher diagrams properly in all languages.**

### 1.2.3 System Requirements

- Windows 98, Windows NT 4.0 (with Service Pack 3 or higher), Windows 2000, or Windows XP



# Chapter 2: Creating the WBI Workbench Server Database

After you have installed the WBI Workbench Server using the WBI Workbench Server Installation Wizard, you need to create and configure the WBI Workbench Server database, and create the database tables. This can be done through the **InstallServer** utility.

The **InstallServer** utility allows you to do the following:

- Create and configure a new WBI Workbench Server database and database tables.
- Update the existing WBI Workbench Server database tables' contents with the new database tables' version.
- Define the WBI Workbench Server security System Manager.

The **InstallServer** utility should be installed on the same machine on which the Database Server is installed. If the Database Server and the IBM WebSphere Application Server are not installed on the same machine, then you can install the **InstallServer** utility again using the WBI Workbench Server Installation Wizard on the machine on which the Database Server is installed.



**Important Note: For IBM DB2 database on AIX and Solaris platforms, If you have multiple database instances, then the WBI Workbench Server database should be created in the same instance where the IBM WebSphere database (the WAS database) exists.**

For Oracle database server, The WBI Workbench Server database should be created and configured manually providing that the default name of the database will be **BPRORA1** unless you change this name. In addition, you must create a user to be used for creating and configuring the database tables providing that its user name must be **WFBPR**. This user should have a database administrative (DBA) privilege on the created database instance.

The Install Server utility starts by running the batch file named *Login.bat* on Windows platform or the shell file named *Login.sh* on AIX and Solaris platforms. These two files are located in **<WBServerHomeDir>\installserver**

## 2.1 Adjusting the Required Parameters and Configuration

Before starting the Install Server utility you may need to do the following:

- If your database is installed in a different machine from the server on which the IBM WebSphere is installed, then you need to Copy these two files (xerces.jar and j2ee.jar) from the <WebSphere>\lib folder to **<WBServerHomeDir>\installserver\lib** folder. And then edit the **login.bat** (or **login.sh**) file in order to adjust the path of these two files.
- If your database is installed in the same machine on which the IBM WebSphere Application Server is installed, then you need to make sure that an environment variable named WAS\_HOME is defined and contains the actual path of the IBM WebSphere installation directory. If this variable is not defined, then you must define it
- On AIX and Solaris platforms, If you are using IBM DB2 as the database server, make sure that you run the InstallServer Utility with a user who is in the DB2 Administrators group. You should also run at least once the <DB2>/db2profile file from the same terminal console from which you will start the InstallServer Utility.
- You may need also to edit the Login.bat (or the Login.sh) file that runs the InstallServer utility in order to adjust the path of the database JDBC driver file according to the Database Server you are using. This is done automatically through the WBI Workbench Server installation wizard. However, in case you changed the path of the JDBC driver file you have chosen in the wizard steps, then you have to edit the Login.bat or the Login.sh files to adjust the actual path of this file.
- If the path of the java.exe in Windows platform (or java in AIX and Solaris platforms) is not defined in the Path environment variable, then you need also to edit the login.bat (or login.sh) file to adjust the path of the java.exe (or java) to include the full path on which it exists.

The following sections describe how to perform each of the above steps:

### 2.1.1 Adjusting the JDBC Driver Path

To adjust the JDBC Driver path:



**This step is not required if the WBI Workbench Server Installation Wizard has recognized the path of the database JDBC Driver file successfully.**

1. Open the **Login.bat** (or the **Login.sh**) for edit.
2. Edit the classpath line to adjust the path of the JDBC driver file to reflect the actual path and name of this file.



3. Save and close the **Login.bat** (or the **Login.sh**) file.

## 2.1.2 Adjusting the Extra Jar Files Path

To adjust the path of the xerces.jar and j2ee.jar files that you have copied from the machine on which the IBM WebSphere Application Server exists to the **<WBServerHomeDir>\installserver\lib** folder:

1. Open the **Login.bat** (or the **Login.sh**) for edit.
2. Put a Remark sign (#) before the second line that sets the path of the *extra\_jar* variable equals *%WAS\_HOME%*.



**For AIX and Solaris platforms the EXTRA\_JAR variable equals \$WAS\_HOME**

3. Remove the Remark sign from the beginning of the first line that sets the path of the *extra\_jar* variable equals **<WBServerHomeDir>\installserver\lib**.
4. Save and close the **Login.bat** (or the **Login.sh**) file.

## 2.1.3 Adjusting the Java Runtime Path

To adjust the path of the java.exe on Windows platform (or the java on AIX and Solaris platforms),

1. Open the **Login.bat** (or the **Login.sh**) for edit.
2. Edit the classpath line to add the actual path of the java.exe or the java (the Java home directory) before it.

Example:

If you are using the JDK that is shipped with the IBM WebSphere Application Server, then you should adjust the classpath line to start with **<WebSphere>\java\bin\java.exe** in Windows platform or **<WebSphere>\java\bin\java** in AIX and Solaris platforms.

3. Save and close the **Login.bat** (or the **Login.sh**) file.

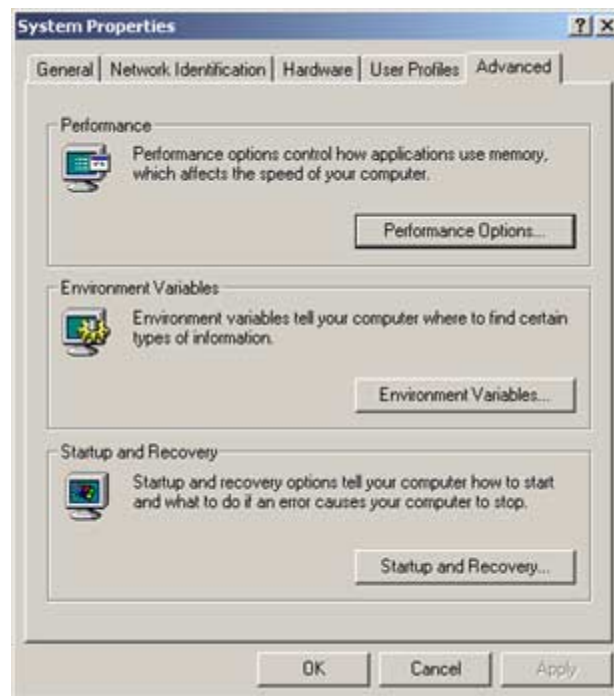
## 2.1.4 Adjusting the WAS\_HOME Environment Variable

To define the WAS\_HOME environment variable if it was not defined, you can perform one of the following three methods:

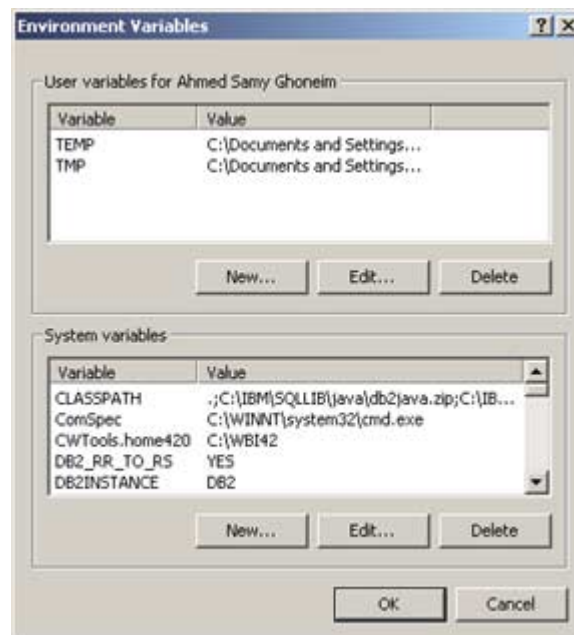
The first method applies only to Windows platform. The first method's steps are:

1. Click the **Start** button on the Windows taskbar.
2. Select **Settings > Control Panel**.

3. Double-click the **System** icon
4. The **System Properties** dialog box appears.
5. Select the **Advanced** tab.

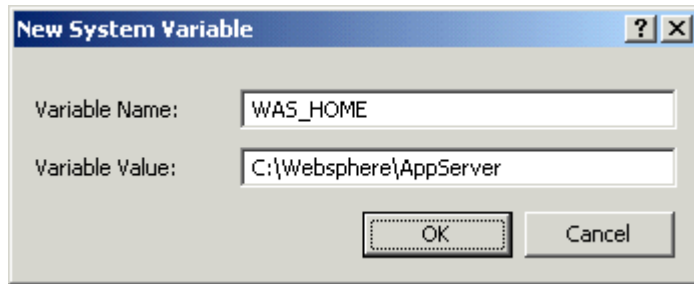


6. Click the **Environment Variables** button.
- The **Environment Variables** dialog box appears.



7. In the **System Variables** section, scroll the variables list and look for a previously defined variable with the name **WAS\_HOME**. If this variable has been already defined and contains the correct path of the IBM

WebSphere installation directory, then you can exit the dialog box and start the Automatic Deployment wizard. If the variable does not exist, then click **New**. The **New System Variable** dialog box appears.



8. In the **Variable Name** field, type WAS\_HOME
9. In the **Variable Value** field, type the installation directory of the IBM WebSphere.
10. Click **OK** to close the **New System Variable** dialog box.
11. Click **OK** to close the **Environment Variables** dialog box.
12. Click **OK** to close the **System Properties** dialog box.

The second method applies to Windows, AIX and Solaris platforms. The second method's steps are:

1. In Windows platform:
  - Open a command line window.
  - Type the following:  

```
Set WAS_HOME = <WebSphere>
```

(Where **<WebSphere>** is the IBM WebSphere installation directory. e.g. C:\WebSphere\AppServer).

  - Run the Login.bat from this command line window.
2. In AIX and Solaris platforms:
  - Open a command line window.
  - Type the following in the command line:  

```
WAS_HOME= <WebSphere>
```

```
export WAS_HOME
```

(Where **<WebSphere>** is the IBM WebSphere installation directory. e.g. /usr/WebSphere/AppServer in AIX, or /opt/WebSphere/AppServer in Solaris)..

  - Run the Login.sh from this command line window.

The third method applies to Windows, AIX and Solaris platforms. The third method's steps are:

1. Open the **Login.bat** (or the **Login.sh**) for edit.
2. Type the following in a new line before the first line:

- In Windows platform:

`Set WAS_HOME = <WebSphere>`

(Where **<WebSphere>** is the IBM WebSphere installation directory).

- In AIX and Solaris platforms:

`WAS_HOME= <WebSphere>`

`export WAS_HOME`

(Where **<WebSphere>** is the IBM WebSphere installation directory.  
e.g. `/usr/WebSphere/AppServer` in AIX, or `/opt/WebSphere/AppServer` in Solaris).

3. Save and close the **Login.bat** (or the **Login.sh**) file.

## 2.1.5 Running the db2profile Command

In order to run the db2profile command:



**This section's steps applies only if you are using IBM DB2 as the database server on AIX and Solaris platforms,,**

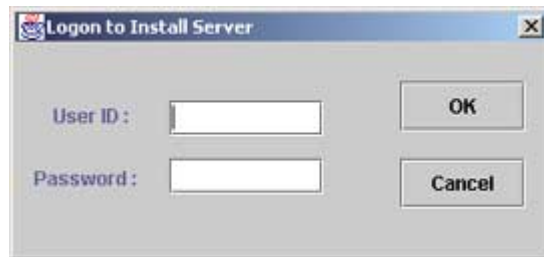
1. Open a terminal console.
2. Change the directory to **<DB2>**.
3. Type the following in the command line and then press Enter:  
**`..db2profile`**
4. Run the Login.sh file from the same terminal console.

## 2.2 Opening the Install Server Utility

After selecting and adjusting the proper variables and configurations, then you can now start the InstallServer utility.

1. Start the Install Server utility by running the Login.bat on Windows platform or the Login.sh on AIX and Solaris platforms.

The Login window appears.



2. Enter the user ID and password of the Database administrator that were defined during the WBI Workbench Server Installation wizard. This user must be a Database Administrator.



- **These Fields are case sensitive.**
  - **If you are using Oracle Database Server, then the User ID of the database administrator will be *WFBPR* and it cannot be modified. This user should be created manually with Database Administrative privileges on the WBI Workbench Server database instance that you have created manually before starting the InstallServer Utility.**
3. Click **OK**.
    - If the user ID or password is incorrect, then a message will appear to notify you of the incorrect login data. Click **OK** on the message to return to the **Login** window in order to enter the correct information.

- If the entered user ID or password is correct, then then the **Install Server** utility will start and the Install Server's main window will appear.



## 2.3 Creating and Configuring a New Database

The following steps are performed when you create the WBI Workbench Server database for the first time.

### 2.3.1 Creating and Configuring the Database Using the InstallServer Utility

The InstallServer Utility allows you to create the WBI Workbench Server database automatically. In this case, the database will be created with a default name **BPR** and default code page UTF-8. In addition, a BufferPool will be created with a default name *BPRPool* and a default page size 8K. Moreover, a default TableSpace will be created using this BufferPool with a default name *BPRTableSpace*. The database tables will be created using this TableSpace.

If you want to create the database with a different name and/or different code page, then you should create and configure the database manually.



**For Oracle database server, the Create Database and Configure Database commands will be disabled. The Database Administrator should create and configure the WBI Workbench Server database manually, providing that the default name of the database will be *BPRORA1*, unless the administrator changes this name.**

To create and configure a new Workbench Server database from scratch, if it is the first time you deploy the WBI Workbench Server:



**Important Note: These steps will drop any old database, and any existing data will be lost.**

1. Create the new WBI Workbench Server database by selecting **Database > Create Database** from the menu, or by clicking the **Create Database** button in the **Install Server** main window.
2. Configure the database by selecting **Database > Configure Database** from the menu, or by clicking the **Configure Database** button in the **Install Server** main window.
  - If you are using IBM DB2, the **Configure Database** command does the following:
    - \* Sets the database configuration parameters (such as Application Control Heap Size, Application Heap Size, Log File Size, Log Buffer Size, Database Heap, Lock List, and Statement Heap) with values that enhance its performance.

- \* Grants the user who will create the database with the needed privileges.
- If you are using MS SQL Server, the **Configure Database** command does the following:
  - \* Creates a user named WFBPR. The database tables will be created on the schema of this user.
  - \* Grants this user with the needed privileges.

## 2.3.2 Creating and Configuring the Database Manually

If you want to create the database with a different name from the default name (BPR), then you should create and configure the database manually.

In order to allow the created database to support multiple languages, the database should be created with the UTF-8 codepage.

### 2.3.2.1 For Oracle Database:

1. Create the WBI Workbench Server database either with the default name BPRORA1 or with any other name.
2. Create a user named WFBPR with a Database Administrative privileges (DBA) on the created Database Instance.
3. You can configure the created database with the appropriate values that are suitable for your settings.

### 2.3.2.2 For MS SQL Server Database

1. Create the WBI Workbench Server database either with the default name BPR or with any other name.
2. Create a user named WFBPR to be used for creating the database tables on his/her schema.
3. You can configure the created database with the default values.

### 2.3.2.3 For IBM DB2 Database

1. Create the WBI Workbench Server database either with the default name BPR or with any other name.
2. You must configure the database with the following values:
  - application control heap size =64000
  - application heap size =8192
  - log file size = 8192
  - log buffer size =128
  - database heap = 1024



- lock list = 1000
- statement heap = 8192

### 2.3.3 Creating the Database Tables

After creating and configuring the database, you need to create the database tables. This is done by selecting **Database > New Installation** from the menu, or by clicking the **New Installation** button in the **Install Server** utility main window.

If you have created the database manually with a name other than the default names, then you should edit the file named **database.properties** located in the **<WBServerHomeDir>\installserver** folder, in order to change the default name with the name you have used for creating the database. This should be done before starting the InstallServer Utility. To do this:

1. Open the **database.properties** file for edit with any text editor.
2. Edit the *sourceUrl* value to change the following values, if needed:
  - For IBM DB2, change the database default name (BPR) with the new name you have used for creating the database manually.
  - For MS SQL Server:
    - \* Change the Database Server machine IP address and Port Number with the correct IP Address and Port Number of the Database Server machine. This is done if you have created and configured the database manually on a different Database Server machine.
    - \* Change the database default name (BPR) with the new name you have used for creating the database manually.
  - For Oracle Database:
    - \* Change the Database Server machine IP address and Port Number with the correct IP Address and Port Number of the Database Server machine. This is done if you have created and configured the database manually on a different Database Server machine.
    - \* Change the database default name (BPRORA1) with the new name you have used for creating the database manually.
3. To configure the database TableSpace, edit the line that contains the TableSpace name to contain the new TableSpace name:

*TableSpace* = **<TableSpaceName>**.

Where **<TableSpaceName>** is the TableSpace name.

- For IBM DB2, if the database has been created with the UTF-8 code page, then the TableSpace should be created with a BufferPool that has a page size 8K.

4. If the code page of the created database is not UTF-8, add a new line that contains the following:

*UTF8 = False*

5. Save and close the file.

## 2.4 Updating an Existing Database with a New Version

If you already have the previous version of WBI Workbench Server (v4.2.2 and higher) and you obtained the recent version (v4.2.4 Fix Pack1 with HotFix) that includes changes in the database structure, then you will need to update your existing database settings. By updating database settings, you avoid creating a new database that will drop the old database with all its stored data.

In addition, you should select the appropriate code page for each organization that is stored in the database you are upgrading. The selected code page will identify to the Web browser the proper settings and fonts that should be used in order to display the information of this organization. The supported codepages are:

1252 - English	1255 - Hebrew
1252 - French	1256 - Arabic
1252 - German	932 - Japanese
1252 - Italian	936 - Chinese (Traditional)
1252 - Portuguese	950 - Simplified Chinese
1252 - Spanish	949 - Korean



- **Switching GUI and text direction to Right-to-Left is not supported in this release.**
- **Important Note:** If the existing database of the previous version has a different name other than the default name, then you should edit the file named *database.properties* located in the <WBServerHomeDir>\install\server folder, in order to change the default name with the name you have used for creating the database. This should be done before starting the InstallServer Utility and using it for upgrading the database tables. Refer to the steps for editing the *database.properties* file that are mentioned in the section entitled **Creating the Database Tables** for details about how to do this.

In order to update the database with the new database configuration:

1. Select **Database > Update Version** from the Install Server utility menu bar, or click the **Update Version** button in the Install Server utility main window. The **CodePage Upgrade** window appears. This window lists all existing organizations that are stored in the database you are upgrading.



**If the database you are upgrading has no stored organization in it, then the CodePage Upgrade window will not appear, and the database updating process will start directly.**

2. For each listed organization in the organizations table, select the appropriate codepage for the organization from the Codepage drop-down list in each organization row.
3. Click **OK**. The application will start updating the database with the new table structure without deleting the old data, and updating the existing organization with the selected codepages.



**Important Note: If you are upgrading a database of version 4.2.2 then the stored organizations will be upgraded to version 4.2.3 only. You will need to perform the organization upgrade through the Administrative page in the BPM Repository in order to upgrade these organizations to version 4.2.4 Fix Pack1 HotFix.**



**Important Note: If you close the CodePage Upgrade window, instead of clicking OK, without setting the organizations' codepages, then the codepage 1252 - English will be set by default for all organizations, even if any of the existing organization has a previously defined codepage.**

After updating the database with the new version, all stored organization in the database will be upgraded to the new version.

The WBI Workbench Server (v4.2.4 Fix Pack1 HotFix) database holds organization files that are created with IBM WebSphere Business Integration (WBI) Workbench™ versions 4.2.3, 4.2.4, 4.2.4 Fix Pack1, and 4.2.4 Fix Pack1 HotFix. The BPM Repository supports adding organization files created by these WBI Workbench versions only. Organization files that were created by an earlier WBI Workbench version (v4.2.2 and earlier) should be converted first – using WBI Workbench version 4.2.3, 4.2.4, 4.2.4 Fix Pack1, or 4.2.4 Fix Pack1 HotFix - to one of these versions before adding them to the WBI Workbench Server database. Refer to the WBI Workbench Server User Guide for more information about adding organizations to the database.



**If you are upgrading an existing database of version 4.2.2 to version 4.2.4 Fix Pack1 HotFix, then you should make sure that the database TableSpace you are using is named BPRTTableSpace and that this TableSpace exists. If you are using a different TableSpace then you must edit the file named database.properties to change the TableSpace name in the line that contains the TableSpace name to contain the new TableSpace name before clicking the Update Version button. A message will appear to inform you with that upon clicking the Update Version button.**



**The database migration to WBI Workbench Server 4.2.4 Fix Pack1 HotFix can be done only if the existing database belongs to these versions of WBI Workbench Server (v4.2.2, v4.2.3, v4.2.4, and v4.2.4 Fix Pack1). If the existing database belongs to an earlier version than v4.2.2 (version 4.2.1 and before), then you cannot migrate the database directly to the current version. In this case you must upgrade your existing database incrementally to version 4.2.2, by using the InstallServer Utility of this version to keep the history of the added processes versions. Afterwards, you can upgrade the database to the recent version of WBI Workbench Server.**

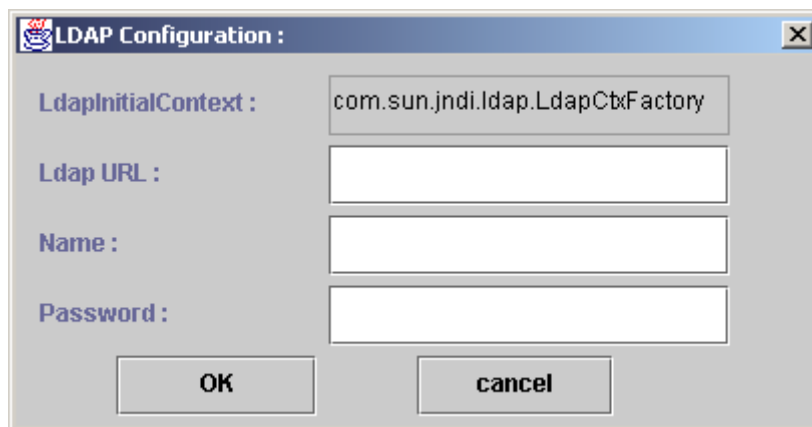
In order to allow the WBI Workbench Server v4.2.4 database to support multiple languages data, it should have been created using UTF-8 code page. Otherwise, you should migrate the existing database manually using your database options to a new database that is created using UTF-8 code page. Refer to your database server documentation for more information about the database migration/export option.

## 2.5 Creating the WBI Workbench Server Security System Manager

To create the WBI Workbench Server security system manager:

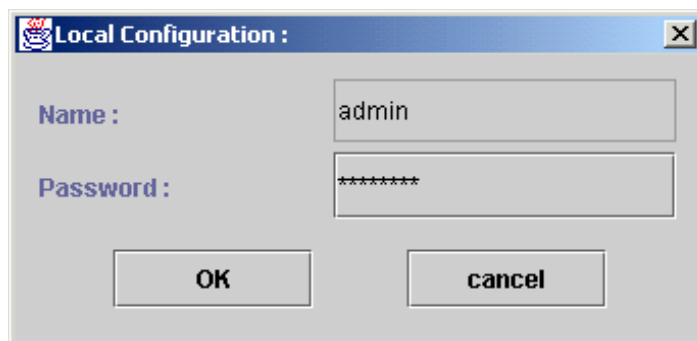
1. If you have selected **LDAP** as your security type: Select **Database Security Manager > Create Security Manager**.

The **LDAP Configuration** dialog box appears.

The LDAP Configuration dialog box has a title bar with a red, yellow, and green icon and the text "LDAP Configuration :". It contains four labeled text input fields: "LdapInitialContext :" with the value "com.sun.jndi.Ldap.LdapCtxFactory", "Ldap URL :", "Name :", and "Password :". At the bottom are "OK" and "cancel" buttons.

- Type the LDAP Server port name in the **LdapPort** box. (eg. *Ldap://Ldapsrvr:389/*)
  - Type the LDAP distinguished name (DN) for the user who will be defined as the security system manager in the **Name** box.
  - Type the user's password in the **Password** box and click **OK**.
  - The entered information of the specified user is saved to the database.
2. If you have selected Local as your security type
    - Select **Database Security Manager > Create Security Manager**.

The **Local Configuration** dialog box appears.

The Local Configuration dialog box has a title bar with a red, yellow, and green icon and the text "Local Configuration :". It contains two labeled text input fields: "Name :" with the value "admin" and "Password :" with the value "\*\*\*\*\*". At the bottom are "OK" and "cancel" buttons.

The **Name** and **Password** fields display the user name and password of the security system manager. You cannot edit these two fields.



**You cannot change the user who is defined as the security system manager from this dialog box. In order to change the security system manager, you must re-install the Install Server utility and define a new user through the installation steps.**

- Click **OK**.

3. Exit the Install Server utility by selecting **File > Exit** from the menu.





# Chapter 3: WBI Workbench Server Application Server Deployment

After the WBI Workbench Server database has been created and configured and the database tables have been created, you are now ready to deploy the WBI Workbench Server application server on IBM WebSphere. The deployment can be done either manually through the IBM WebSphere **Administrator's Console**, or automatically using the automated deployment wizard that is installed in the WBI Workbench Server Home directory through the WBI Workbench Server installation wizard.

The instructions in the following sections describe the automated methods of the WBI Workbench Server deployment on IBM WebSphere Application Server 4.0.2, IBM WebSphere Application Server 5.0 and IBM WebSphere Deployment Manager 5.0 (for Network Deployment). For a description of the manual deployment on WebSphere Application Server 4.0.2, please refer to Appendix A of this guide: *Manual Deployment of WBI Workbench Server on WebSphere Application Server 4.0.2*. For a description of the manual deployment on IBM WebSphere Application Server 5.0 and IBM WebSphere Deployment Manager 5.0, please refer to Appendix B of this guide: *Manual Deployment of WBI Workbench Server on IBM WebSphere Application Server 5.0 and IBM WebSphere Deployment Manager 5.0*.

## 3.1 Automated Deployment of WBI Workbench Server Application Server on WebSphere

The following sections describe how to deploy and start the WBI Workbench Server application server on IBM WebSphere Application Server automatically using the WBI Workbench Server Automatic Deployment wizard. This wizard can be run on Windows, AIX and Solaris platforms. For Windows platform, you need to run the file named **setup.bat**. For AIX and Solaris platforms you need to run the file named **setup.sh**. These two files are located in the **<WBServerHomeDir>\was4-wizard** folder for IBM WebSphere Application Server 4.0.2 or in **<WBServerHomeDir>\was5-wizard** for IBM WebSphere Application Server 5.0 and IBM WebSphere Deployment Manager 5.0 that was copied to your hard drive after running the WBI Workbench Server installation wizard.

### 3.1.1 Edit the System Properties Environment Variables

Before starting the Automatic Deployment wizard, you have to make sure that an environment variable named **WAS\_HOME** is defined and contains the actual path of the IBM WebSphere installation directory. Refer to the section entitled *Adjusting the WAS\_HOME Environment Variable* above in this document for the detailed steps of defining this variable, providing that you should apply the steps of this section on the **setup.bat** (or **setup.sh**) file instead of the **Login.bat** (or **Login.sh**) file.

On AIX and Solaris platforms, if you are using IBM DB2 as the database server, you should also run, at least once, the **<DB2>/db2profile** file from the same terminal console from which you will start the **setup.sh** file. Refer to the section entitled *Running the db2profile Command* above in this document for the detailed steps of running this command, providing that you should apply the steps of this section on the **setup.sh** file instead of the **Login.sh** file.

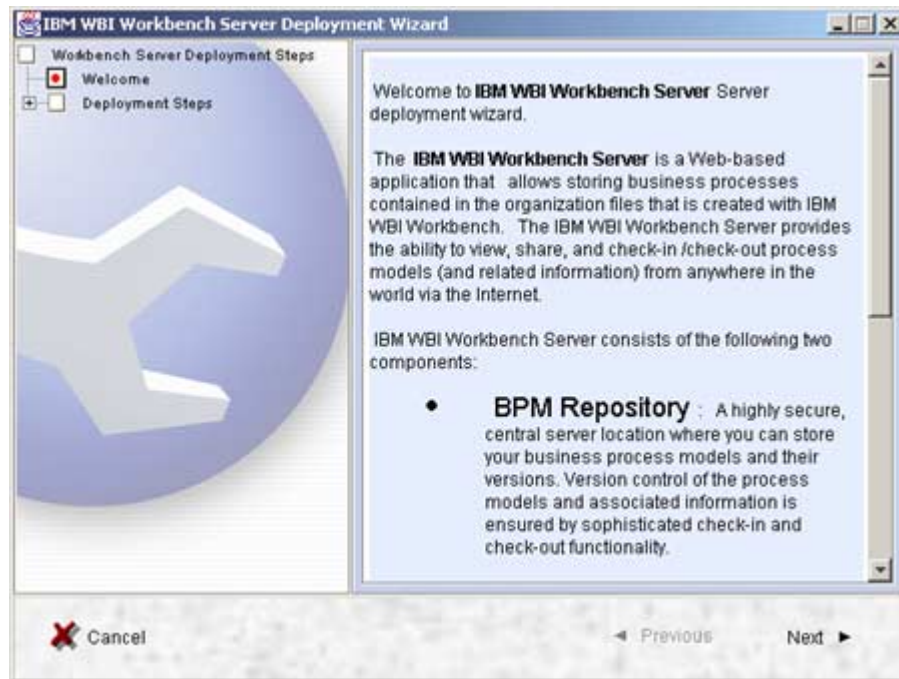
### 3.1.2 Run the Deployment Wizard

The following steps describe how to deploy the WBI Workbench Server Application Server and its Web Application automatically using the WBI Workbench Server deployment wizard.

After configuring the required environment variables and the WBI Workbench Server parameters, then you can start the WBI Workbench Server Automatic Deployment wizard:

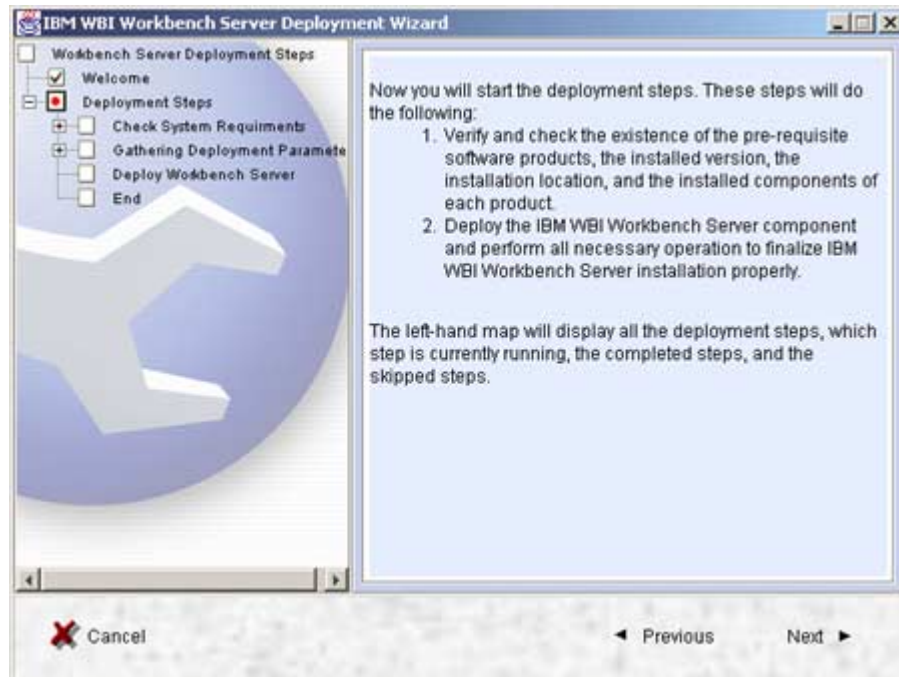
1. Run the file named **setup.bat** on Windows platform (or **setup.sh** on AIX and Solaris platforms). The WBI Workbench Server Deployment Wizard will start on the **Welcome** screen. The left-hand map will display all the

deployment steps, the step that is currently running, the completed steps, and the remaining steps. In all coming steps, to go forward to the next step, click **Next**. To go back to the previous step click **Previous**. You can exit the deployment wizard at any time by clicking **Cancel**.

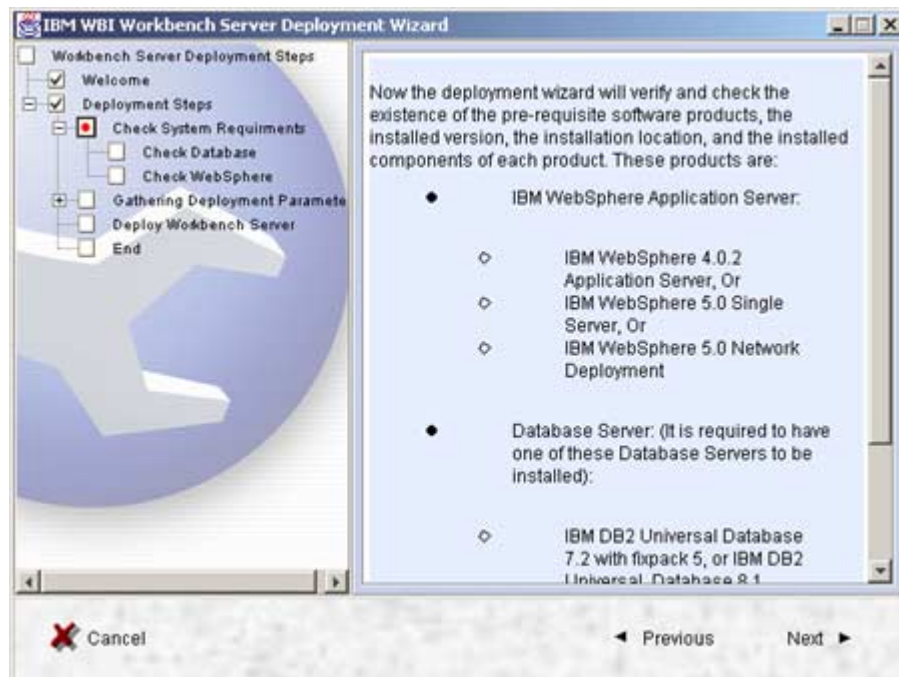


2. The next screen is the **Install Steps** where you will be notified with the following deployment steps and their purpose. The deployment steps will perform these two main tasks:
  - Verifying and checking the existence of the pre-requisite software products, the installed version, the installation location, and the installed components of each product.
  - Deploying the WBI Workbench Server component and performing all necessary operations to finalize WBI Workbench Server deployment properly.

Click **Next** to continue.



3. In the next screen you will be informed with the software requirements that the wizard will check. Click **Next** to continue.



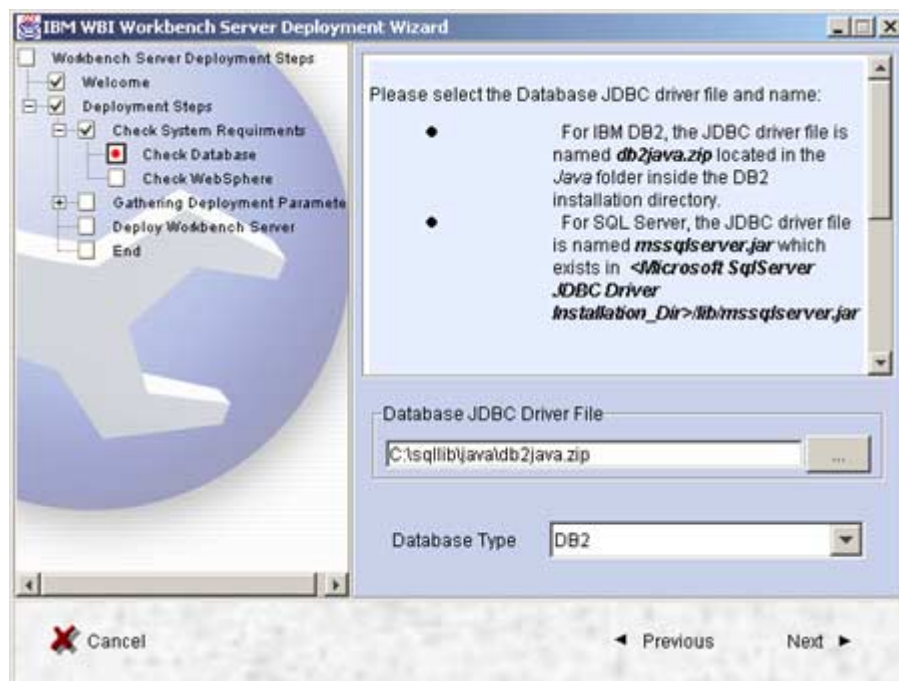
4. In the next screen you will be asked to enter the Database JDBC driver file path and the Database type.
- For IBM DB2 this driver file is named **db2java.zip** and located in the **<DB2>java12** folder

- For Oracle this driver file named **classes12.zip** and located in the **<ORACLE\_HOME>\jdbcVib** folder
- For MS SQL Server this driver file named **mssqlserver.jar** and located under the **lib** folder inside the SQL Server JDBC Driver installation folder. You have to make sure that the files named **msutil.jar** and **msbase.jar** exist in the same folder.

Enter the required path or click **Browse** to select the path.

From the **Database Type** combo box, select the Database type (DB2, Oracle or MS SQL Server)

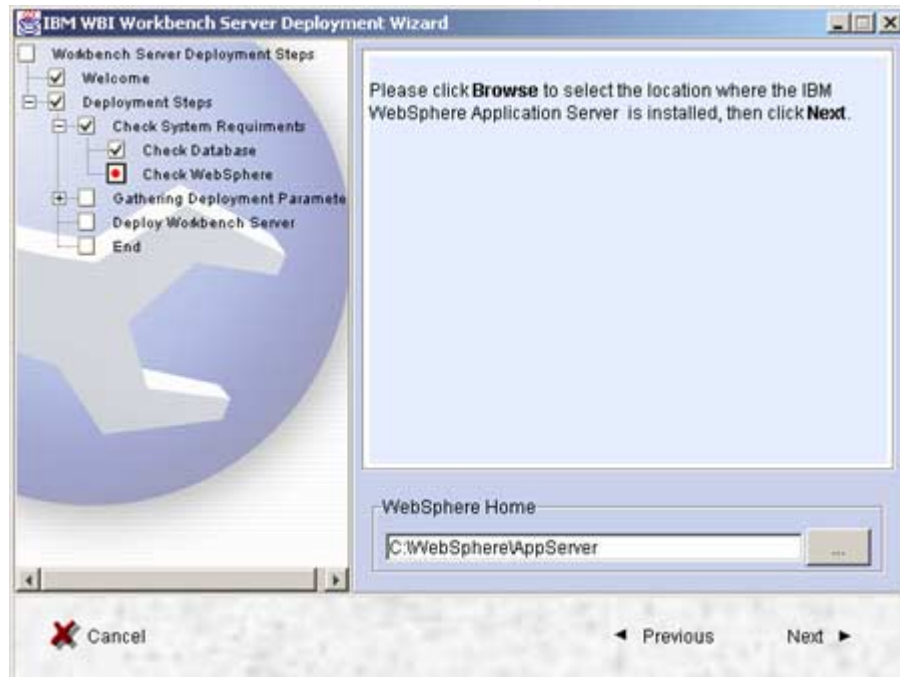
If the entered path or name is not correct, then you will be informed by a message, and the wizard will not continue until you enter the correct path. Then, you can click **Next** to continue.



5. In the next screen, you will be asked to enter following IBM WebSphere parameters:

- If you are using IBM WebSphere Application Server v4.0.2 then you need only to enter the location of the **AppServer** folder that is located in the **WebSphere** installation folder. (i.e. C:\WebSphere\AppServer)

Enter the required path or click **Browse** to select the path. If the entered path is not correct, then you will be informed by a message, and the wizard will not continue until you enter the correct path.



- If you are using IBM WebSphere Application Server v5.0 or IBM WebSphere Deployment Manager (Network Deployment) v5.0, enter the following parameters:

- \* In the **WebSphere Home** field, enter the installation path of IBM WebSphere
  - For IBM WebSphere Application Server v5.0, enter the location of the **AppServer** folder that is located in the **WebSphere** installation folder. (i.e. C:\WebSphere\AppServer)
  - For IBM WebSphere Deployment Manager (Network Deployment) v5.0, enter the location of the **DeploymentManager** folder that is located in the **WebSphere** installation folder. (i.e. C:\WebSphere\DeploymentManager)

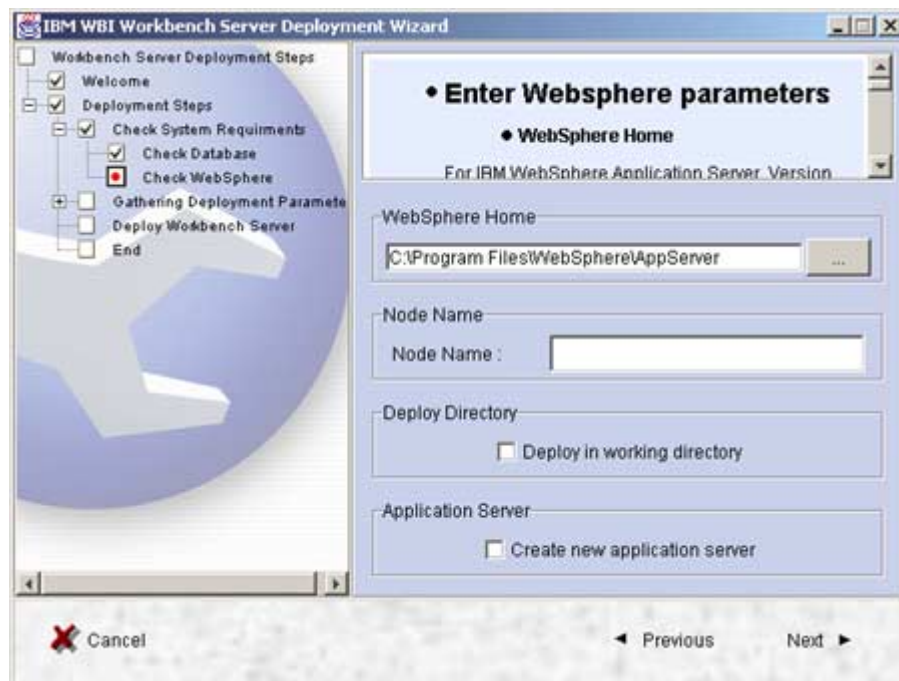
Enter the required path or click **Browse** to select the path. If the entered path is not correct, then you will be informed by a message, and the wizard will not continue until you enter the correct path.

- \* In the **Node Name** field, enter the node name on which you will deploy the WBI Workbench Server. The wizard will check if you



entered a node name or not in this step and it will not continue until you enter a node name. The actual existence and the validity of the entered node name will not be checked in this step. It will be checked when the wizard start the deployment or when you run the deployment script if you chose to generate only the deployment script and run it later..

- \* Select the **Deploy in Working Directory** check box if you want to deploy the WBI Workbench Server Enterprise Application in the WBI Workbench Server working directory that will be entered later in a coming step. Leaving this check box cleared will set the deployment directory the default directory that the IBM WebSphere uses for deployment. (i.e. *C:\WebSphere\AppServer\installedApps*)
- \* Select the **Create new application server** check box to create a new application server named BPRAppServer on which the WBI Workbench Server Enterprise Application will be deployed. If you keep this check box cleared then the WBI Workbench Server Enterprise Application will be deployed on the Base Server named server1. It is preferred to select this check box in case you are deploying on WebSphere Deployment Manager (Network Deployment) v5.0.

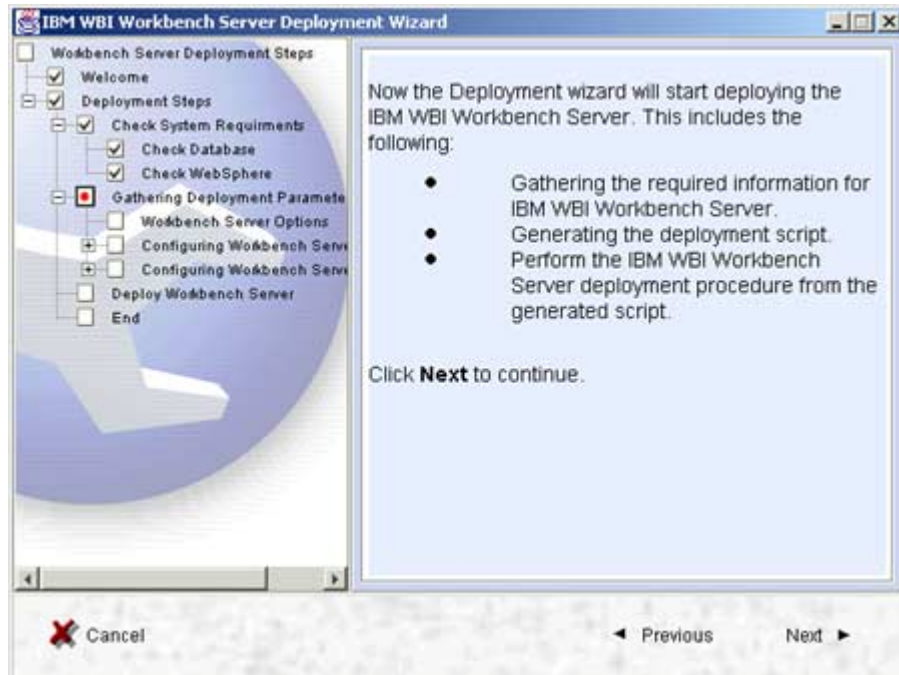


Click **Next** to continue.

6. Now the information required about the pre-requisite software has been entered. The next step will inform you that the wizard will start deploying the WBI Workbench Server which includes the following:
  - Gathering the required information for WBI Workbench Server.
  - Generating the deployment script.

- Performing the WBI Workbench Server deployment procedure by using the generated script.

Click **Next** to continue.

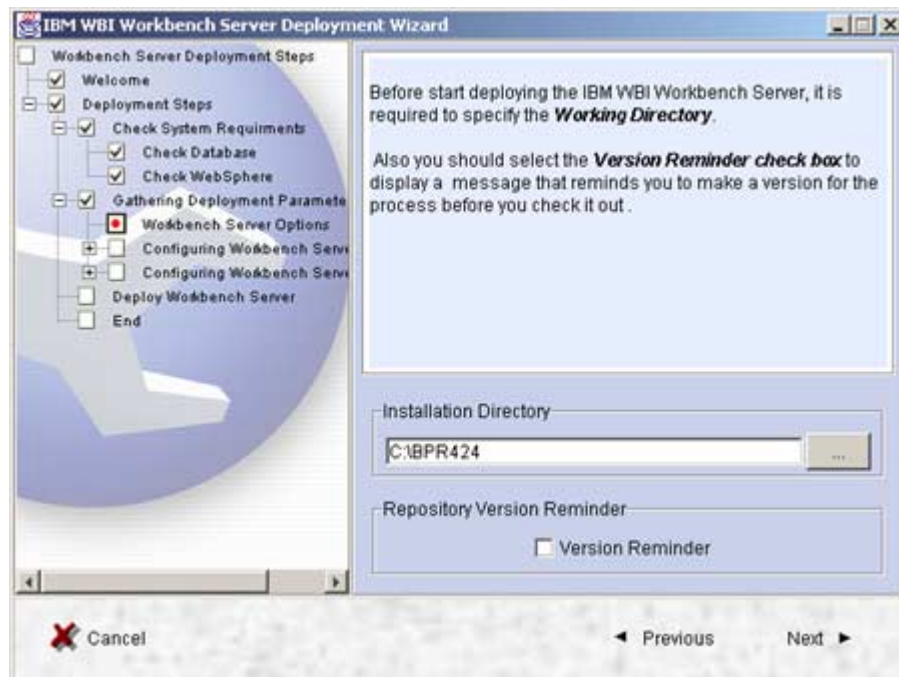


7. In the next step you should enter the WBI Workbench Server installation directory which will be used as the Working Directory. On AIX and Solaris platforms you should have a write access on this folder in order to allow the wizard to copy the necessary folders and files to this folder.

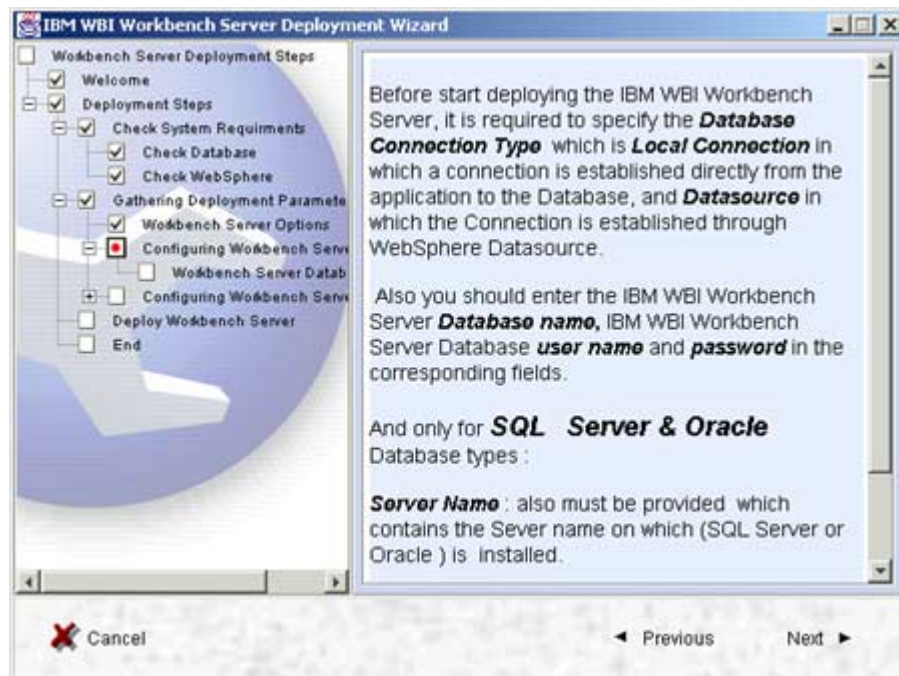
Also you can select the Version Reminder check box in order to allow displaying a message in the BPM Repository that reminds you to create a new version for the processes before you check them out, or you can



clear this check box to disable displaying this message. Click Next to continue.



8. In the next screen you will be informed with the required parameters that you should enter for the WBI Workbench Server Database. Click **Next** to continue.



9. In the next step, you should enter the following parameters for the WBI Workbench Server database:

- In the **Workbench Connection Option** section, select the connection type between the Workbench Server application server and the Database Server from the Connection Type drop down list:
  - \* Select **Local Connection** for the direct connection between the Workbench Server application server and the Database Server.
  - \* Select **DataSource** to allow the connection between the Workbench Server application server and the Database Server through a DataSource.
- In the **Workbench Server Database** section, enter the WBI Workbench Server database name or URL, and the user name and password of the WBI Workbench Server database administrator in the corresponding fields:
  - \* For IBM DB2:
    - Database Name: *BPR*
  - \* For MS SQL Server:
    - Database URL: *jdbc:microsoft:sqlserver://*  
*<SQL\_Server\_Machine\_Name>:<SQL\_Server\_Port\_Number>;Da*  
*tabaseName=BPR*
    - Where **<SQL\_Server\_Machine\_Name>** is the machine name of the machine on which the MS SQL Server is installed, and **<SQL\_Server\_Port\_Number>** is the MS SQL Server Port Number. (E.g. *jdbc:microsoft:sqlserver://SQLMachine:1433;Database-Name=BPR*)
  - \* For Oracle:
    - Database Name: *BPRORA1*
    - DB Admin: Type *WFBPR*
- If your database server is Oracle or MS SQL Server, then enter the following information in the **For SqlServer and Oracle Database Types** section:
  - \* In the **DB Server/IP** field, enter the name or the IP address of the Database Server machine.
  - \* In the **Port Number** field, enter the Database Server machine's port number.

The wizard will check the connection with the database with the entered user name and password. If one or more of the entered parameters are not correct, then you will be informed by a message, and the wizard will

not continue until you enter the correct parameters. Then, you can click **Next** to continue.

IBM WBI Workbench Server Deployment Wizard

Workbench Server Deployment Steps

- ✓ Welcome
- ✓ Deployment Steps
  - ✓ Check System Requirements
    - ✓ Check Database
    - ✓ Check WebSphere
  - ✓ Gathering Deployment Parameters
    - ✓ Workbench Server Options
    - ✓ Configuring Workbench Server Database
    - ✗ Workbench Server Security
  - ✗ Deploy Workbench Server
  - ✗ End

Workbench Connection Option

Connection Type: DataSource

Workbench Server Database

DB Name/URL: BPR

DB Admin: ADMIN

Password: \*\*\*\*\*

For SqlServer And Oracle Database Types

DB Server/IP: 127.0.0.1

Port Number: 1433

Cancel Previous Next

- In the next step, select the security mode you want to apply (Local Security or LDAP Security) from the Security Mode combo box. Then click **Next** to continue.

IBM WBI Workbench Server Deployment Wizard

Workbench Server Deployment Steps

- ✓ Welcome
- ✓ Deployment Steps
  - ✓ Check System Requirements
    - ✓ Check Database
    - ✓ Check WebSphere
  - ✓ Gathering Deployment Parameters
    - ✓ Workbench Server Options
    - ✓ Configuring Workbench Server Database
    - ✗ Workbench Server Security
  - ✗ Deploy Workbench Server
  - ✗ End

Before start deploying the IBM WBI Workbench Server, it is required to specify the **Security Mode** which is Local or LDAP..

For the LDAP Security Mode:

- Enter the IBM WBI Workbench Server **LDAP Authentication Mechanism**, **LDAP Initial Context**, and **LDAP Port** in the corresponding fields.
- In **User DN** & **User Password** fields, enter the DN & password (respectively) of a user authorized to read & search LDAP server.
- In **Naming Attribute ID** field, enter the naming attribute identifier, for example: in Active Directory services it is **CN** & in

Workbench Server Security

Security Mode: Local Security

Cancel Previous Next

- In the next step, if you select the LDAP Security mode then enter the following parameters in the **For LDAP Security Only** section:

- \* In the **LDAP URL** field: Type the LDAP Server name and port number (e.g. *ldap://ldapsrvr:389/*)



**On AIX and Solaris platforms, type the LDAP server IP address instead of the server name**

- \* The remaining parameters are needed to allow logging in to WBI Workbench Server client using only the User ID, instead of having to supply the full Distinguished Name (DN). If you leave these parameters empty, then the user will not be able to login.

When the user tries to log in to the WBI Workbench Server client using only his/her user ID, the application queries the LDAP Server for the full DN of this user using the following parameters, and then uses the obtained full DN for login.

The required parameters are:

- In the **User DN** field: Type a Distinguished Name (DN) for an LDAP Server authorized user that will be used for logging in to this LDAP Server, and performing the search in the LDAP users tree.
- In the **User Password** field: Type the password of the defined User DN.



**The User DN and User Password fields are optional. If you leave these fields empty without specifying a user then the user Anonymous will be used. In this case this user should have at least read/search access rights on the LDAP directory.**

- In the **Naming Attribute** field: Type the name of the prefix that precedes the user ID in the LDAP Server database (i.e. CN, UID,...etc). The value of this parameter varies between the different types of LDAP Servers.
- In the **Base of Search** field: Type the starting point in the LDAP tree from which the query will start searching for the full DN of the given user ID.
- In the **DN Attribute ID** field: Type the name of the Distinguished Name attribute ID (i.e. distinguishedName, entrydn, ...etc. This value is case sensitive).

Click **Next** to continue

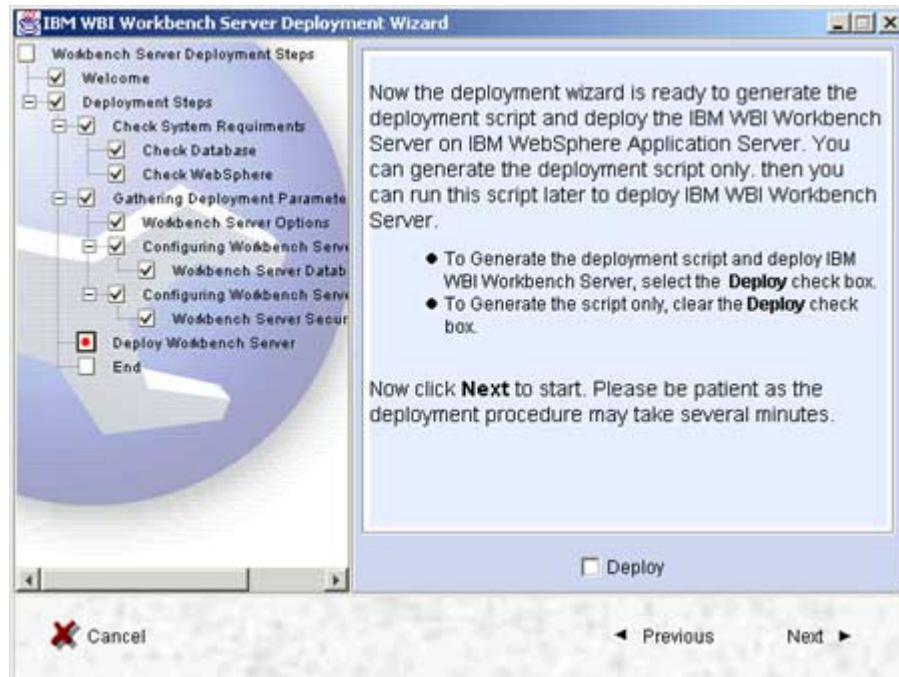


12. After gathering the required information about the WBI Workbench Server deployment, the wizard now is ready to start deploying WBI Workbench Server. The wizard will first create the deployment script, and then this script will be used to deploy WBI Workbench Server. You can only create the deployment script, and then you can run this script later. The created script will be placed in **<WBServerWorkDir>\install**. To deploy WBI Workbench Server by using this script, run the batch file named *BPRServerInstall.bat* (or *bprserverinstall.sh* for AIX and Solaris platforms) in the previous path.

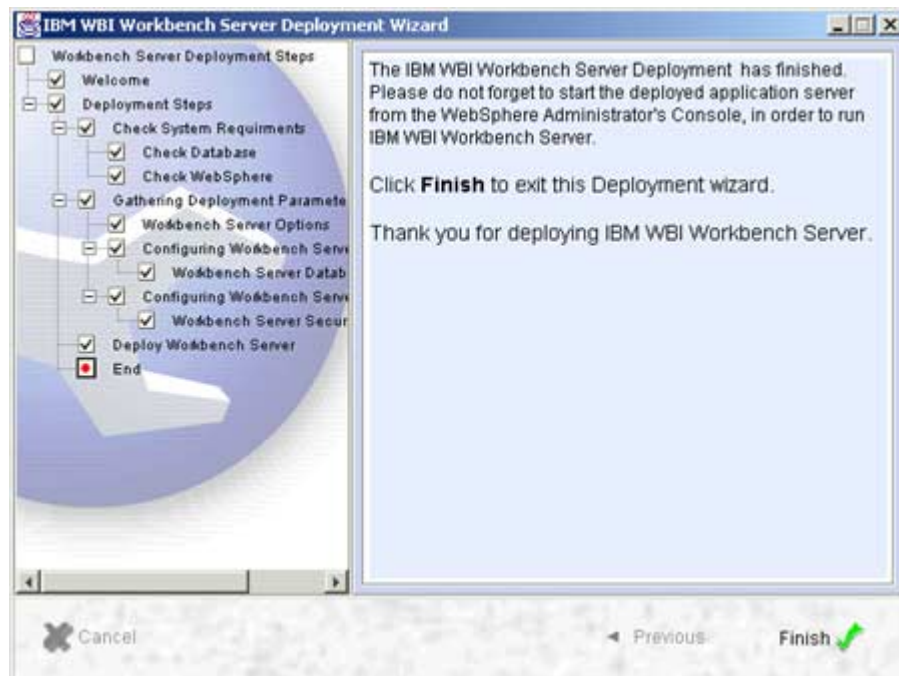
- To generate the deployment script and deploy WBI Workbench Server, select the **Deploy** check box.
- To generate the script only, clear the **Deploy** check box.



Now click **Next** to continue.



13. Now the WBI Workbench Server deployment has finished. You will need to start the deployed Application Server from the WebSphere Administrator's Console, in order to run WBI Workbench Server. Click **Finish** to exit this Deployment Wizard.



**Important:**

If the message that says:

*"WASX7023E: Error creating "SOAP" connection to host "localhost"; exception information:*

*com.ibm.websphere.management.exception.ConnectorNotAvailableException WASX7213I: This scripting client is not connected to a server process; please refer to the log file C:\Program*

*Files\WebSphere\DeploymentManager\logs\wsadmin.traceout for additional information."* appears when the wizard starts the deployment and the

deployment didn't start, then you must edit the batch files named:

*BPRServerInstall.bat*, and the *BPRServerUninstall.bat* files (or the

*BPRServerInstall.sh* and *BPRServerUninstall.sh*) that have been generated by

the wizard in the **<Working Directory>\Install** folder, and also the batch files

named *startBPRAppServer.bat* and *stopBPRAppServer.bat* (or

*startBPRAppServer.sh* and *stopBPRAppServer.sh*) that are generated in the

**<Working Directory>** folder. To do this:

1. Obtain the port number of the SOAP\_CONNECTOR\_ADDRESS for the Base Server (server1) in case you are using IBM WebSphere Application Server 5.0 or for the Deployment Manager in case you are using IBM WebSphere Deployment Manager (Network Deployment) 5.0. To do this:

- For the IBM WebSphere Application Server 5.0:

- \* Open the IBM WebSphere Administrative Console
- \* From the left hand tree, select Servers > Application Servers
- \* Click the server1 hyperlink in the servers list
- \* From the server1 configuration page, click the End Points hyperlink in the Additional Properties table.
- \* Click the SOAP CONNECTOR ADDRESS hyperlink from the End Point Name column.
- \* Use the value that exists in the Port field.

- For the IBM WebSphere Deployment Manager (Network Deployment) 5.0:

- \* Open the IBM WebSphere Administrative Console
- \* From the left hand tree, select System Administration > Deployment Manager
- \* From the Deployment Manager configuration page, click the End Points hyperlink in the Additional Properties table.
- \* Click the SOAP CONNECTOR ADDRESS hyperlink from the End Point Name column.
- \* Use the value that exists in the Port field.

2. Edit the *BPRServerInstall.bat*, *BPRServerUninstall.bat*, *startBPRAppServer.bat*, and *stopBPRAppServer.bat* files (or the *bprserverinstall.sh*, *bprserveruninstall.sh*, *startBPRAppServer.sh* and *stopBPRAppServer.sh*).

3. Add the following section to the command written in these batch (or shell) files after the wasadmin path:

*-conntype SOAP -port <the obtained port number>*

Examples:

- In the *BPRServerInstall.bat* the line should be:

```
call "C:\WebSphere\DeploymentManager\bin\wsadmin.bat" -conntype SOAP  
-port 8889 -wsadmin_classpath "..\lib\wizardValidate.jar;..\lib\jdom.jar" -f  
InstallBPRServer.jacl
```

- In the *BPRServerUninstall.bat* the line should be:

```
call "C:\WebSphere\DeploymentManager\bin\wsadmin.bat" -conntype SOAP  
-port -f InstallBPRServer.jacl
```

- In the *startBPRAppServer.bat* the line should be:

```
call "C:\IBM\WebSphere\DeploymentManager\bin\wsadmin.bat" -conntype  
SOAP -port 8889 -c "$AdminControl startServer BPRAppServer Node1"
```

- In the *stopBPRAppServer.bat* the line should be:

```
call "C:\IBM\WebSphere\DeploymentManager\bin\wsadmin.bat" -conntype  
SOAP -port 8889 -c "$AdminControl stopServer BPRAppServer Node1"
```

Where 8889 is the obtained port number for the SOAP CONNECTOR ADDRESS

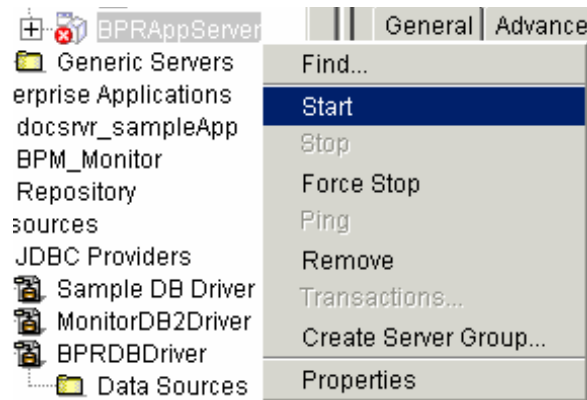
### 3.1.3 Start the New Application Server

After the deployment has finished, you have to start the new Application you have created. This is done through the WebSphere Administrator's Console. To do this:

#### 3.1.3.1 For IBM WebSphere Application Server v4.0.2

1. Start the WebSphere Administrator's Console.
2. In the **WebSphere Administrative Domain** tree, right-click **Nodes > <ServerName> > Application Server > BPRAppServer** and select **Start** from the shortcut menu that appears.





3. Wait until the confirmation message appears, and then click **OK**.

### 3.1.3.2 For IBM WebSphere Application Server v5.0

If you deployed the WBI Workbench Server Enterprise application on the Base Server named server1, then you must restart this base server (server1). To do this:

1. IN Windows platform, run a command prompt window. In AIX or Solaris platforms start a console window.
2. Change the directory to **<WebSphere>\bin**
3. Type the following command line:

*stopServer server1*



**For AIX and Solaris platforms, type *stopServer.sh server1*. This command is case sensitive.**

4. Wait until the Application Server is start and the confirmation message appears, and then type the following command line:

*startServer server1*



**For AIX and Solaris platforms, type *startServer.sh server1*. This command is case sensitive.**

5. Wait until the Application Server is start and the confirmation message appears.

If you deployed the WBI Workbench Server Enterprise application on a new Application Server named BPRAppServer, then you must start this server. You can do this by two methods:

The first method's steps are:

1. IN Windows platform, run a command prompt window. In AIX or Solaris platforms start a console window.

2. Change the directory to <WebSphere>\bin
3. Type the following command line:  
*startServer BPRAppServer*



**For AIX and Solaris platforms, type *startServer.sh BPRAppServer*. This command is case sensitive.**

4. Wait until the Application Server is start and the confirmation message appears.

The second method's steps can be done automatically by running the batch file named *startBPRAppServer.bat* in Windows platform (or the shell file named *startBPRAppServer.sh* in AIX and Solaris platforms) that is located in the **<Working Directory>**. To do this

1. Run the batch file named *startBPRAppServer.bat* in Windows platform (or the shell file named *startBPRAppServer.sh* in AIX and Solaris platforms).
2. Wait until the Application Server is start and the confirmation message appears.



**You can also use the batch file named *stopBPRAppServer.bat* (or *stopBPRAppServer.sh*) to stop this new Application Server**

### **For IBM WebSphere Deployment Manager (Network Deployment) v5.0**

In case you created a new Application Server, then start this Application Server. To do this

From the WebSphere Administrative Console, do the following:

1. From the left hand tree, select **Servers > Application Server**. The **Application Servers** page appears.
2. Select the **BPRAppServer** Application Server by selecting the check box next to the Application Server's name.
3. Click **Start**.



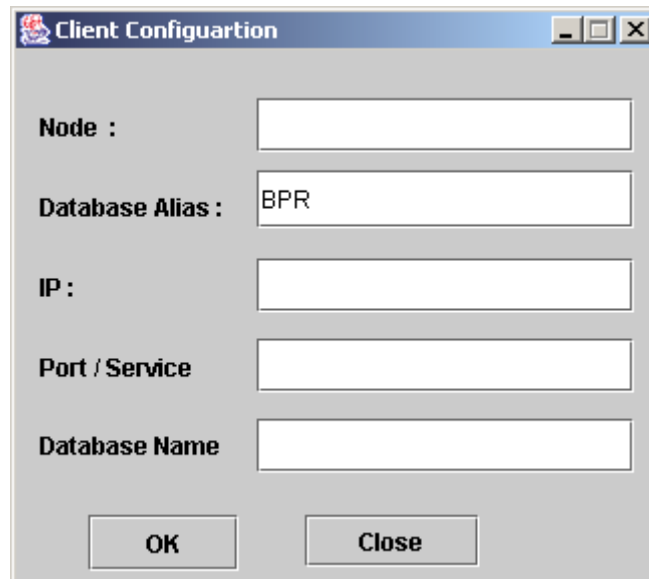
**You can use the batch files named *startBPRAppServer.bat* and *stopBPRAppServer.bat* (or *startBPRAppServer.sh* and *stopBPRAppServer.sh*) to start and stop this new Application Server**

## 3.2 Configure the Database Connection

If you are using **IBM DB2** as your Database Server, and you have the Web Application Server on which you will deploy the WBI Workbench Server and the Database Server installed on separate machines, then you need to configure the connection between these servers to let the WBI Workbench Server Application Server deployed on WebSphere connect to its database on the Database Server.

This is simply done by running the file named *ClientConfig.bat* on Windows platform or the file named *ClientConfig.sh* on AIX and Solaris platforms. These files are located in the **<WBServerHomeDir>\was4-wizard\dbclientconfig** folder for IBM WebSphere Application Server 4.0.2 or in **<WBServerHomeDir>\was5-wizard\dbclientconfig** folder for IBM WebSphere Application Server 5.0.

When you run this batch file, the **Client Configuration** window appears:

A screenshot of a Windows-style dialog box titled "Client Configuration". The dialog has a blue title bar with standard minimize, maximize, and close buttons. The main area is light gray and contains five labeled text input fields arranged vertically: "Node :", "Database Alias :", "IP :", "Port / Service", and "Database Name". The "Database Alias" field contains the text "BPR". At the bottom of the dialog are two buttons: "OK" and "Close".

1. Type the WBI Workbench Server database node name in the Node field.
2. The Database Alias displays the default WBI Workbench Server database Alias which is "BPR"
3. Type the name or the IP address of the Database Server machine in the IP field.
4. Type the port number or service name of the BPR database in the **Port / Service** field.
5. Type the WBI Workbench Server database name in the **Database Name** field.
6. Click **OK** to execute the configuration.
7. Click **Close** to close the window.

## 3.3 WBI Workbench Server Application Server Un-deployment

This section is used to completely un-deploy the WBI Workbench Server. To completely un-deploy the WBI Workbench Server perform the following steps:

1. Stop the created WBI Workbench Server Application Server (BPRAppServer).
2. Run the batch file named *BPRServerUninstall.bat* in Windows platform or the file named *bprserveruninstall.sh* in AIX or Solaris platforms that are located in the **<WBServerWorkDir>\Install** folder. This batch file (or shell file) will uninstall WBI Workbench Server automatically.
3. Delete all files in the **<WBServerWorkDir>** folder.

## 3.4 WBI Workbench Server Uninstallation

This section describes how to completely uninstall the WBI Workbench Server from your machine using the WBI Workbench Server Uninstallation Wizard in order to remove all folders and files that was installed by the WBI Workbench Server installation wizard. The WBI Workbench Server Uninstallation Wizard starts by running the jar file named ***uninstall.jar*** that is located in the **<WBServerHomeDir>\\_uninst** folder.

Before starting the WBI Workbench Server Uninstallation Wizard, make sure that the IBM jdk 1.3.0 is installed on your machine. Alternatively, you can use the IBM JDK shipped with IBM WebSphere Application Server.

To start the WBI Workbench Server Uninstallation Wizard:

1. Run the ***uninstall.jar*** file by doing the following:
  - In Windows platform:
    - \* Start a command prompt window.
    - \* Type the following in the command prompt and then press Enter:

```
java.exe -jar <WBServerHomeDir>\_uninst\uninstall.jar
```



If the **java.exe** is not your environment variable path then type the full path of **java.exe** (e.g. **C:\WebSphere\AppServer\java\bin\java.exe**)

- In AIX and Solaris platforms:
  - \* Start a terminal console using root.
  - \* Type the following in the command prompt and then press Enter:

```
java -jar <WBServerHomeDir>/_uninst/uninstall.jar
```



If the **java** is not your environment variable path then type the full path of **java** (e.g. **“/usr/WebSphere/AppServer/java/bin/java”** in AIX platform or **“/opt/WebSphere/AppServer/java/bin/java”** in Solaris platform)

2. Once you start the Uninstallation wizard, a **Welcome** dialog box appears. Click **Next** to continue through the wizard or click **Cancel** to exit the wizard.
3. The next screen contains the Home Directory on which the WBI Workbench Server was installed and the installed components that will be removed. Verify that these settings are correct, and then click **Next** to start removing the files and folders from your hard drive, **Back** to return to the previous step, or **Cancel** to exit the wizard.

4. After all files and folders are removed from your hard drive, the next screen will tell you that the Uninstallation Wizard has finished uninstalling the WBI Workbench Server from your system. Click **Finish** to exit the wizard.

## 3.5 Upgrading your Existing Version of WBI Workbench Server to the Recent Version

This section contains the required information about upgrading your existing version of WBI Workbench Server to the recent version. This includes upgrading the deployed version of WBI Workbench Server application on WebSphere Application Server, as well as upgrading the existing WBI Workbench Server database that already contains data stored in its tables to adhere to the latest modification in the current version of WBI Workbench Server 4.2.4 Fix Pack1 HotFix database, and migrate the stored data to the upgraded database.

The WBI Workbench Server (v4.2.4 Fix Pack1 HotFix) database holds organization files that are created with IBM WebSphere Business Integration (WBI) Workbench™ versions 4.2.3, 4.2.4, 4.2.4 Fix Pack1, and 4.2.4 Fix Pack1 HotFix. The BPM Repository supports adding organization files created by these WBI Workbench versions only. Organization files that were created by an earlier WBI Workbench version (v4.2.2 and earlier) should be converted first – using WBI Workbench version 4.2.3, 4.2.4, 4.2.4 Fix Pack1, or 4.2.4 Fix Pack1 HotFix - to one of these versions before adding them to the WBI Workbench Server database. Refer to the WBI Workbench Server User Guide for more information about adding organizations to the database.



**Important Note: The database migration to WBI Workbench Server 4.2.4 Fix Pack1 HotFix can be done only if the existing database belongs to these versions of WBI Workbench Server (v4.2.2, v4.2.3, v4.2.4, and v4.2.4 Fix Pack1). If the existing database belongs to an earlier version than v4.2.2 (version 4.2.1 and before), then you cannot migrate the database directly to the current version. In this case you must upgrade your existing database incrementally to version 4.2.2, by using the InstallServer Utility of this version to keep the history of the added processes versions. Afterwards, you can upgrade the database to the recent version of WBI Workbench Server.**



**Important Note: It is strongly recommended that you backup your existing database before you perform the migration steps.**

The WBI Workbench Server upgrade must be performed in the following sequence:

1. Un-deploy the existing version of WBI Workbench Server Application Server completely from the WebSphere Application Server. You can perform the un-deployment either automatically or manually.

Refer to the section entitled *WBI Workbench Server Application Un-Deployment* in this chapter for the detailed steps of automatic un-deployment of WBI Workbench Server Application. Refer also to the section with the same title in *Appendix A: Manual Deployment of WBI Workbench Server on WebSphere 4.0.2* and *Appendix B* of this guide: *Manual Deployment of WBI Workbench Server on WebSphere 5.0* of this guide for the detailed steps of the manual un-deployment of WBI Workbench Server Application.

2. Uninstall the previous version of WBI Workbench Server.

Refer to the section entitled *WBI Workbench Server Un-installation* in this chapter for the detailed steps of un-installing the WBI Workbench Server from your machine.

3. Delete the **<WBServerHomeDir>** directory.



**The above two steps of Uninstalling the previous version of WBI Workbench Server and Deleting the <WBServerHomeDir> directory are optional but are recommended. You can keep the previous installation and the existing <WBServerHomeDir> directory, and then the installation of the new version will overwrite the contents of this directory.**

4. Install the new version of the WBI Workbench Server on your machine using the WBI Workbench Server Installation Wizard.

Refer to the contents of the *install.html* file that is delivered with the package for instructions about how to start the WBI Workbench Server Installation Wizard.

5. Perform the Database Upgrade using the InstallServer utility. Refer to the section entitled *Updating an Existing Database with a New Version* in *Chapter 2 Creating the WBI Workbench Server Database* of the guide for the detailed steps of how to upgrade the existing WBI Workbench Server database.



**Important Note: The database migration retains the code page of the upgraded database. That means if the existing database that belongs to v4.2.3 has a specific code page (for example IBM-1252), then the upgraded database will still have the same code page. Therefore, if you intend to make the database accept data with multiple languages, then you must convert the database to have UTF-8 code page either before or after the migration. Please consult your Database Administrator for information about converting the code page of an existing database.**

6. Deploy the WBI Workbench Server Application that belongs to the new version of WBI Workbench Server after completing the upgrade of the database.



Refer to the section entitled *Automated Deployment of WBI Workbench Server Application Server on WebSphere* in this chapter for the detailed steps of automatic deployment of WBI Workbench Server Application Server. Refer also to *Appendix A: Manual Deployment of WBI Workbench Server on WebSphere 4.0.2* and *Appendix B: Manual Deployment of WBI Workbench Server on WebSphere 5.0.* of this guide for the detailed steps of the manual deployment of WBI Workbench Server Application Server.

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# Appendix A: Manual Deployment of WBI Workbench Server on WebSphere 4.0.2

This appendix describes the manual steps of deploying WBI Workbench Server on IBM WebSphere 4.0.2. Before starting these steps, it is assumed that the WBI Workbench Server Database and Event Queue Database with their Table Spaces are created and configured in IBM DB2.

The following conventions are used for all the instructions throughout this document:

- On AIX and Solaris platforms, use forward slash / instead of back-slash \ when writing paths
- **Important note:** The names and paths of folders and files are case sensitive.
- **Important note:** Make sure that the user you are using have all needed permissions. For example, using a user who has no permissions on WebSphere or the Database will fail to deploy the WBI Workbench Server.
- The following are a list of all abbreviations in the deployment steps:
  - \* **<WebSphere>** = The WebSphere home directory. e.g. C:\Websphere\AppServer
  - \* **<WBServerHomeDir>** = The WBI Workbench Server home directory. e.g. C:\Workbench\_Server
  - \* **<WBServerWorkDir>** = The WBI Workbench Server working directory. e.g. C:\BPR42
  - \* **<WebServerName>** = The name of the machine that hosts the Web server for which the WebSphere is configured. (Ex. The machine name on which the IBM HTTP Server or Microsoft IIS 4.0 or IIS 5.0 is installed)
  - \* **<ServerName>** = The name of the server on which the WBI Workbench Server will be installed.
  - \* **<DB2>** = The DB2 home directory. e.g. C:\SQLLIB
  - \* **<SQLSRVR>** = The MS SQL Server database server installation root directory
  - \* **<SQLJDBC>** = The MS SQL Server JDBC driver installation directory. (e.g. C:\Apps\SQL200JDBC)
  - \* **<ORACLE\_HOME>** = The path where the Oracle Database Server is installed. (E.g. C:\Oracle\Ora81)

# 1 WBI Workbench Server Deployment

## 1.1 Creating the Working Directory

In the Manual deployment of WBI Workbench Server, it is preferred to create a separate working directory other than the WBI Workbench Server home directory that was created after extracting the necessary folders and files through the WBI Workbench Server installation wizard (the default name and path of this home directory is C:\Workbench\_Server). However, you can use the home to be your working directory, and in this case change all references in the coming deployment steps that refer to the Working Directory to be replaced with the Home Directory.

To create the WBI Workbench Server Working Directory and copy the needed files and folder inside it:

1. Create a new folder with a different name from the home directory. (i.e. C:\BPR423 for Windows platform or /home/BPR423 for AIX and Solaris platforms)
2. Inside this working directory, create three new folders named **lib**, **server**, and **logs**.
3. Copy the following folders and files from the WBI Workbench Server Home Directory to the working directory you've just created as the following:
  - Copy the contents of the <WBServerHomeDir>\was4-wizard\lib folder to <WBServerWorkDir>\lib
  - Copy the <WBServerHomeDir>\was4-wizard\server\BPR\_Server.ear file to <WBServerWorkDir>\server

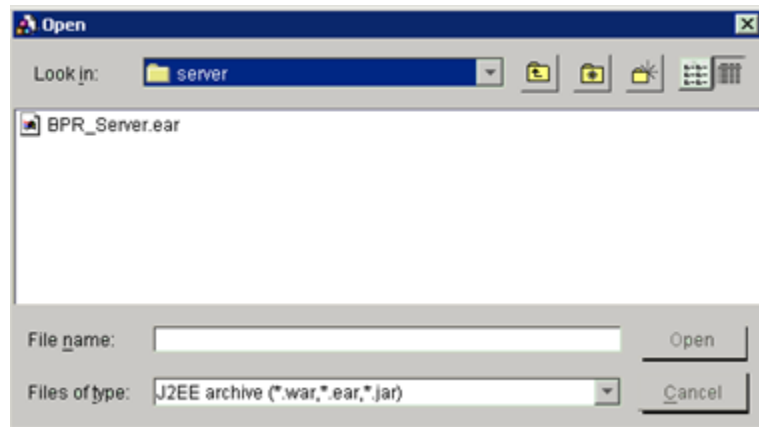
## 1.2 Adjust the WBI Workbench Server Parameters

The first thing you need to do in order to deploy WBI Workbench Server on WebSphere 4.0.2 is to adjust the WBI Workbench Server initial parameters. This can be done through the WebSphere Application Assembly Tool.

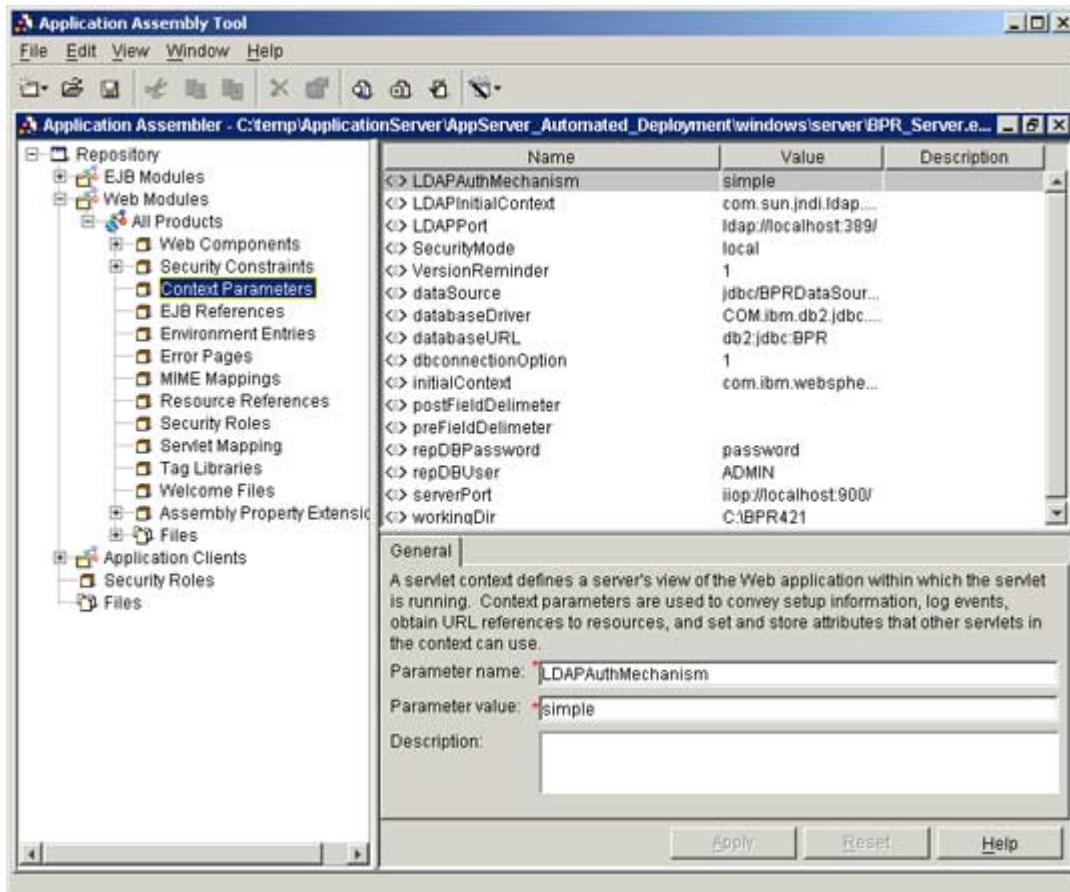
To adjust the WBI Workbench Server initial parameters:

1. Start the WebSphere Administrator's Console.
2. Select **Tools > Application Assembly Tools** from the menu.  
The Application Assembly Tool window opens.
3. Click Cancel to close the welcome screen.
4. Select **File > Open** from the menu.

The Open dialog box appears.



5. Select the *BPR\_Server.ear* file located in **<WBServerWorkDir>\server**
6. Expand the tree on the left and select **Repository>Web Modules > All Products > Context Parameters**.



7. Adjust the values of each parameter in the Parameters list on the right by selecting the parameters and change the parameter's value in the Parameter Value box.

- **repDBUser**: Type the user id for the user who can access the database and define new users

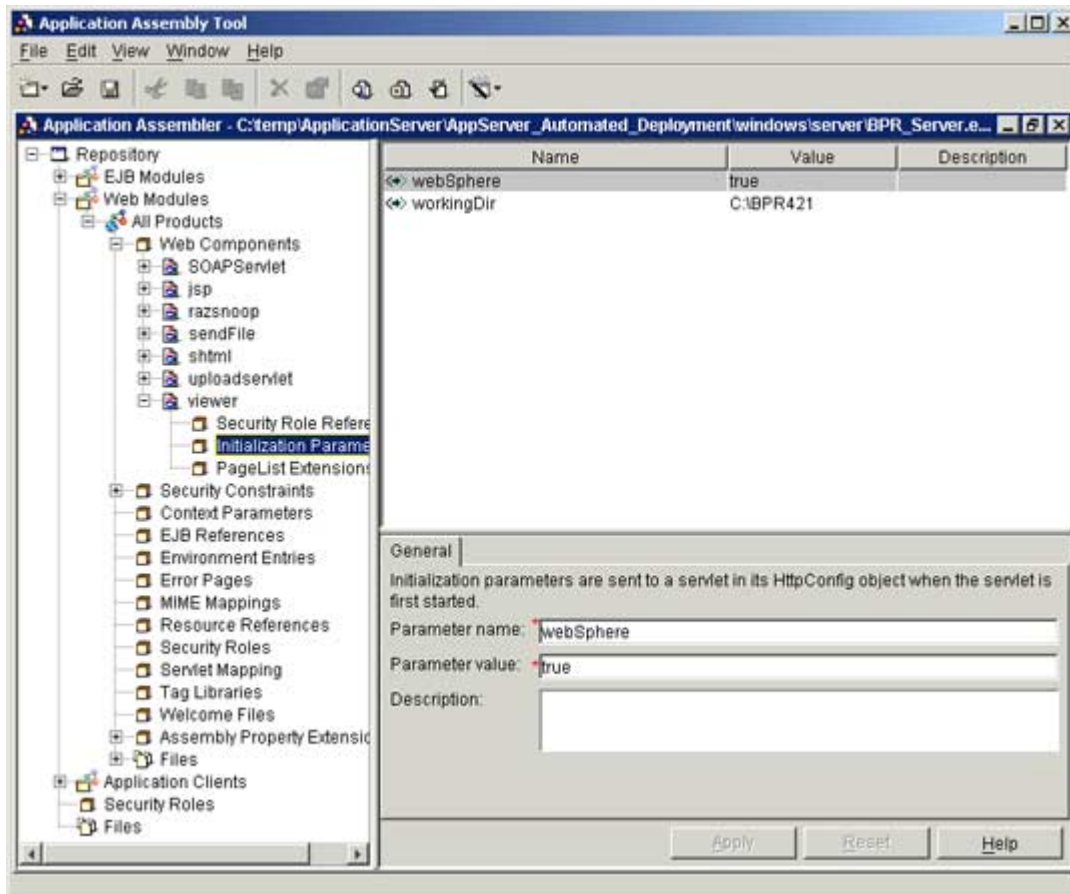
- \* For Oracle Database, it is preferably to use the *WFBPR* user that has been used to create the database tables.
- **repDBPassword**: Type the password for the user who can access the database and define new users
- **workingDir**.: type the full path of the working directory where the added organization files will be stored
- **LDAPAuthMechanism**: Type the LDAP authentication mechanism (*simple*)
- **LDAPInitialContext**: Type the LDAP Initial Context (e.g. *com.sun.jndi.ldap.LdapCtxFactory*)
- **LDAPPort**: Type the LDAP Server name and port number (e.g. *ldap://ldapsrvr:389/*)
  - \* For AIX and Solaris platforms, type the LDAP server IP address instead of the server name
- **dataSource**: Type the WBI Workbench Server data source name (e.g. *jdbc/BPRDataSource*)
- **databaseDriver**: Type the database driver implementation class:
  - \* For IBM DB2, type: *COM.ibm.db2.jdbc.app.DB2Driver*
  - \* For MS SQL Server, type: *com.microsoft.jdbc.sqlserver.SQLServerDriver*
  - \* For Oracle, type: *oracle.jdbc.driver.OracleDriver*
- **databaseURL**: Type the database URL
  - \* For IBM DB2, type: *jdbc:db2:BPR*
  - \* For MS SQL Server type: *jdbc:microsoft:sqlserver://<SQL\_Server\_Machine\_Name>:<Port\_Number>;DatabaseName=BPR* (e.g. *jdbc:microsoft:sqlserver://SQLMachine:1433;DatabaseName=BPR*)
  - \* For Oracle, type: *jdbc:oracle:thin:@<Oracle\_Server\_Machine\_Name>:<Port\_Number>;BPRORA1* (E.g. *jdbc:oracle:thin:@OraMachine:1521:BPRORA1*)
- **dbconnectionOption**: Type *0* if the database connection is local, or *1* if the database connection is Distributed (using WebSphere Data Sources)
  - \* If the database connection is Distributed then the defined user name and password in the **repDBUser** and **repDBPassword** parameters will be ignored and the user name and password that are defined for the data source in the application server will be used alternatively.
- **initialContext**: Type *com.ibm.ejs.ns.jndi.CNInitialContextFactory*
- **postFieldDelimiter**: Type the database post field delimiter (e.g. “*]*” for MS SQL Server, “*“*” for Oracle, or empty for IBM DB2)

- **preFieldDelimiter** Type the database pre field delimiter (e.g. "[" for MS SQL Server, " for Oracle, or empty for IBM DB2).
- **serverPort**: Type the name and port number of the server where the WebSphere is installed.  
(e.g. *iiop:/wassrvr:900/*)
- **SecurityMode**: Type the Security type you have (type either *local* or *ldap*)
- **VersionReminder**: Type *1* to display the version reminder message before checking out a process or *0* to hide this message.
- **LDAP\_User**: Type a Distinguished Name (DN) for an LDAP Server authorized user that will be used for logging in to this LDAP Server, and performing the search in the LDAP users tree.
- **LDAP\_Password**: Type the password of the defined User DN.
- **LDAP\_UID\_Attribute**: Type the name of the prefix that precedes the user ID in the LDAP Server database (i.e. CN, UID,...etc). The value of this parameter varies between the different types of LDAP Servers.
- **LDAP\_ROOT\_DN**: Type the starting point in the LDAP tree from which the query will start searching for the full DN of the given user ID.
- **LDAP\_DN\_Attribute**: Type the name of the Distinguished Name attribute ID (i.e. distinguishedName, entrydn, ...etc. This value is case sensitive).



**You have to click Apply after changing each parameter to save your change.**

8. Select **Repository>Web Modules > All Products >Web Components > viewer > Initialization Parameters**.



9. Adjust the values of the following two parameter in the Parameters list on the right by selecting the parameters and change the parameter's value in the Parameter Value box
  - **workingDir**: Type **<WBServerWorkDir>**
  - **WebSphere**: Type **true**



You have to click **Apply** after changing each parameter to save your change.

10. Select **File > Save** from the menu to save the *BPR\_Server.ear*.
11. Exit the **Application Assembly Tool** and the **WebSphere Administrator's Console**.

## 1.3 Configure IBM WebSphere



In Windows NT or Windows 2000, make sure that the **IBM WS AdminServer** service is started and running.



The purpose of these steps is to create and configure a new Application Server for WBI Workbench Server in WebSphere.

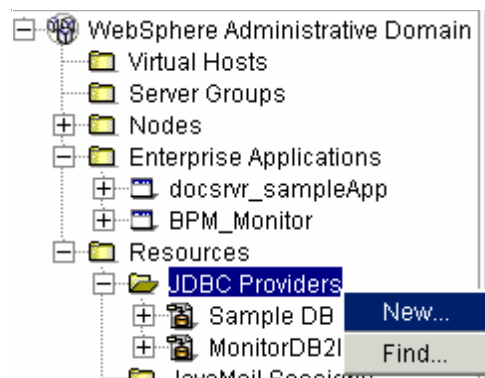
In order to perform this operation, start the WebSphere **Administrator's Console** and perform the following steps:

### 1.3.1 Create JDBC Provider and Data Sources

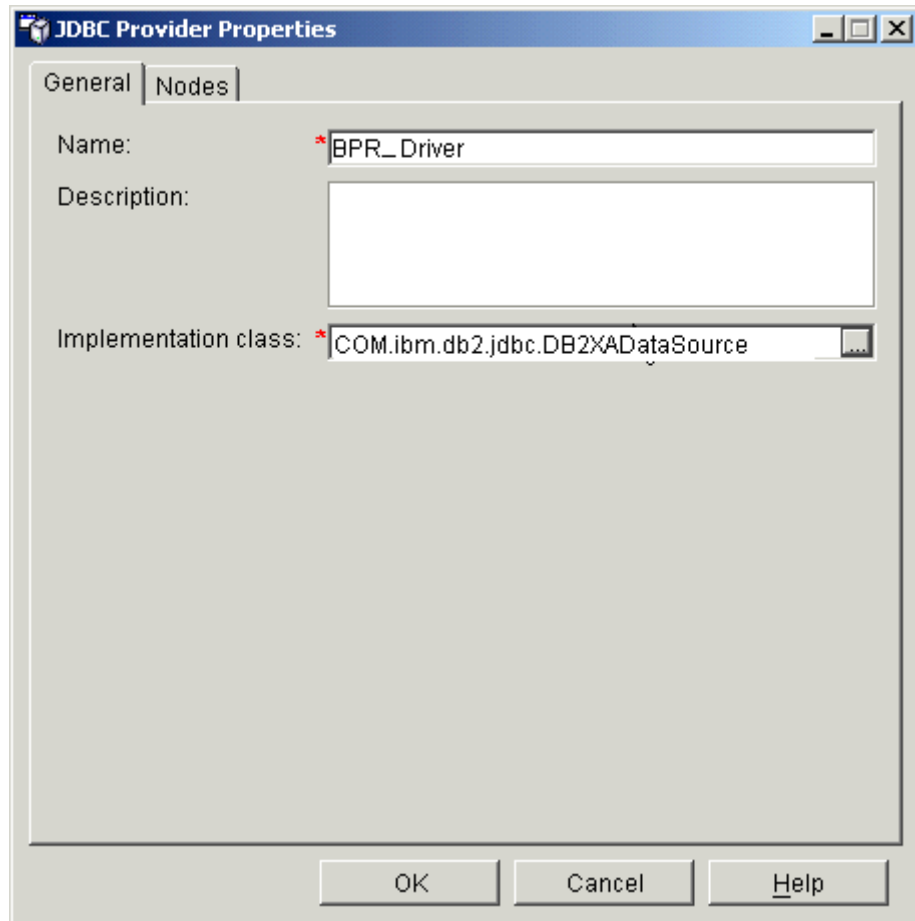
#### *Create and Install the JDBC Provider*

If a previous JDBC Provider is already created and installed, then you can skip the following steps for creating and installing the database drivers for the data source.

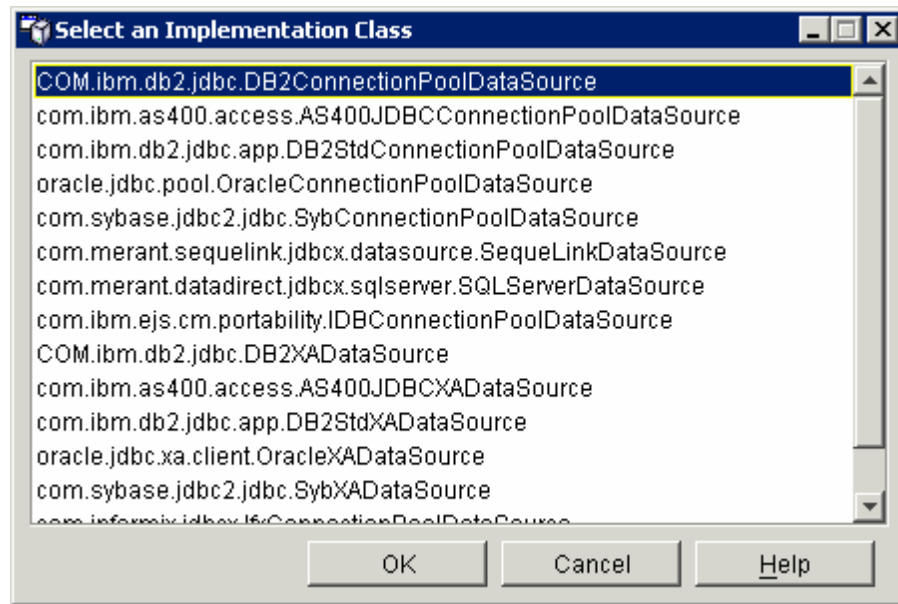
1. Create a JDBC Provider named **BPRDBDriver**:
  - Expand the **WebSphere Administrative Domain** tree, and select **Resources > JDBC Providers**
  - Right-click the **JDBC Providers** and select **New** from the shortcut menu that appears.



The **JDBC Provider Properties** dialog box appears:



- \* Type ***BPR\_Driver*** in the **Name** box.
- \* Click the **Browse** button (represented by triple dots) next to the **Implementation Class** field. The **Select an Implementation Class** dialog box appears.

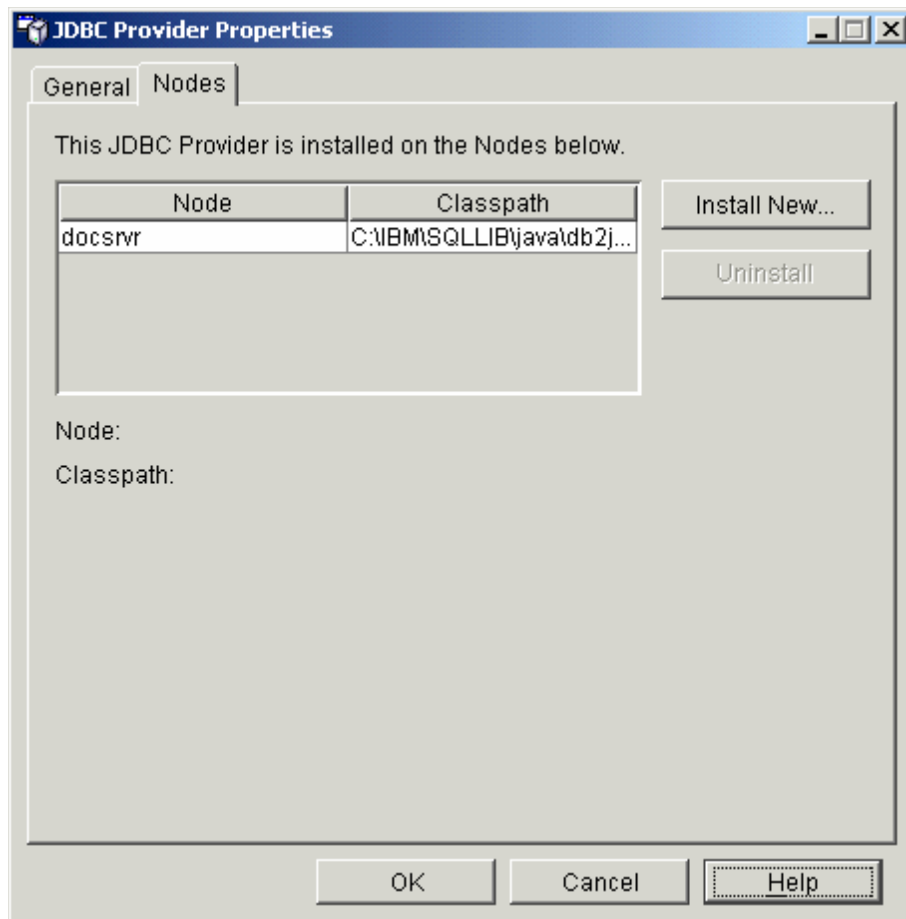


- For IBM DB2: Select  
***COM.ibm.db2.jdbc.DB2ConnectionPoolDataSource***
- For Oracle: Select  
***oracle.jdbc.pool.OracleConnectionPoolDataSource***
- For MS SQL Server: Type the following class in the Implementation Class field in the JDBC Provider Properties dialog box:  
***com.microsoft.jdbcx.sqlserver.SQLServerDataSource***

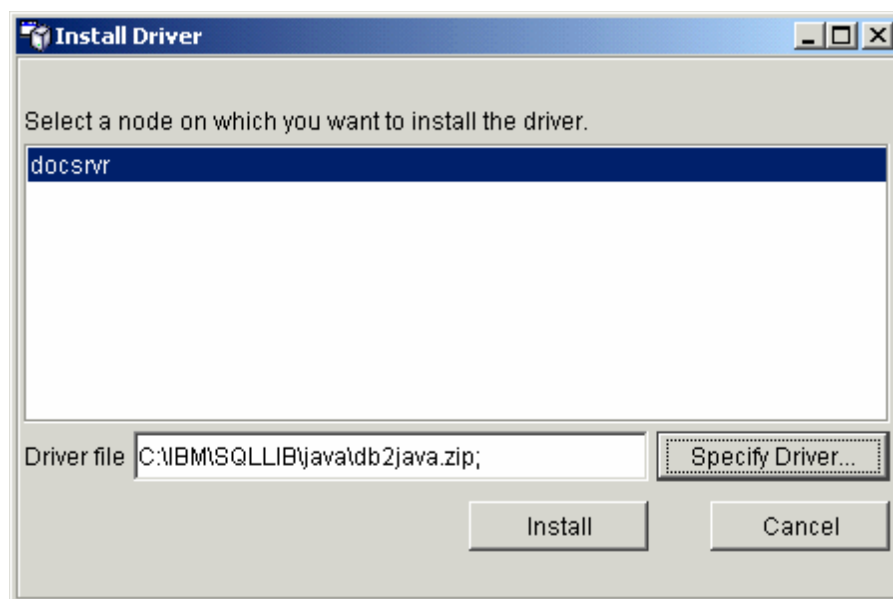
\* Click **OK**. The dialog box will close and you will return to the **JDBC Provider Properties** dialog box where the selected class appears in the **Implementation Class** field.

2. Install the **BPR\_Driver** JDBC Driver:

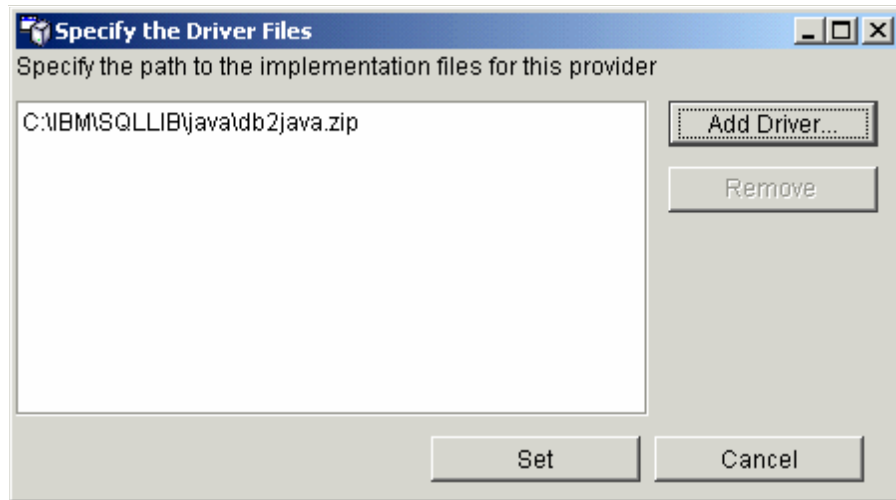
- While you are in the **JDBC Provider Properties** dialog box, select the **Nodes** tab.



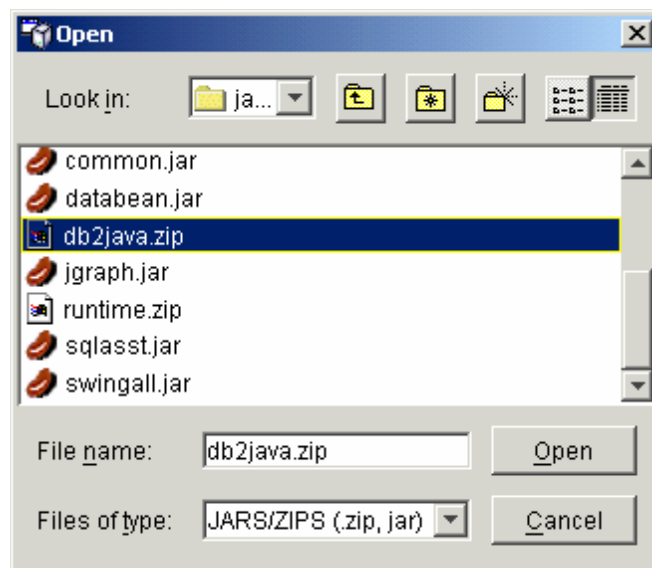
\* Click **Install New**, the **Install Driver** dialog box appears.



- \* Select <ServerName> from the Nodes list, and click **Specify Driver** in order to select a driver to be installed for the node. The **Specify the Driver Files** dialog box appears.



- \* Click **Add Driver**. The **Open** dialog box appears.



- \* Select the appropriate JDBC driver file for your database:
  - For IBM DB2, select the file named **db2java.zip** located in the <DB2>\java12 folder
  - For Oracle, select the file named **classes12.zip** located in the <ORACLE\_HOME>\jdbcVib folder.
  - For MS SQL Server, select the files named *mssqlserver.jar*, *msutil.jar*, and *msbase.jar* located under the *lib* folder inside the SQL Server JDBC Driver installation folder



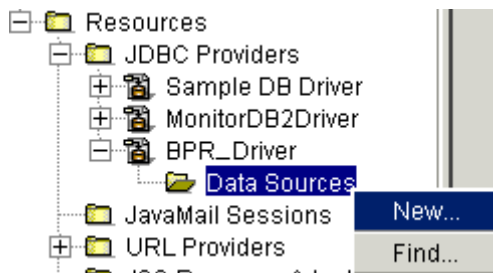
You need to select each file in a single step

- Click **Open**.
- \* Select the added driver in the **Specify the Driver Files** dialog box and click **Set**.
- \* Click **Install** in the **Install Driver** dialog box.
- \* Click **OK** in the **JDBC Provider Properties** dialog box. The **BPR\_Driver** will be created and installed.

### **Create the Data Source**

Create a data source to point to the Database and the Database Driver:

1. Create a data sources named **BPR\_DataSource**:
  - Expand the **WebSphere Administrative Domain** tree, and select **Resources > JDBC Providers > BPRDBDriver > Data Sources**
  - Right-click **Data Sources** and select **New** from the shortcut menu that appears.



The **Data Source Properties** dialog box appears:

The screenshot shows the 'Data Source Properties' dialog box with the 'Connection Pooling' tab selected. The 'Name' field contains 'BPR\_DataSource' with a red asterisk. The 'JNDI name' field contains 'jdbc/BPR\_DataSource'. The 'JDBC provider' field contains 'BPR\_Driver' with a red asterisk. Below these is a 'Custom Properties' section with a table. The table has two columns: 'Name' and 'Value'. It contains several rows, with the first three filled: 'databaseName' with value 'BPR', 'user' with value 'ADMIN', and 'password' with value '\*\*\*\*\*'. To the right of the table are 'Add' and 'Remove' buttons. At the bottom of the dialog is a 'Test Connection' button, and at the very bottom are 'OK', 'Cancel', and 'Help' buttons.

Name	Value
* databaseName	BPR
user	ADMIN
password	*****
connectionAttribute	
description	
language	
logWriter	

- \* Type *BPR\_DataSource* in the **Name** box.
- \* Type *jdbc/BPR\_DataSource* in the **JNDI name** box.
- \* In the **Custom Properties** table:
  - \* For IBM DB2:
    - Type *BPR* in the **Database Name** field.
    - Type the Database Administrator's user name and password in the **User** and **Password** fields. (These two fields are optional).
  - \* For Oracle:
    - Type *jdbc:oracle:thin:@<Database\_Machine\_Name>:<Database\_Port\_Number>;BPRORA1* in the **URL** field.
    - Type *WFBPR* in the the **User** field
    - Type *password* in the **Password** field (These two fields are optional).
  - \* For MS SQL Server:
    - Type *BPR* in the **Database Name** field.

- Type the Database Administrator's user name and password in the **User** and **Password** fields. (These two fields are optional).
- Type the server name and the port number of the server machine on which the MS SQL Server is installed in the **serverName** and **portNumber** fields respectively.
- Type *cursor* in the **selectMethod** field.

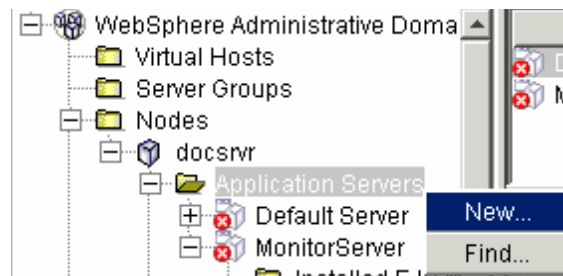


You can test the connection with the WBI Workbench Server Database with the entered user name or password by clicking **Test Connection**. If the Database name, user name or password is not correct, then you will be notified by a message. Otherwise, another message will confirm that the connection is successful.

### 1.3.2 Create a new Application Server

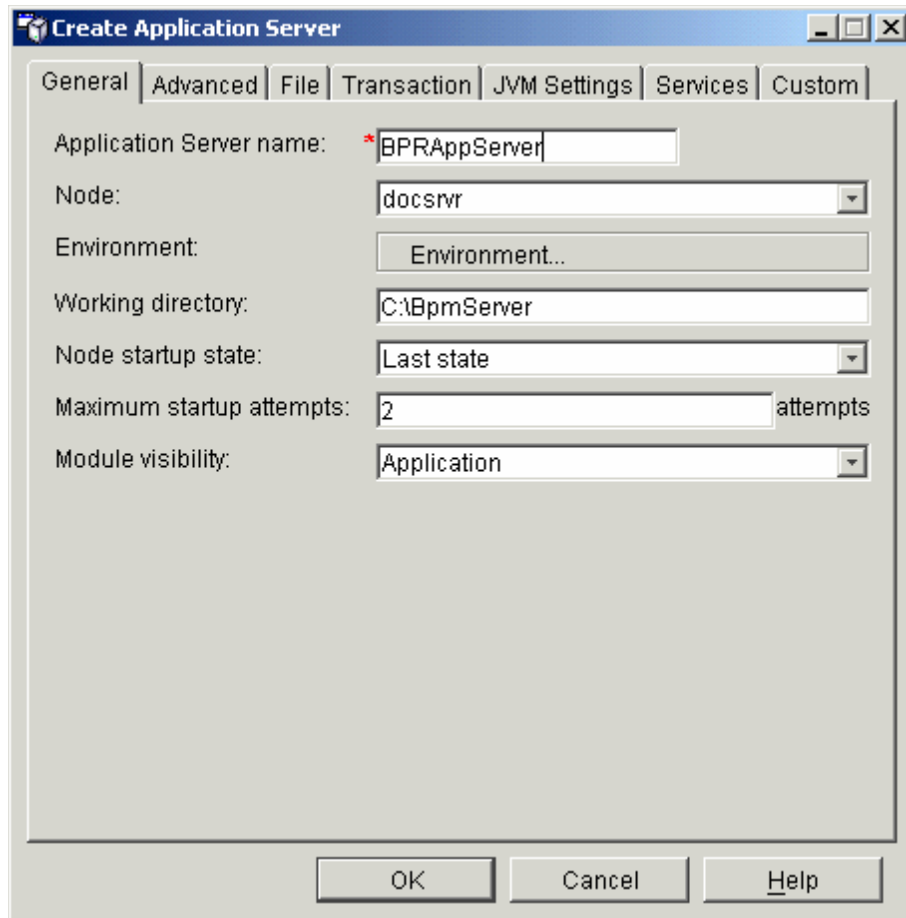
Now your next step is to create a new Application Server for WBI Workbench Server.

1. In the **WebSphere Administrative Domain** tree, right-click **Nodes** > **<ServerName>** > **Application Servers** and select **New** from the shortcut menu that appears.





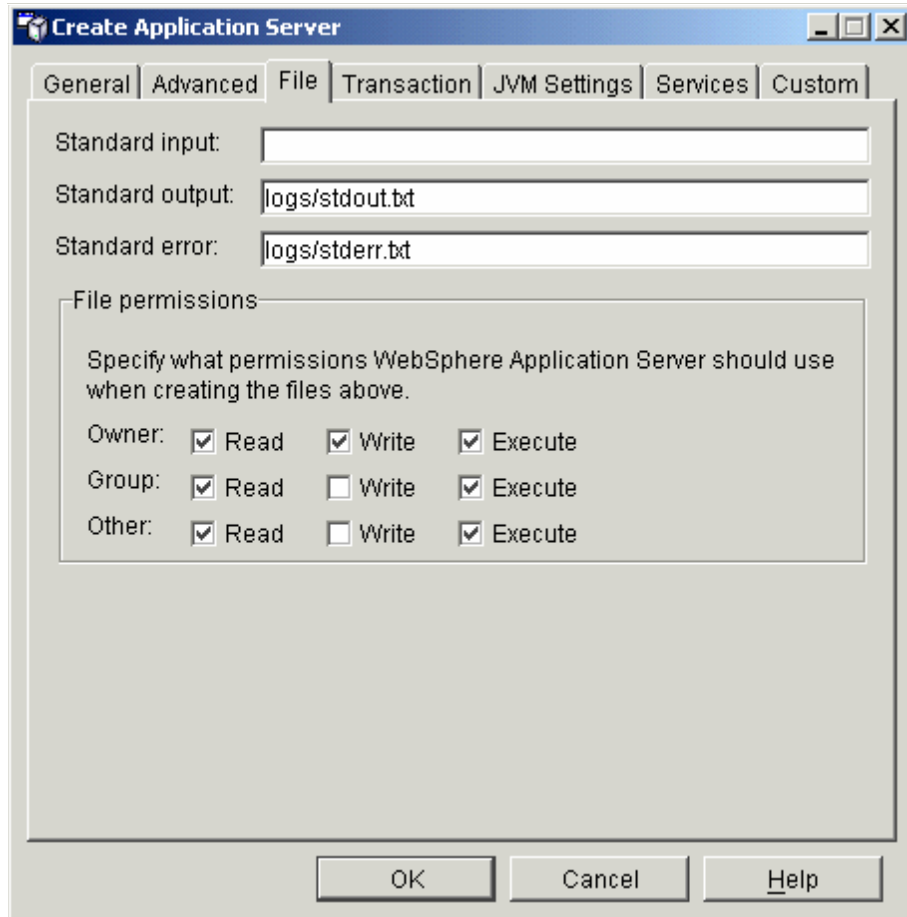
The **Create Application Server** dialog box appears.



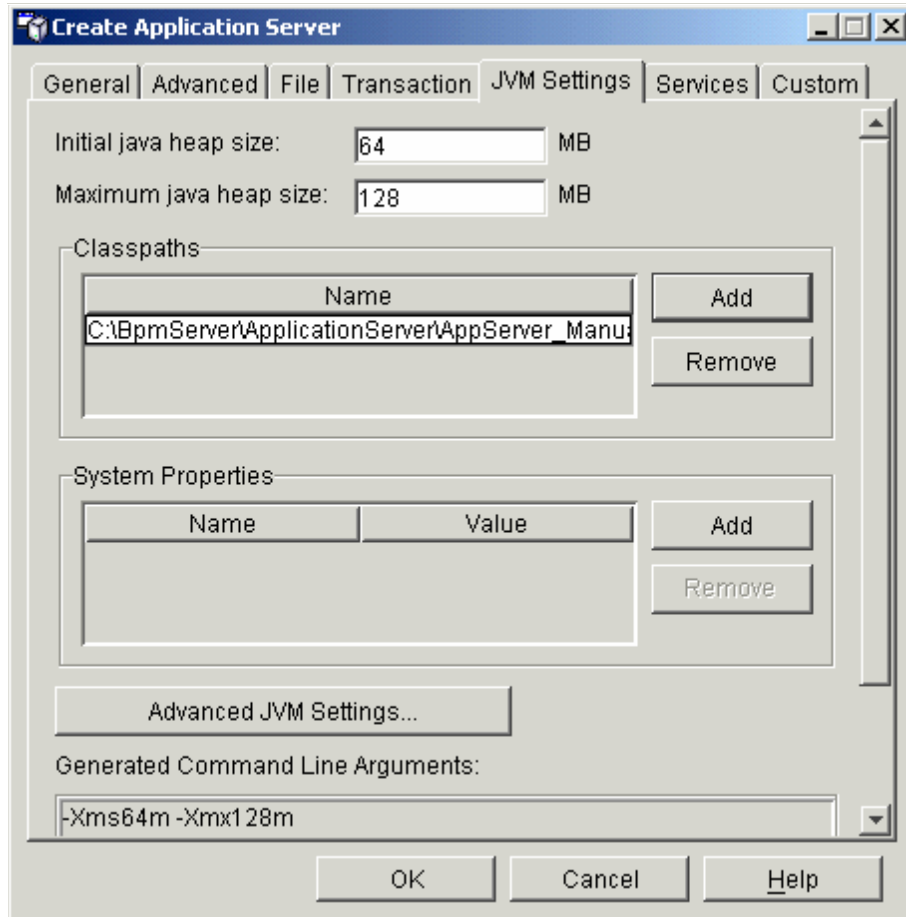
- In the **General** tab:

- \* In the **Application Server Name** box, type **BPRAppServer** .
- \* Select the <**ServerName**> node from the **Node** combo box if it is not displayed by default
- \* In the **Working Directory** box, type <**WBServerWorkDir**>
- \* In the **Module Visibility** combo box, select **Application**.
- \* Leave the other fields as default

- In the **File** tab:



- \* Leave the **Standard Input** box blank
  - \* In the **Standard Output** box, type *logs/stdout.txt*
  - \* In the **Standard Error** box, type *logs/stderr.txt*
  - \* Leave the check boxes in the **File Permissions** frame with their default settings.
- In the **JVM Settings** tab:



- \* In the **Initial java heap size** box, type **64**
- \* In the **Maximum java heap size** box, type **128**
- \* In the **Classpaths** frame click **Add**, then type the following command line as a single line with no spaces in the field added under the **Name** column:



In AIX and Solaris platforms, replace the semicolon (;) with colon (:)

**For IBM DB2, Type:**

```
<DB2>/java12/db2java.zip;<WebSphere>/lib/
J2ee.jar;<WebSphere>/lib/xerces.jar;<WBServerWorkDir>/lib/
security.jar;<WBServerWorkDir>/lib/
db.jar;<WBServerWorkDir>/lib/
WebSecurity.jar;<WBServerWorkDir>/lib/
publisher.jar;<WBServerWorkDir>/lib/
search.jar;<WBServerWorkDir>/lib/repository.jar
```

For Oracle, Type:

```
<ORACLE_HOME>/jdbc/lib/classes12.zip;<WebSphere>/lib/  
J2ee.jar;<WebSphere>/lib/xerces.jar ;<WBServerWorkDir>/lib/  
security.jar ;<WBServerWorkDir>/lib/db.jar  
;<WBServerWorkDir>/lib/WebSecurity.jar  
;<WBServerWorkDir>/lib/publisher.jar;<WBServerWorkDir>/lib/  
search.jar;<WBServerWorkDir>/lib/repository.jar
```

For MS SQL Server Type:

```
<WebSphere>/lib/J2ee.jar;<WebSphere>/lib/xerces.jar  
;<WBServerWorkDir>/lib/security.jar ;<WBServerWorkDir>/lib/  
db.jar ;<WBServerWorkDir>/lib/WebSecurity.jar  
;<WBServerWorkDir>/lib/publisher.jar ;<SQLJDBC>/lib/sqldrv/  
msutil.jar ;<SQLJDBC>/lib/sqldrv/msbase.jar ;<SQLJDBC>/lib/  
sqldrv/mssqlserver.jar;<WBServerWorkDir>/lib/  
search.jar;<WBServerWorkDir>/lib/repository.jar
```

\* In the **System Properties** frame click **Add**, a new blank row will be added in the **System Properties** table.

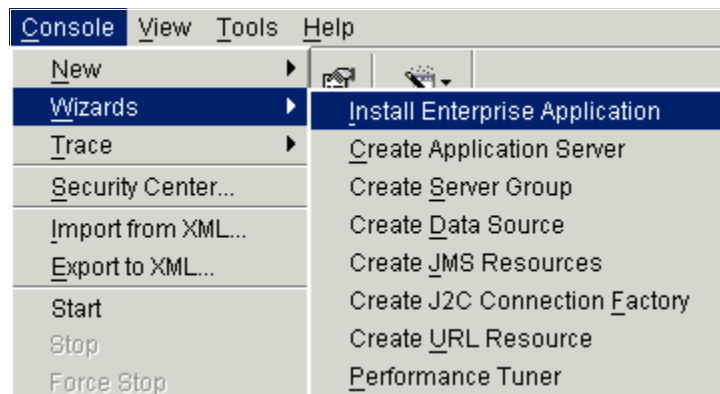
- Type *default.client.encoding* in the **Name** field.
- Type *UTF-8* in the **Value** field.

- Click **OK**. The new application server will be created.

### 1.3.3 Install the WBI Workbench Server Enterprise Application

Now you will create and install an Enterprise Application for WBI Workbench Server.

1. From the **Console > Wizards** menu, select **Install Enterprise Application**.



The **Install Enterprise Application Wizard** will start

2. In the **Specifying the Application or Module** screen:

**Install Enterprise Application Wizard**

**Specifying the Application or Module**

Specify the application(EAR file) or module(JAR or WAR file) that you want to install.  
If you install a stand-alone module, you must specify a new application name.

Browse for file on node: \* docsrvr

☒ Install Application (\*.ear)

Path: \* javal\_Deployment\server\BPR\_Server.ear Browse...

Application name: Repository

☐ Install stand-alone module (\*.war, \*.jar)

Path: \* Browse...

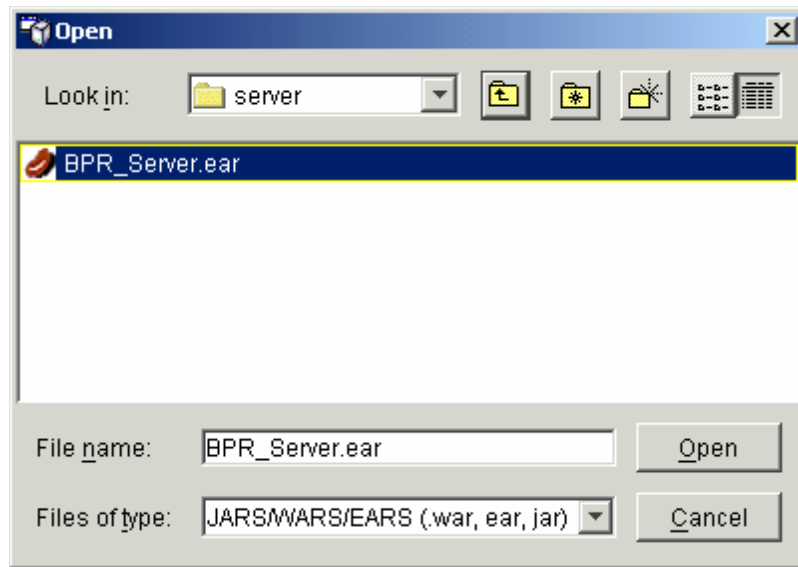
Application name: \* Browse...

Context root for web module: /

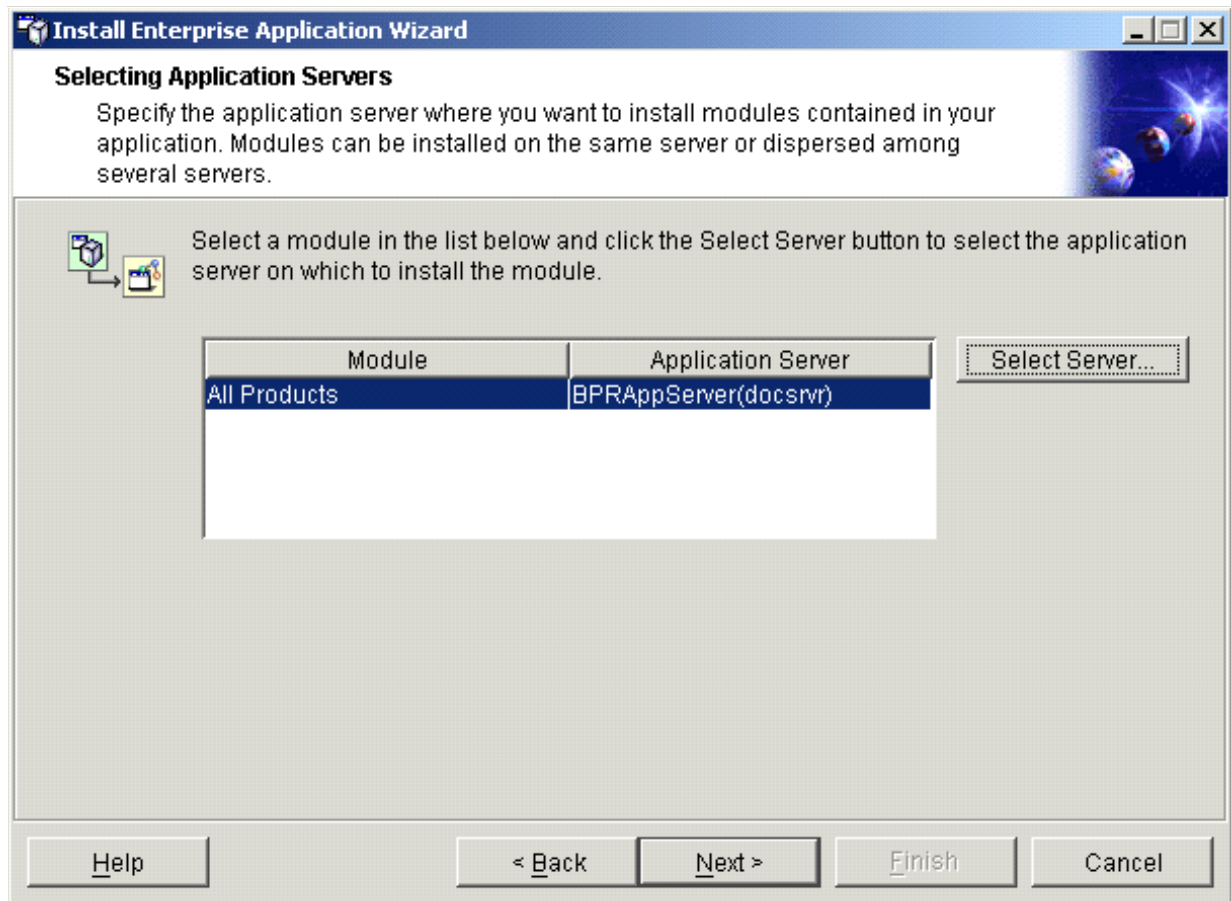
Help < Back Next > Finish Cancel

- Select the **<ServerName>** node from the **Browse for file on node:** combo box if it is not displayed by default.
- Select the **Install Application (\*.ear)** radio button.
- In the **Application name** box, type *Repository*

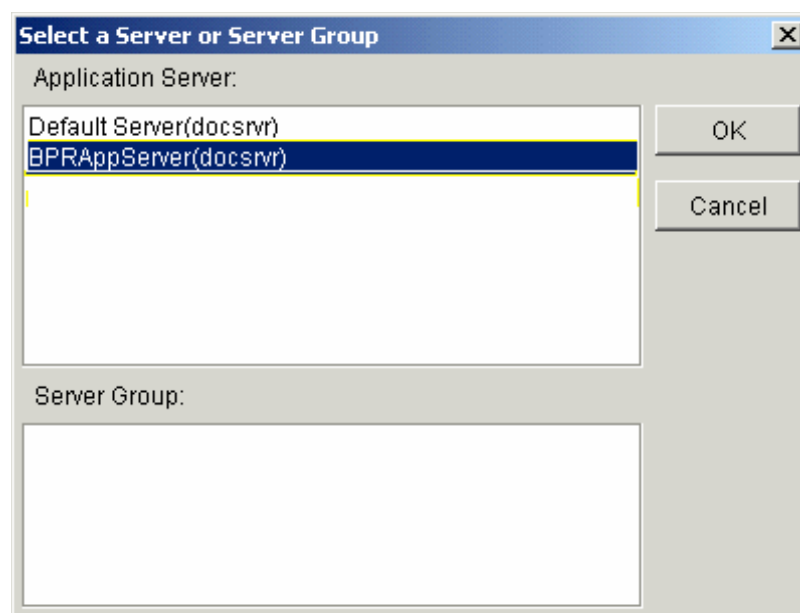
- Click the **Browse** button to locate the BPR\_Server.ear file. The **Open** dialog box appears.



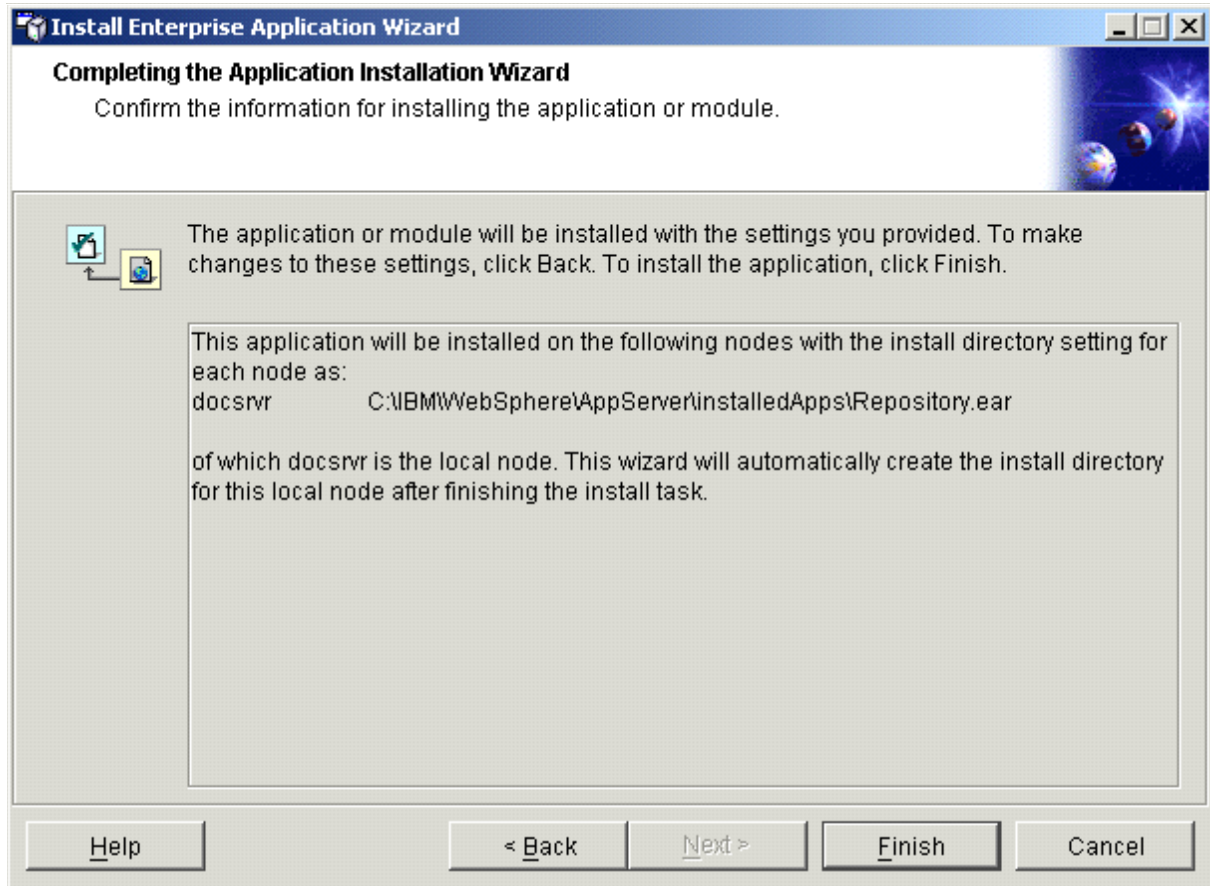
- \* Select the *BPR\_Server.ear* file located in **<WBServerWorkDir>\server**.
  - \* Click **Open**. The file will be selected and you will return to the **Specifying the Application or Module** screen
- Click **Next**.
3. In the **Mapping Users to Roles** screen, click **Next**.
  4. In the **Mapping EJB RunAs Roles to Users** screen, click **Next**.
  5. In the **Binding Enterprise Beans to JNDI Names** screen, click **Next**.
  6. In the **Mapping EJB References to Enterprise Beans** screen, click **Next**.
  7. In the **Mapping Resource References to Resources** screen, click **Next**.
  8. In the **Specifying the Default DataSource for EJB Module** screen, click **Next**.
  9. In the **Specifying DataSources for Individual CMP Beans** screen, click **Next**.
  10. In the **Selecting Virtual Hosts for Web Modules** screen, click **Next**.
  11. In the **Selecting Application Server** screen:



- Select **All Products** from the **Module** column.
- Click **Select Server**. The **Select a Server or Server Group** dialog box appears.



- Select **BPRAppServer(<ServerName>)** from the **Application Server** list and click **OK**.
  - Click **Next** in the **Selecting Application Server** screen.
12. In the **Completing Application Installation Wizard** screen, click **Finish**.



The new Enterprise Application will be installed.

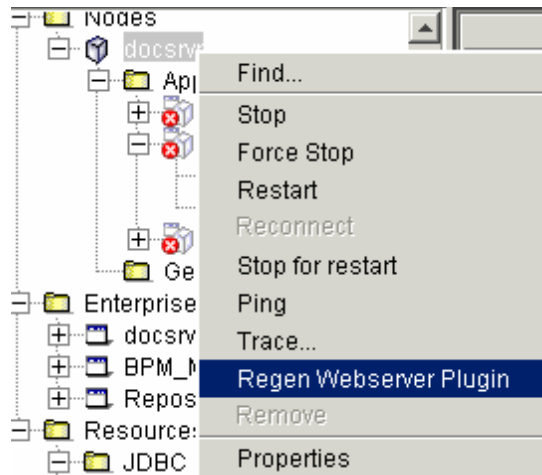
13. Wait until the confirmation message appears, and then click **OK**.

### 1.3.4 Regenerating Web Server Plug-in

Now you must regenerate the Web Server Plug-in to be adequate with the installed Enterprise Application. To regenerate the Web Server Plug-in:

1. In the **WebSphere Administrative Domain** tree, right-click **Nodes > <ServerName>** and select **Regen Webserver Plugin** from the shortcut menu that appears.





2. Wait until the confirmation message appears, and then click **OK**.
3. Restart the installed Web Server

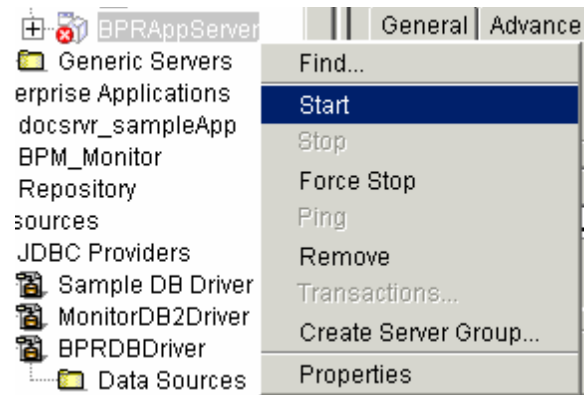
Example: If you installed IBM HTTP Server as the Web Server then do the following:

1. From the Windows Taskbar, select **Start > Programs > IBM HTTP Server > Stop IBM HTTP Server**.
2. Wait until the confirmation message that tells you that the IBM HTTP Server has been stopped.
3. From the Windows Taskbar, select **Start > Programs > IBM HTTP Server > Start IBM HTTP Server**.
4. Wait until the confirmation message that tells you that the IBM HTTP Server has been started.

### 1.3.5 Starting the Application Server

Now you must start the new Application Server. To do this:

1. In the **WebSphere Administrative Domain** tree, right-click **Nodes > <ServerName> > Application Server > BPRAppServer** and select **Start** from the shortcut menu that appears.

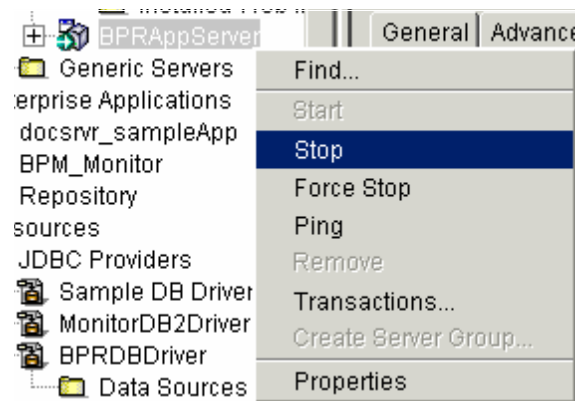


2. Wait until the confirmation message appears, and then click **OK**.

## 2 WBI Workbench Server Application Server Un-deployment

This section is used to completely un-deploy the WBI Workbench Server Application Server. To completely un-deploy the WBI Workbench Server perform the following steps:

1. Open the WebSphere Administrator's Console.
2. In the **WebSphere Administrative Domain** tree, right click **Nodes > <ServerName>> > Application Server > BPRAppServer** and select **Stop** from the shortcut menu that appears to stop the WBI Workbench Server Application Server.



3. In the **WebSphere Administrative Domain** tree, right click the **Enterprise Applications > Repository** and select **Remove** from the shortcut menu.
4. Right click the **Nodes > <ServerName>> > Application Server > BPRAppServer** and select **Remove** from the shortcut menu.
5. Remove the Data Sources (**BPRDataSource**).
6. Uninstall and remove the BPRDriver database driver.
7. Delete the file **BPR\_Server\_deployed.ear** from **<WebSphere>\Appserver\InstallableApps\**
8. Delete all files in the **<Server>** folder.



# Appendix B: Manual Deployment of WBI Workbench Server on WebSphere 5.0

This appendix describes the manual steps of deploying WBI Workbench Server on IBM WebSphere 5.0. Before starting these steps, it is assumed that the WBI Workbench Server Database and Event Queue Database with their Table Spaces are created and configured in IBM DB2.

The following conventions are used for all the instructions throughout this document:

- On AIX and Solaris platforms, use forward slash / instead of back-slash \ when writing paths
- **Important note:** The names and paths of folders and files are case sensitive.
- **Important note:** Make sure that the user you are using have all needed permissions. For example, using a user who has no permissions on WebSphere or the Database will fail to deploy the WBI Workbench Server.
- The following are a list of all abbreviations in the deployment steps:
  - \* **<WebSphere>** = The WebSphere home directory. e.g. C:\Websphere\AppServer or C:\Websphere\DeploymentManager
  - \* **<WBServerHomeDir>** = The WBI Workbench Server home directory. e.g. C:\Workbench\_Server
  - \* **<WBServerWorkDir>** = The WBI Workbench Server working directory. e.g. C:\BPR42
  - \* **<WebServerName>** = The name of the machine that hosts the Web server for which the WebSphere is configured. (Ex. The machine name on which the IBM HTTP Server or Microsoft IIS 4.0 or IIS 5.0 is installed)
  - \* **<ServerName>** = The name of the server on which the WBI Workbench Server will be installed.
  - \* **<DB2>** = The DB2 home directory. e.g. C:\SQLLIB
  - \* **<SQLSRVR>** = The MS SQL Server database server installation root directory
  - \* **<SQLJDBC>** = The MS SQL Server JDBC driver installation directory. (e.g. C:\Apps\SQL200JDBC)
  - \* **<ORACLE\_HOME>** = The path where the Oracle Database Server is installed. (E.g. C:\Oracle\Ora81)

# 1 WBI Workbench Server Deployment

## 1.1 Creating the Working Directory

In the Manual deployment of WBI Workbench Server, it is preferred to create a separate working directory other than the WBI Workbench Server home directory that was created after extracting the necessary folders and files through the WBI Workbench Server installation wizard (the default name and path of this home directory is C:\Workbench\_Server). However, you can use the home to be your working directory, and in this case change all references in the coming deployment steps that refer to the Working Directory to be replaced with the Home Directory.

To create the WBI Workbench Server Working Directory and copy the needed files and folder inside it:

1. Create a new folder with a different name from the home directory. (i.e. C:\BPR423 for Windows platform or /home/BPR423 for AIX and Solaris platforms)
2. Inside this working directory, create three new folders named **lib**, **server**, and **logs**.
3. Copy the following folders and files from the WBI Workbench Server Home Directory to the working directory you've just created as the following:
  - Copy the contents of the <WBServerHomeDir>\was5-wizard\lib folder to <WBServerWorkDir>\lib
  - Copy the <WBServerHomeDir>\was5-wizard\server\BPR\_Server.ear file to <WBServerWorkDir>\server

## 1.2 Configure IBM WebSphere

The manual deployment of WBI Workbench Server on WebSphere is done through the IBM WebSphere Administrative Console for either WebSphere Application Server v5.0 or WebSphere Deployment Manager (Network Deployment) v5.0. The difference between the deployment steps on each of these WebSphere products is that in WebSphere Deployment Manager (Network Deployment) v5.0 you have to select the node on which you will create the Application Server and deploy the WBI Workbench Server Enterprise Application. This is done at the beginning of each section steps that requires the node selection.

The following sections provide the detailed steps of the manual deployment of WBI Workbench Server on WebSphere:

## 1.2.1 Create JDBC Provider and Data Sources

### *Create and Install the JDBC Provider*

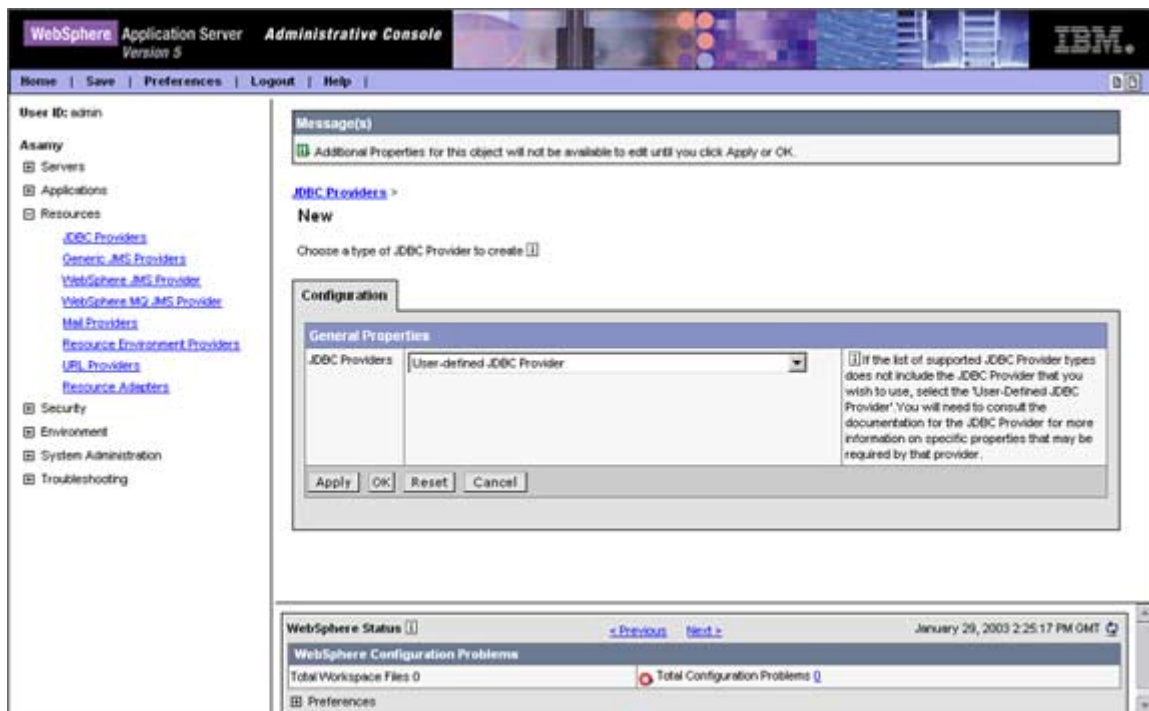
If a previous JDBC Provider is already created and installed, then you can skip the following steps for creating and installing the database drivers for the data source.

To create a JDBC Provider named **BPRDBDriver**:

1. From the left hand tree, select **Resources > JDBC Providers**. The **JDBC Provider** page appears in the right side of the window.

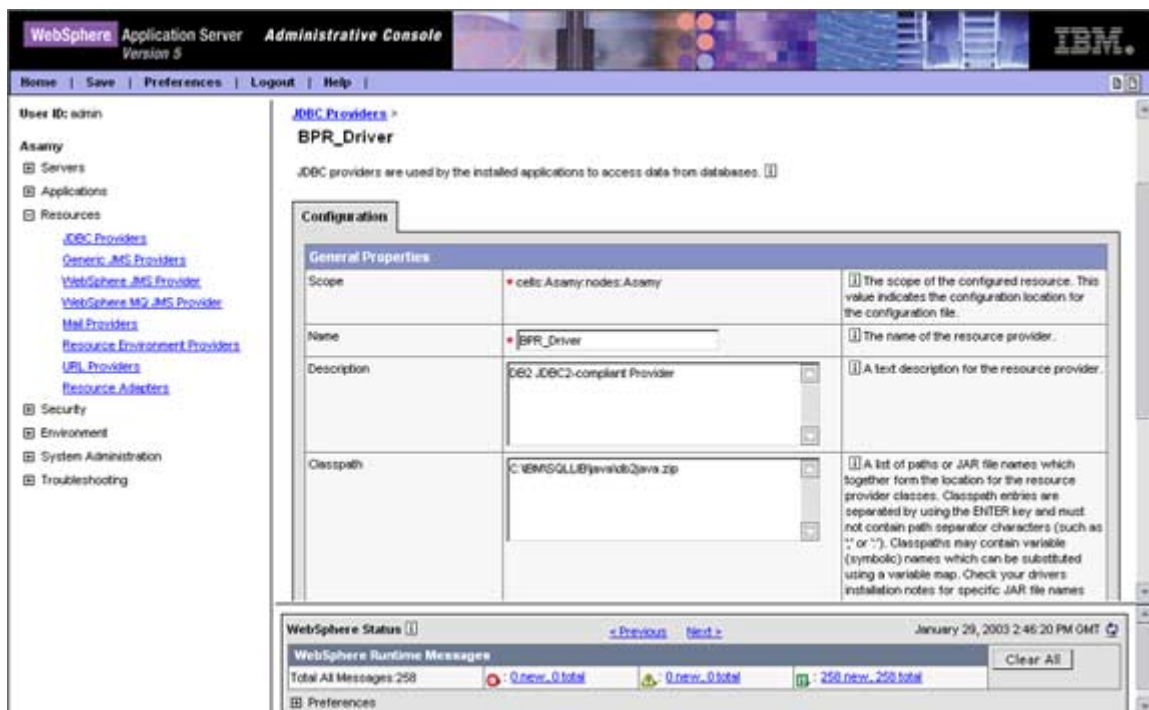


2. Click **New**. The **JDBC Provider > New** page appears.



- Select the JDBC Driver type from the **JDBC Providers** drop down list:
  - For IBM DB2 Database, select *DB2 JDBC Provider*
  - For Oracle Database, select *Oracle JDBC Thin driver*.
  - For MS SQL Server Database, select *Microsoft JDBC driver for MSSQLServer 2000*
3. Click **Apply**, the configuration page of the selected JDBC Provider type appears.





4. Type **BPR\_Driver** in the **Name** box.
5. Type a description for the new JDBC Provider in the **Description** box (Optional)
6. In the **Classpath** box, change the contents of this field to contain the path and name of the JDBC Driver file according to your Database Server type:
  - For IBM DB2, select the file named **db2java.zip** located in the **<DB2>java12** folder
  - For Oracle, select the file named **classes12.zip** located in the **<ORACLE\_HOME>jdbc\lib** folder
  - For MS SQL Server, select the files named **mssqlserver.jar**, **msutil.jar**, and **msbase.jar** located under the **lib** folder inside the SQL Server JDBC Driver installation folder



**You need to press Enter after typing the path and name of each file.**

- Click **OK**.
- Click **Save** in the top menu bar to save your changes. The **Save** page appears.



**For Network Deployment, it is preferred to select the Synchronize changes with nodes check box in the Save page.**

- Click **Save**.

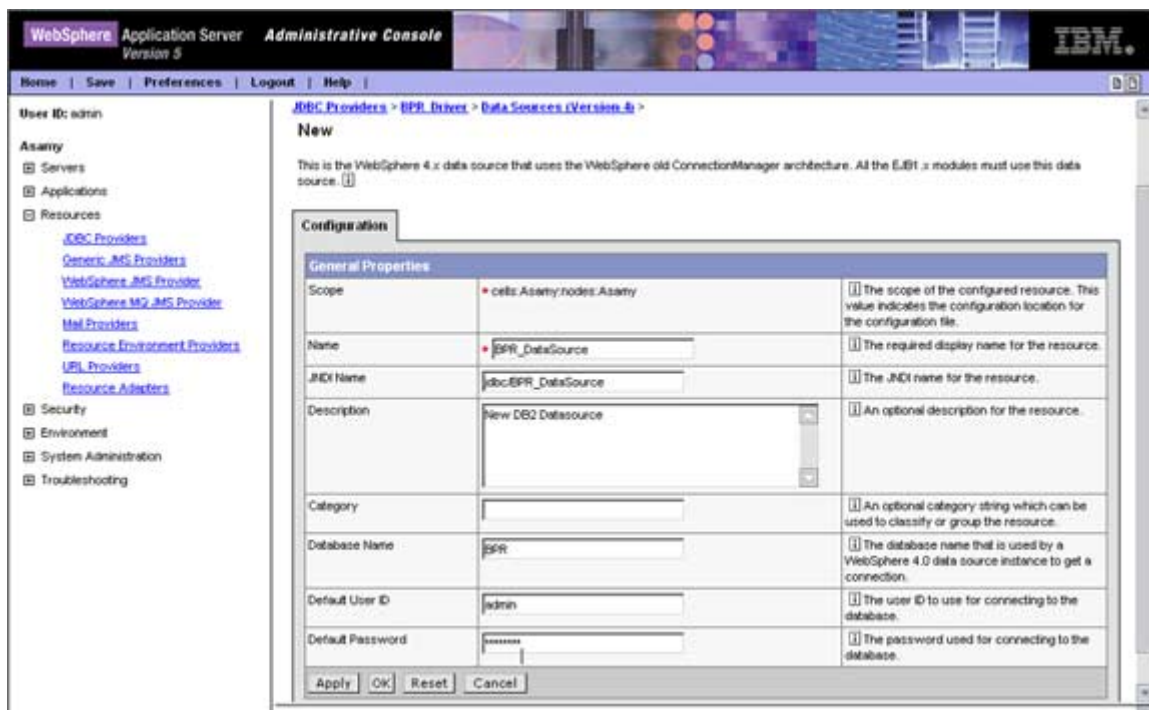
### **Create the Data Source**

To create a data source named **BPR\_DataSource** to point to the Database and the JDBC Provider:

1. From the left hand tree, select **Resources > JDBC Providers**. The **JDBC Providers** page appears on the right.
2. From the Existing JDBC Provider list, click the Hyperlink of the BPR\_Driver you have created. The configuration page of the BPR\_Driver appears.
3. From the Additional Properties section, click the **Data Sources (Version 4)** hyperlink. The **Data Sources (Version 4)** page appears.



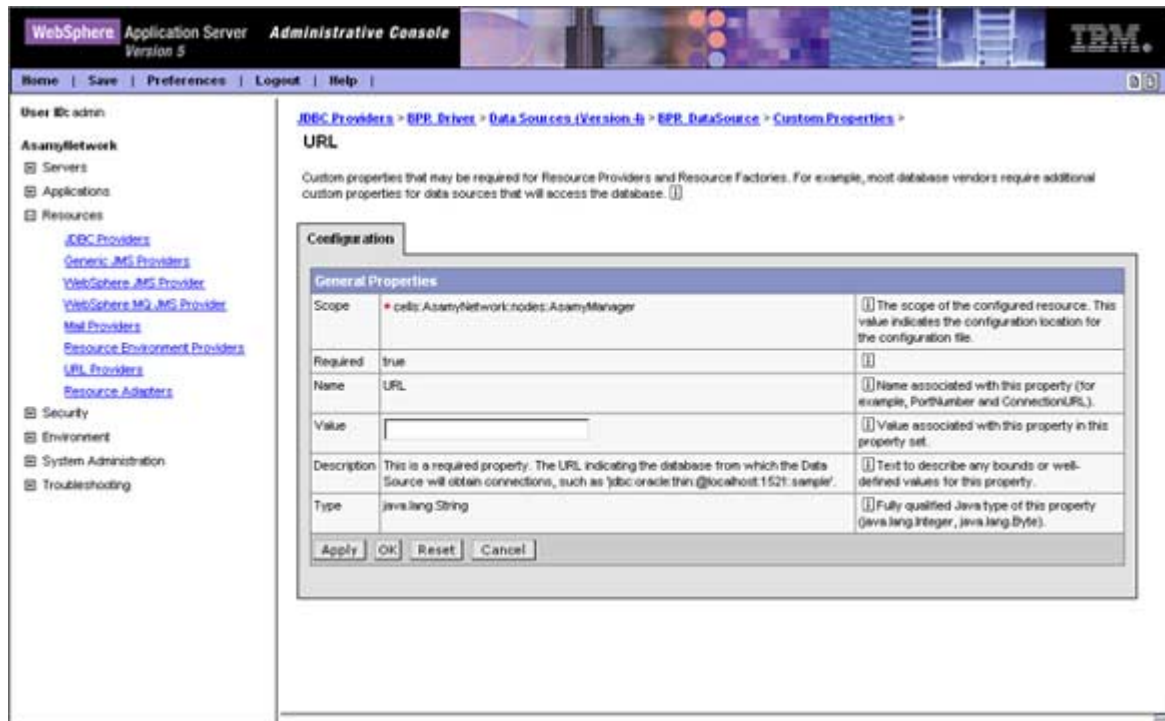
4. Click **New**. The Configuration page of the new Data Source appears.



5. Type **BPR\_DataSource** in the **Name** box.
6. Type **jdbc/BPRDataSource** in the **JNDI name** box.
7. For the rest of the properties do the following:
  - For IBM DB2:
    - \* Type **BPR** in the **Database Name** field.
    - \* Type the Database Administrator's user name and password in the **Default User ID** and **Default Password** fields.
  - For Oracle:
    - \* Leave the Database Name field empty.
    - \* Type **WFBPR** in the **User** field
    - \* Type the password of the WFBPR user in the **Password** field.
  - For MS SQL Server:
    - \* Type **BPR** in the **Database Name** field.
    - \* Type the Database Administrator's user name and password in the **Default User ID** and **Default Password** fields. (These two fields are optional).
8. Click **Apply**. The **Additional Properties** section appears in the bottom of the page.
9. If you are using Oracle or MS SQL Server, click the **Custom Properties** hyperlink.
10. In the **Custom Properties** page:

- For Oracle:

- \* Click the URL property hyperlink. The URL Properties page appears.



- \* In the Value field type **jdbc:oracle:thin:@<Database\_Machine\_Name>:<Database\_Port\_Number>:BPRORA1** in the URL field.
- \* Click **Apply**.

- For MS SQL Server:

- \* Click the **Server Name** property hyperlink. The **Server Name Properties** page appears.
- \* In the Value field type the server name.
- \* Click **Apply**.
- \* Click the **Port Number** property hyperlink. The **Port Number Properties** page appears.
- \* In the **Value** field type the port number of the server machine on which the MS SQL Server is installed in the.
- \* Click **Apply**.
- \* Make sure that the value of the **selectMethod** property is *cursor*.

11. Click **Save** in the top menu bar to save your changes. The **Save** page appears.

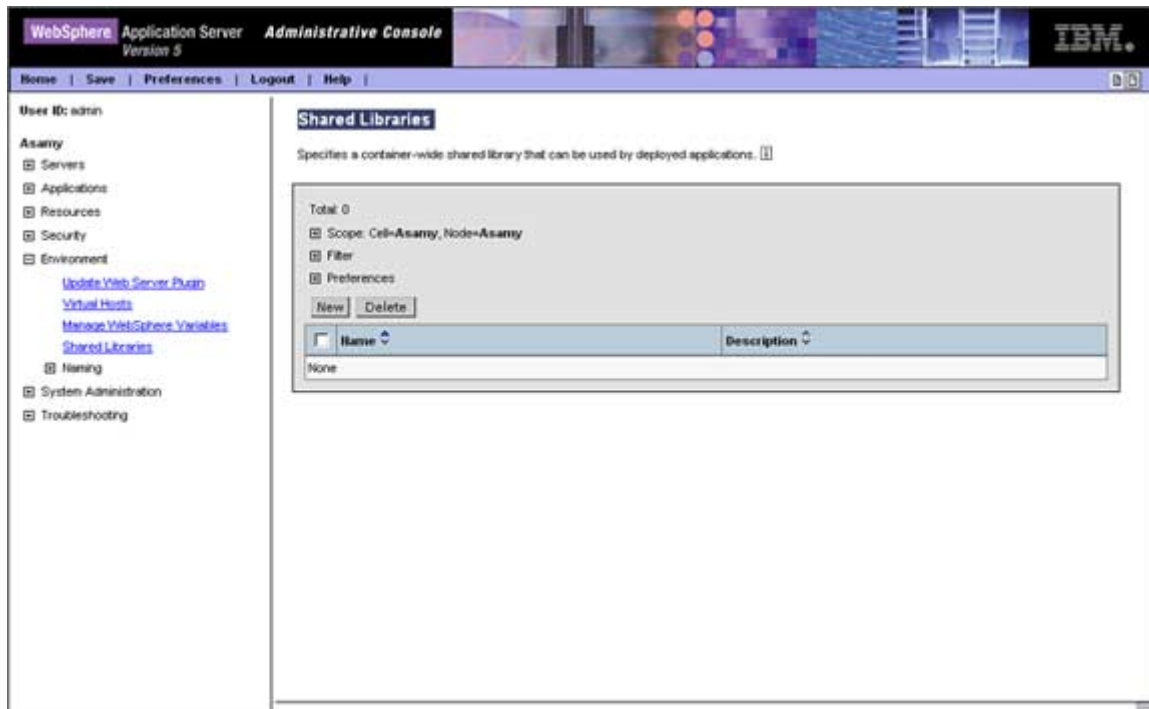


**For Network Deployment, it is preferred to select the Synchronize changes with nodes check box in the Save page.**

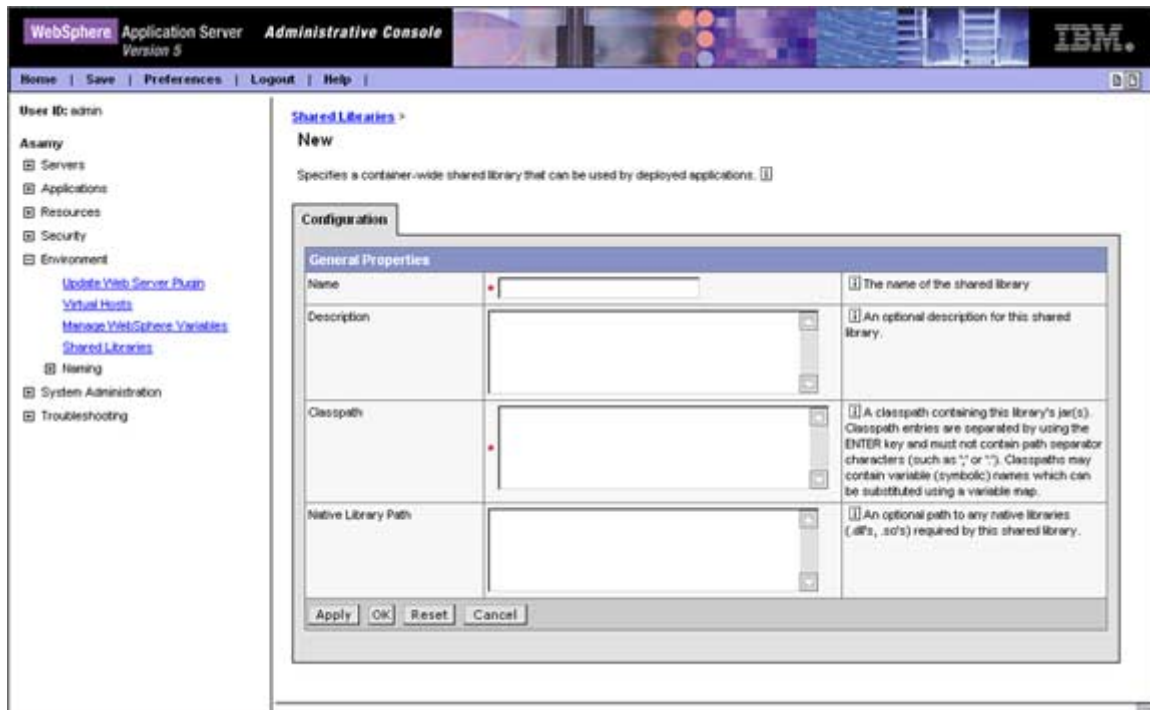
12. Click **Save**.

## 1.2.2 Create a new Shared Library

1. In the left hand tree expand the **Environment** node
2. Select the **Shared Library** hyperlink. The Shared Libraries page appears.



- Click **New**. The configuration page of the new Shared Library appears.



- Type **BPRLib** in the **Name** box.
- Type a description for the new shared library in the **Description** box (Optional).
- In the **Classpath** box, enter the following files names and paths followed by Enter:
  - For IBM DB2, Type:  
`<DB2>/java12/db2java.zip`  
`<WBServerWorkDir>/lib/security.jar`  
`<WBServerWorkDir>/lib/db.jar`  
`<WBServerWorkDir>/lib/WebSecurity.jar`  
`<WBServerWorkDir>/lib/publisher.jar`  
`<WBServerWorkDir>/lib/search.jar`  
`<WBServerWorkDir>/lib/repository.jar`
  - For Oracle, Type:  
`<ORACLE_HOME>/jdbc/lib/classes12.zip`  
`<WBServerWorkDir>/lib/security.jar`  
`<WBServerWorkDir>/lib/db.jar`  
`<WBServerWorkDir>/lib/WebSecurity.jar`  
`<WBServerWorkDir>/lib/publisher.jar`

<WBServerWorkDir>/lib/search.jar

<WBServerWorkDir>/lib/repository.jar

- For MS SQL Server Type:

<WBServerWorkDir>/lib/security.jar

<WBServerWorkDir>/lib/db.jar

<WBServerWorkDir>/lib/WebSecurity.jar

<WBServerWorkDir>/lib/publisher.jar

<SQLJDBC>/lib/sqldrv/msutil.jar

<SQLJDBC>/lib/sqldrv/msbase.jar

<SQLJDBC>/lib/sqldrv/mssqlserver.jar

<WBServerWorkDir>/lib/search.jar

<WBServerWorkDir>/lib/repository.jar



7. Click **OK**

8. Click **Save** in the top menu bar to save your changes. The **Save** page appears.



For Network Deployment, it is preferred to select the Synchronize changes with nodes check box in the Save page.



9. Click **Save**.

### 1.2.3 Create a new Application Server

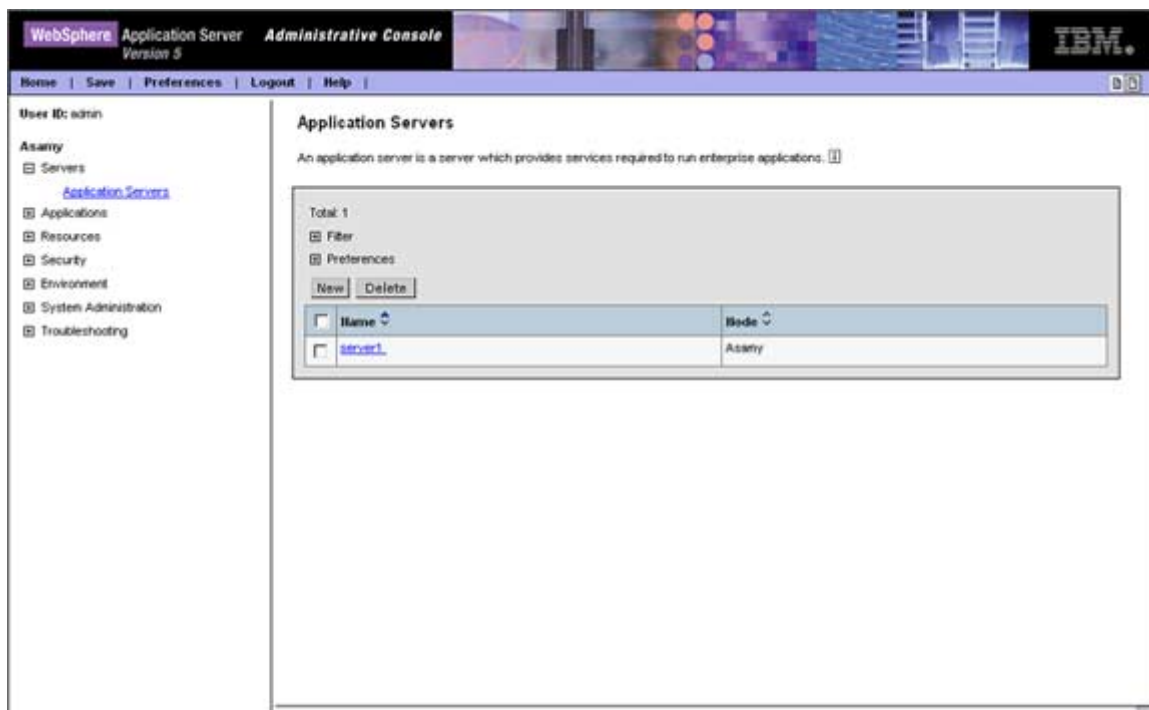
The following steps describe how to create a new Application Server named BPRAppServer, on which you will deploy the WBI Workbench Server Enterprise Application.



**You can skip creating this new Application Server and then you can deploy the WBI Workbench Server Enterprise Application on the Base Server (server1).**

To create a new Application Server for WBI Workbench Server:

1. From the Left hand tree, expand the **Servers** node.
2. Click the **Application Servers** hyperlink. The **Application Servers** page appears.





3. Click **New**. The **Create New Application Server** wizard appears.

The screenshot shows the 'Create New Application Server' wizard in the WebSphere Administrative Console. The left sidebar contains a navigation tree with 'Servers' expanded and 'Application Servers' selected. The main panel displays 'Step 1: Select an application server template'. It includes a 'Select node' dropdown set to 'AsamylAsamyl', a 'Server name' text field containing 'BPRAppServer', a checked 'Generate Unique Http Ports' checkbox, and a 'Select template' section with 'Default application server template' selected and 'server1' chosen from the dropdown. A 'Next' button is at the bottom left. To the right of the form, explanatory text states that the selected node determines available server processes and that unique port numbers will be generated to avoid conflicts.

4. Type **BPRAppServer** in the **Server name** field.
5. Leave the other fields with their default values.
6. Click **Next**. The Confirmation Page appears.

The screenshot shows the 'Create New Application Server' wizard at 'Step 2: Confirm new application server'. The left sidebar remains the same. The main panel provides a summary of the selections: a new application server 'BPRAppServer' will be created on node 'AsamylAsamyl'. It also lists a 'Possible issue' regarding memory requirements for the node. At the bottom, there are 'Previous', 'Finish', and 'Cancel' buttons. The 'Finish' button is highlighted, indicating it is the next action.

7. Click **Finish**. The new Application Server will be created and its name will be added to the **Application Servers** list in the **Application Servers** page.
8. Click **Save** in the top menu bar to save your changes. The **Save** page appears.



**For Network Deployment, it is preferred to select the Synchronize changes with nodes check box in the Save page.**

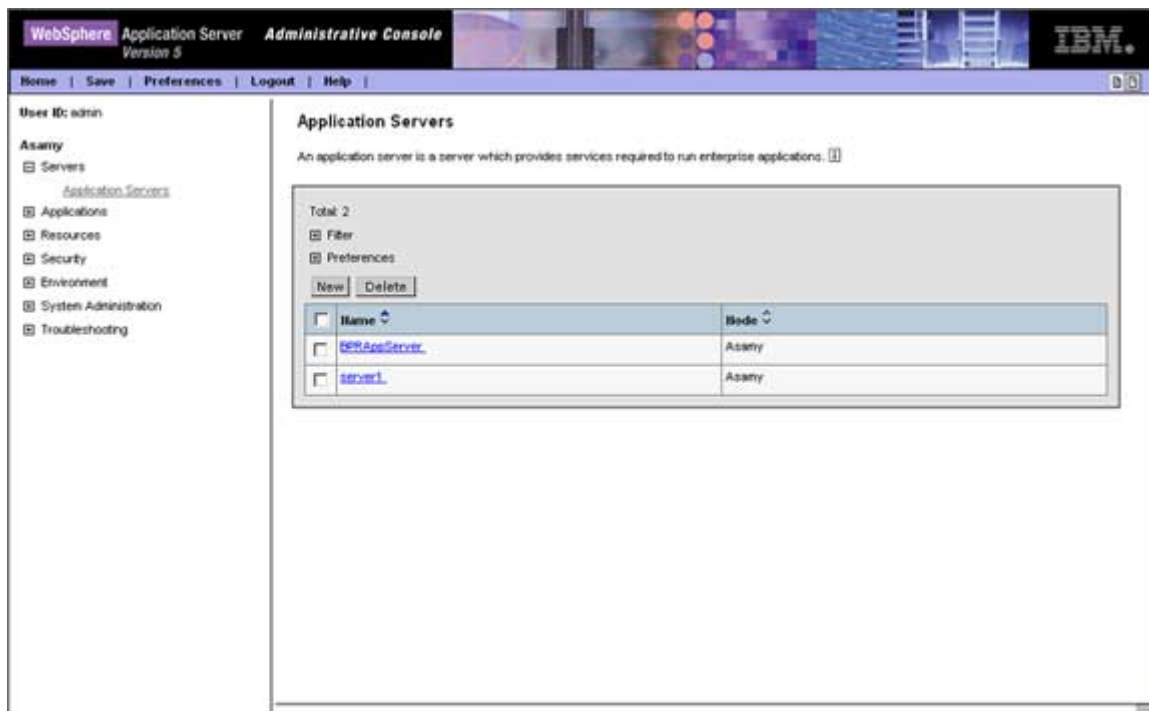
9. Click **Save**.

## 1.2.4 Configuring the New Application Server

After creating the BPRAppServer application Server, you need to configure its parameters. If you intend to deploy the WBI Workbench Server Enterprise Application on the default Application Server (Base Server) named server1, then it is preferable to adjust this Application Server with the settings in this section's steps. However you can use the Base Server with its default settings.

To configure the BPRAppServer:

1. From the Left hand tree, expand the **Servers** node.
2. Click the **Application Servers** hyperlink. The **Application Servers** page appears.



- Click the **BPRAppServer** hyperlink in the Application Servers list. The **BPRAppServer Application Server Configuration Page** appears.

The screenshot shows the WebSphere Administrative Console interface. The left sidebar contains a navigation tree with 'Application Servers' selected. The main content area is titled 'BPRAppServer' and includes a description: 'An application server is a server which provides services required to run enterprise applications.' Below this is a 'Configuration' tab with two sections: 'General Properties' and 'Additional Properties'.

General Properties		
Name	BPRAppServer	The display name for the server.
Initial State	Started	The execution state requested when the server is first started.
Application classloader policy	Multiple	Specifies whether there is a single classloader for all applications ("Single") or a classloader per application ("Multiple").
Application class loading mode	Parent first	Specifies the class loading mode when the application classloader policy is "Single".

Buttons: Apply, OK, Reset, Cancel

Additional Properties	
<a href="#">Transaction Service</a>	Specify settings for the Transaction Service, as well as manage active transaction locks.
<a href="#">Web Container</a>	Specify thread pool and dynamic cache settings for the container. Also, specify session manager settings such as persistence and tuning parameters, and HTTP transport settings.
<a href="#">EJB Container</a>	Specify cache and datasource information for the container.
<a href="#">Dynamic Cache Service</a>	Specify settings for the Dynamic Cache service of this server.
<a href="#">Logging and Tracing</a>	Specify Logging and Trace settings for this server.
<a href="#">Message Listener Service</a>	Configuration for the Message Listener Service. This service provides the Message Driven Bean (MDB) listening process, whereby MDBs are deployed against ListenerPorts that define the JMS destination to listen upon. These Listener Ports are defined within this service along with settings for its Thread Pool.
<a href="#">ORB Service</a>	Specify settings for the Object Request Broker Service.

- Click the **Process Definition** hyperlink. The **Process Definition** configuration page appears.

The screenshot shows the 'Process Definition' configuration page. It includes a warning message: 'The server may need to be restarted for these changes to take effect.' The page is titled 'Process Definition' and includes a description: 'A process definition defines the command line information necessary to start/initialize a process.' Below this is a 'Configuration' tab with two sections: 'General Properties' and 'Additional Properties'.

General Properties		
Executable name	%JAVA_HOME%\bin\java	Specifies the executable name of the process.
Executable arguments		Specifies executable commands that run when the process starts.
Working directory	C:\BPR42	Specifies the file system directory in which the process will run.

Buttons: Apply, OK, Reset, Cancel

Additional Properties	
<a href="#">Java Virtual Machine</a>	Advanced Java virtual machine settings.
<a href="#">Process Execution</a>	A set of properties that control how the operating system process executes, such as RunAs permissions, Unask, process priority.
<a href="#">Process Logs</a>	A set of properties that control how the process native input/output streams are directed.
<a href="#">Environment Entries</a>	A list of settings to be added to the execution environment for the process.
<a href="#">Monitoring Policy</a>	A set of properties that control how the process is monitored by the node agent.

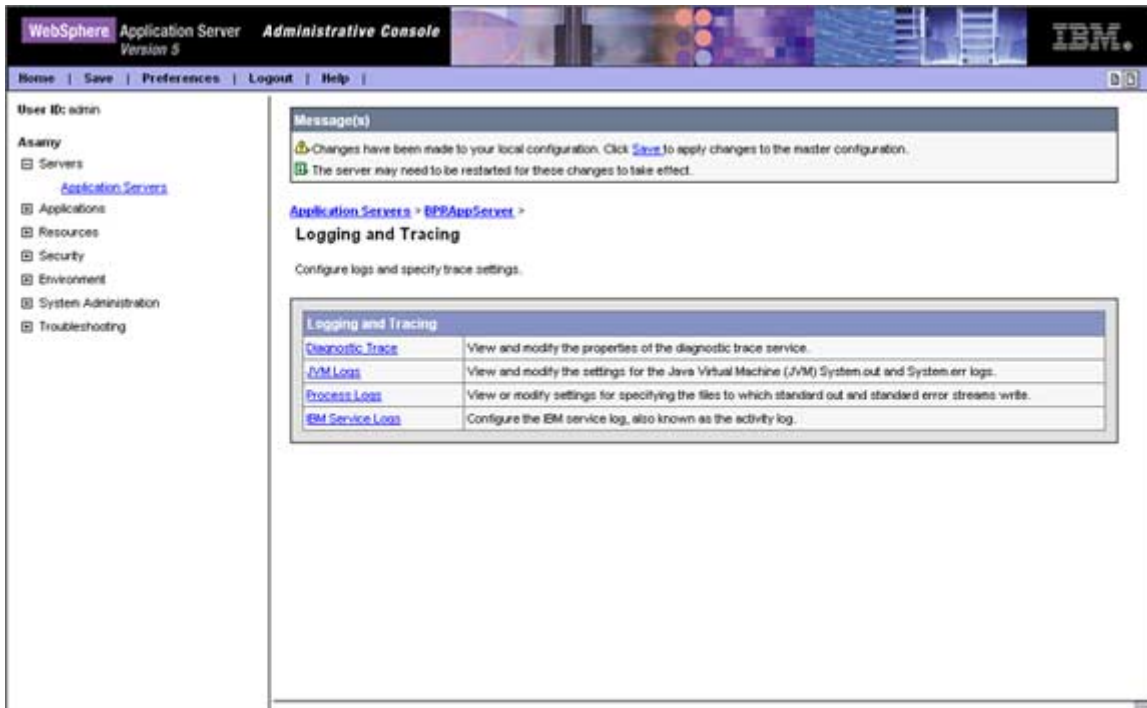
- In the **Working Directory** box, type **<WBServerWorkDir>**
- Leave the other fields with their default values.

- Click **Apply**.
- Click the **Java Virtual Machine** hyperlink. The **Java Virtual Machine** configuration page appears.

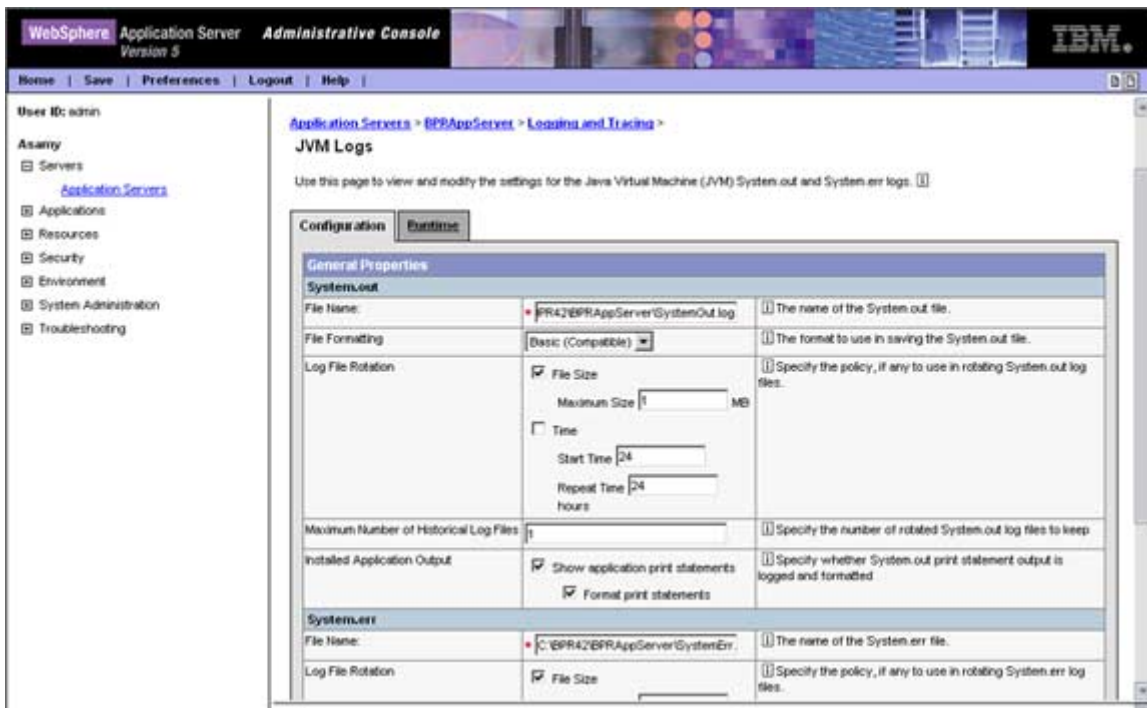


- \* In the **Initial heap size** box, type 64
- \* In the **Maximum heap size** box, type 128
- \* In the **Generic JVM arguments** box, type `-Ddefault.client.encoding=UTF-8`
- \* Click OK.
- Click the **BPRAppServer** hyperlink in the top of the page to return to the **BPRAppServer Configuration Page**.

- Click the **Logging and Tracing** hyperlink. The **Logging and Tracing** configuration page appears.



- Click the **JVM Logs** hyperlink. The **JVM Logs Configuration Page** appears.



- \* In the **System.out** section change the value in the **File Name** field to contain the following: **<WBServerWorkDir>/logs/SystemOut.log**
  - \* In the **System.err** section change the value in the **File Name** field to contain the following: **<WBServerWorkDir>/logs/SystemErr.log**
  - \* Click **OK**.
5. Click **Save** in the top menu bar to save your changes. The **Save** page appears.



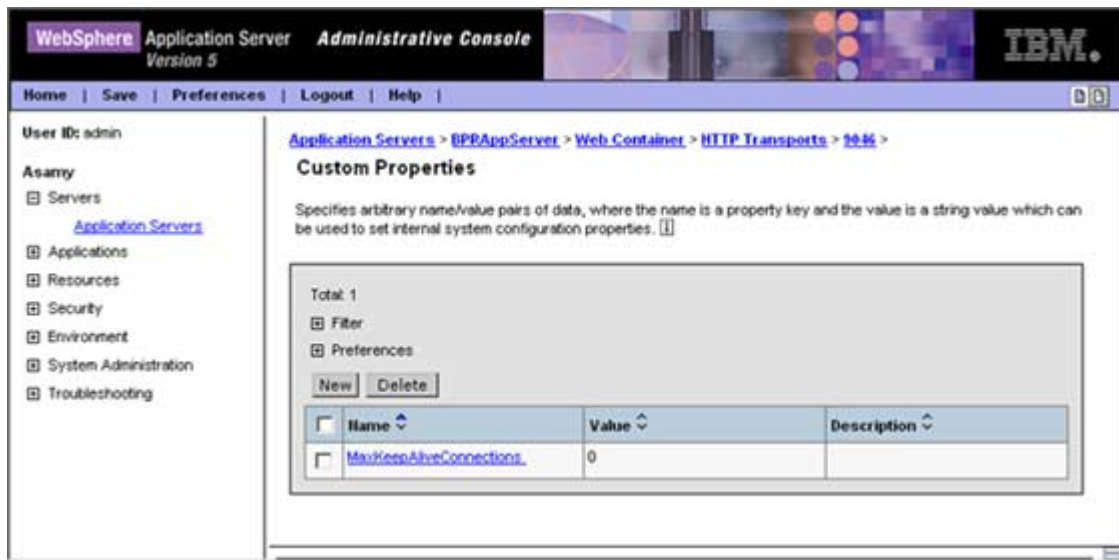
**For Network Deployment, it is preferred to select the Synchronize changes with nodes check box in the Save page.**

6. Click **Save**.

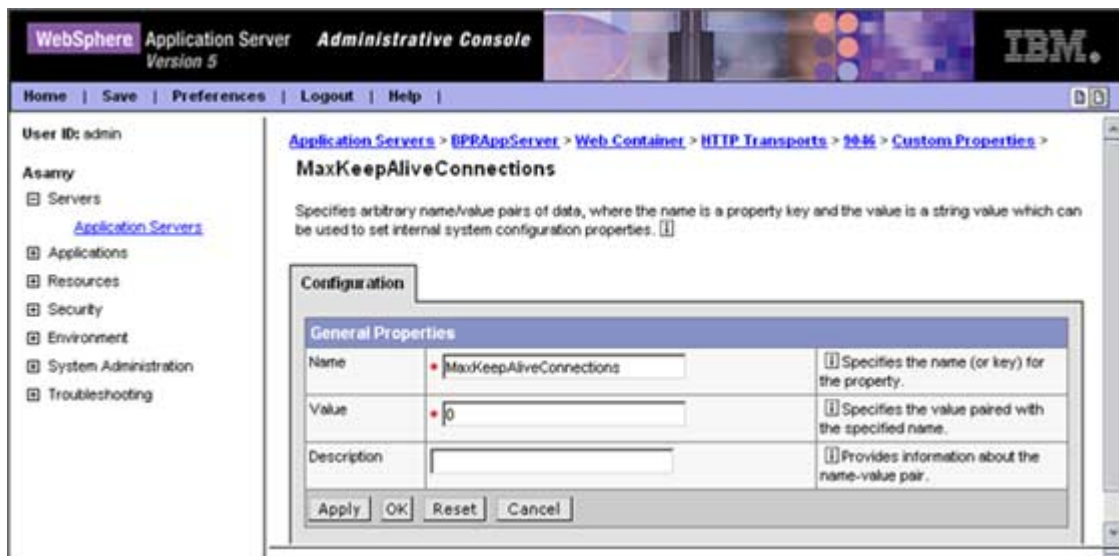
In addition to the previous steps, the following steps should be done in case of deploying the WBI Workbench Server application on WebSphere Application Server 5.0 either on the base server (server1) or on a new Application Server. You don't need to perform these steps in case of deploying the WBI Workbench Server application on WebSphere Deployment Manager 5.0 (Network Deployment).

1. From the Left hand tree, expand the Servers node.
2. Click the **Application Servers** hyperlink. The **Application Servers** page appears.
3. Click the **BPRAppServer** (or the server1) hyperlink in the Application Servers list. The **BPRAppServer Application Server Configuration Page** appears.
4. Click the **Web Container** hyperlink from the **Additional Properties** table. The **Web Container** page appears.
5. Click the **HTTP Transports** hyperlink from the **Additional Properties** table. The **HTTP Transports** page appears.
6. Click the asterisk (\*) hyperlink in the last row of the **HTTP Transports** table.
7. Click the **Custom Properties** hyperlink. The **Custom Properties** page opens.





8. Open the configuration page of property named **MaxKeepAliveConnections** by clicking its hyperlink in the table.
  - In case of deploying the WBI Workbench Server application on the base server (server1), if you don't find the **MaxKeepAliveConnections** property in custom properties page, then search for it in the other ports in HTTP transports page, if you don't find it then ignore these steps.



9. In the **Value** field, increment the value of this property by 1 (i.e. if the value is 0 the change it to 1)
10. Click **OK**.
11. Click **Save** in the top menu bar to save your changes. The **Save** page appears.

12. Click **Save**.

## 1.2.5 Configure the Virtual Host

Now you should configure the default\_host virtual host in order to add the server HTTP port to its Host Aliases list. These steps are done if you have created a new Application Server or if you will deploy the WBI Workbench Server Enterprise Application on the Base Server (server1) in case of WebSphere Deployment Manager 5.0 (Network Deployment). If you will deploy the WBI Workbench Server Enterprise Application on the Base Server (server1) for WebSphere Application Server 5.0 then do not perform these steps.

To configure the Virtual Host:

1. In the left hand tree, expand the **Servers** node.
2. Click the **Application Servers** hyperlink. The **Application Servers** page appears.
3. Click the **BPRAppServer** hyperlink. The **BPRAppServer** configuration page appears.
4. Click the **Web Container** hyperlink from the **Additional Properties** table. The **Web Container** page appears.
5. Click the **HTTP Transports** hyperlink from the **Additional Properties** table. The **HTTP Transports** page appears.
6. Click the \* hyperlink in the **First** row of the **HTTP Transports** table.
7. Copy the value in the **Port** field.
8. In the left hand tree, expand the **Environment** node.
9. Click the **Virtual Hosts** hyperlink. The **Virtual Hosts** configuration page appears.
10. Click the **default\_host** hyperlink in the hosts list. The **default\_host** configuration page appears.
11. Click the **Host Aliases** hyperlink in the **Additional Properties** table. The **Host Aliases** page appears.
12. Click **New**. The Configuration page of the new Host Alias appears.
13. Type \* in the Host Name field
14. Type the BPRAppServer HTTP Port Number that you've copied in the Port field.
15. Click **OK**.
16. Click **Save** in the top menu bar to save your changes. The **Save** page appears.



**For Network Deployment, it is preferred to select the Synchronize changes with nodes check box in the Save page.**



17. Click **Save**.

## 1.2.6 Adjust the WBI Workbench Server Parameters

Now you should adjust the WBI Workbench Server initial parameters. This is done through the WebSphere Application Assembly Tool.

To adjust the WBI Workbench Server initial parameters:

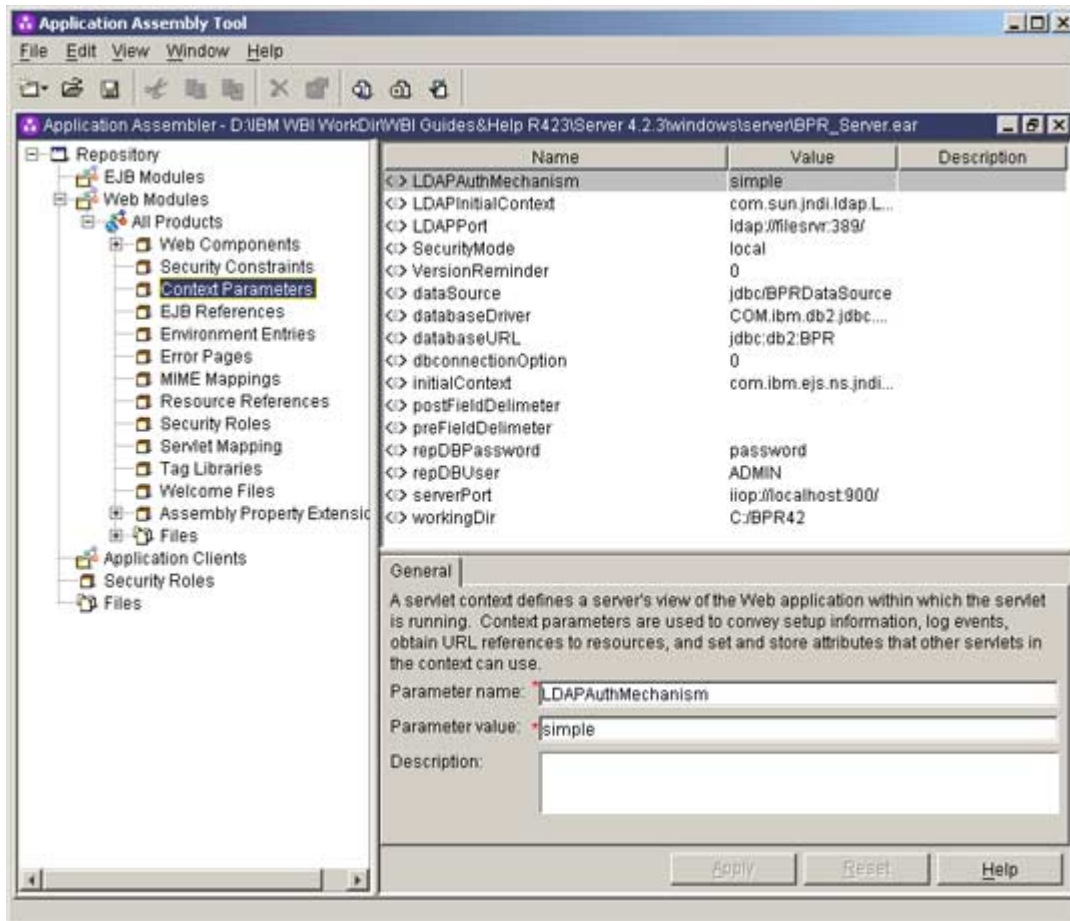
1. Start the WebSphere Application Assembly Tool
2. Click Cancel to close the welcome screen.
3. Select **File> Open** from the menu.

The **Open** dialog box appears.



4. Select the *BPR\_Server.ear* file located in **<WBServerWorkDir>\server**

- Expand the tree on the left and select **Repository>Web Modules > All Products > Context Parameters**.



- Adjust the values of each parameter in the Parameters list on the right by selecting the parameters and change the parameter's value in the Parameter Value box.



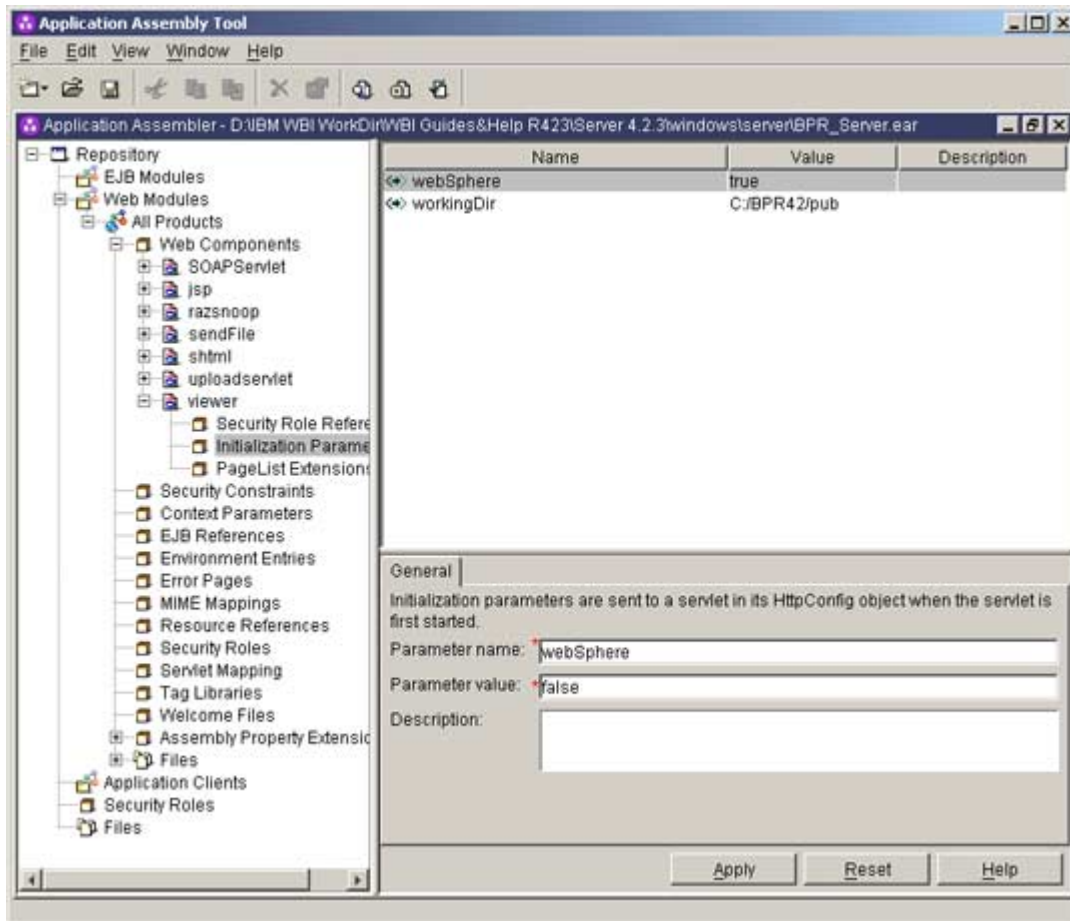
**You have to click Apply after changing each parameter to save your change.**

- **repDBUser**: Type the user id for the user who can access the database.
  - \* For Oracle Database, it is preferably to use the *WFBPR* that has been used to create the database tables.
- **repDBPassword**: Type the password for the user who can access the database.
- **workingDir**: type the full path of the working directory.
- **LDAPAuthMechanism**: Type the LDAP authentication mechanism (*simple*)

- **LDAPInitialContext:** Type the LDAP Initial Context (e.g. *com.sun.jndi.ldap.LdapCtxFactory*)
- **LDAPPort:** Type the LDAP Server name and port number (e.g. *ldap://ldapsrvr:389/*)
  - \* For AIX and Solaris platforms, type the LDAP server IP address instead of the server name
- **dataSource:** Type the WBI Workbench Server data source name (e.g. *jdbc/BPRDataSource*)
- **databaseDriver:** Type the database driver implementation class:
  - \* For IBM DB2, type: *COM.ibm.db2.jdbc.app.DB2Driver*
  - \* For MS SQL Server, type: *com.microsoft.jdbc.sqlserver.SQLServerDriver*
  - \* For Oracle, type: *oracle.jdbc.driver.OracleDriver*
- **databaseURL:** Type the database URL
  - \* For IBM DB2, type: *jdbc:db2:BPR*
  - \* For MS SQL Server type: *jdbc:microsoft:sqlserver://<SQL\_Server\_Machine\_Name>:<Port\_Number>;DatabaseName=BPR* (e.g. *jdbc:microsoft:sqlserver://SQLMachine:1433;DatabaseName=BPR*)
  - \* For Oracle, type: *jdbc:oracle:thin:@<Oracle\_Server\_Machine\_Name>:<Port\_Number>;BPRORA1* (E.g. *jdbc:oracle:thin:@OraMachine:1521:BPRORA1*)
- **dbconnectionOption:** Type *0* if the database connection is local, or *1* if the database connection is Distributed (using WebSphere Data Sources).
  - \* If the database connection is Distributed then the defined user name and password in the **repDBUser** and **repDBPassword** parameters will be ignored and the the user name and password that are defined for the data source in the application server will be used alternatively.
- **initialContext:** Type *com.ibm.websphere.naming.WsnInitialContextFactory*
- **postFieldDelimiter:** Type the database post field delimiter (e.g. "]" for MS SQL Server, " for Oracle, or empty for IBM DB2)
- **preFieldDelimiter** Type the database pre field delimiter (e.g. "[" for MS SQL Server, " for Oracle, or empty for IBM DB2).
- **serverPort:** Type the name and port number of the server where the WebSphere is installed.  
The Server Port Number can be obtained for the application Server from the following location:

- \* From the **BPRAppServer Application Server Properties** page, select the **End Point** property's hyperlink.
  - \* Click the **BOOTSTRAP ADDRESS** end point name's hyperlink.
  - \* The **Port** field contains the Server Port Number. Copy this number and use it for the **serverPort** parameter's value.
- **SecurityMode:** Type the Security type you have (type either *local* or *ldap*)
  - **VersionReminder:** Type 1 to display the version reminder message before checking out a process or 0 to hide this message.
  - **LDAP\_User:** Type a Distinguished Name (DN) for an LDAP Server authorized user that will be used for logging in to this LDAP Server, and performing the search in the LDAP users tree.
  - **LDAP\_Password:** Type the password of the defined User DN.
  - **LDAP\_UID\_Attribute:** Type the name of the prefix that precedes the user ID in the LDAP Server database (i.e. CN, UID,...etc). The value of this parameter varies between the different types of LDAP Servers.
  - **LDAP\_ROOT\_DN:** Type the starting point in the LDAP tree from which the query will start searching for the full DN of the given user ID.
  - **LDAP\_DN\_Attribute:** Type the name of the Distinguished Name attribute ID (i.e. distinguishedName, entrydn, ...etc. This value is case sensitive).

7. Select **Repository>Web Modules > All Products >Web Components > viewer > Initialization Parameters.**



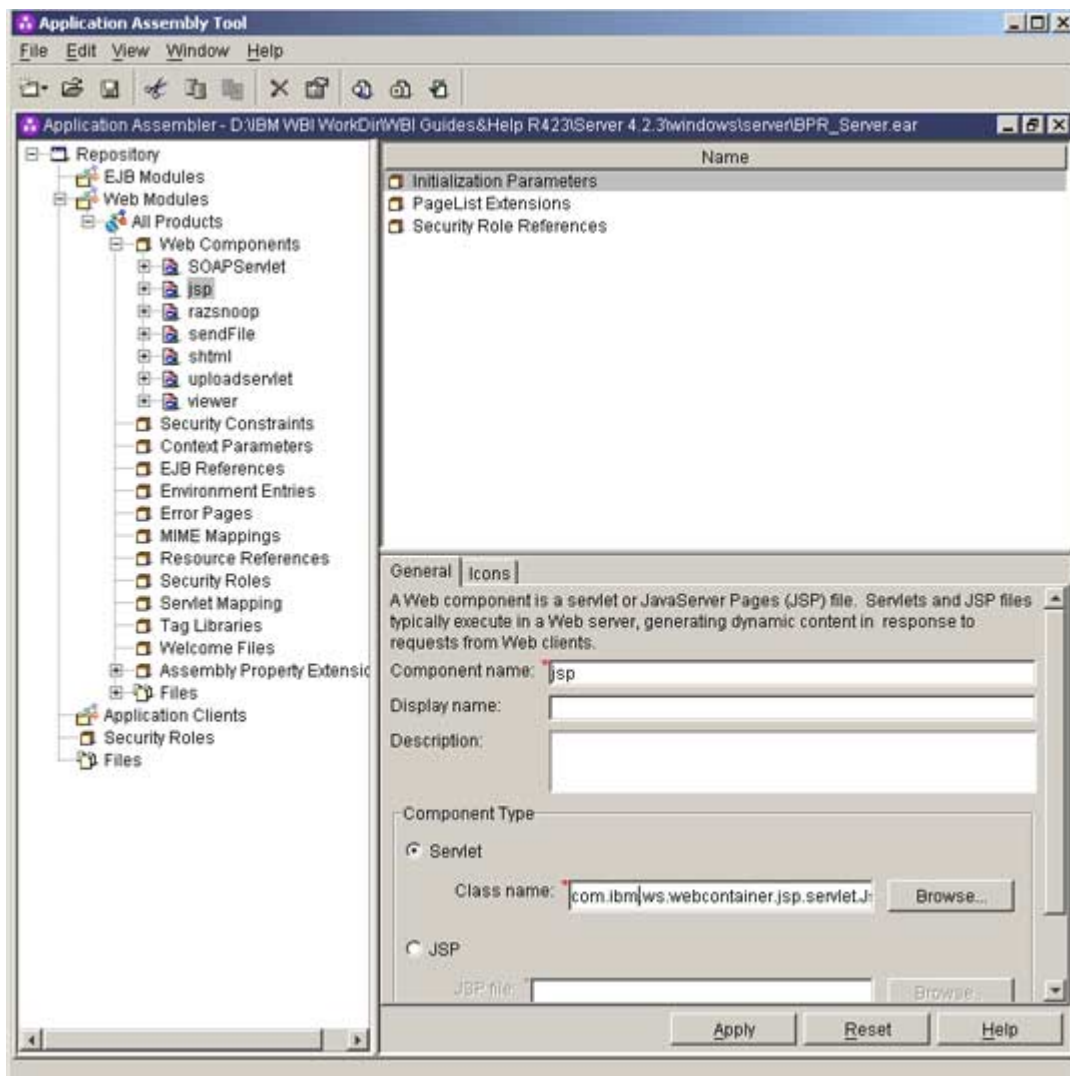
8. Adjust the values of the following two parameter in the Parameters list on the right by selecting the parameters and change the parameter's value in the Parameter Value box



**You have to click Apply after changing each parameter to save your change.**

- **workingDir:** Type */Pub*
- **WebSphere:** Type *false*

9. Select **Repository>Web Modules > All Products >Web Components > jsp.**



10. In the Component Type section, change the value of the Class name field to the following value:  
*com.ibm.ws.webcontainer.jsp.servlet.JspServlet*



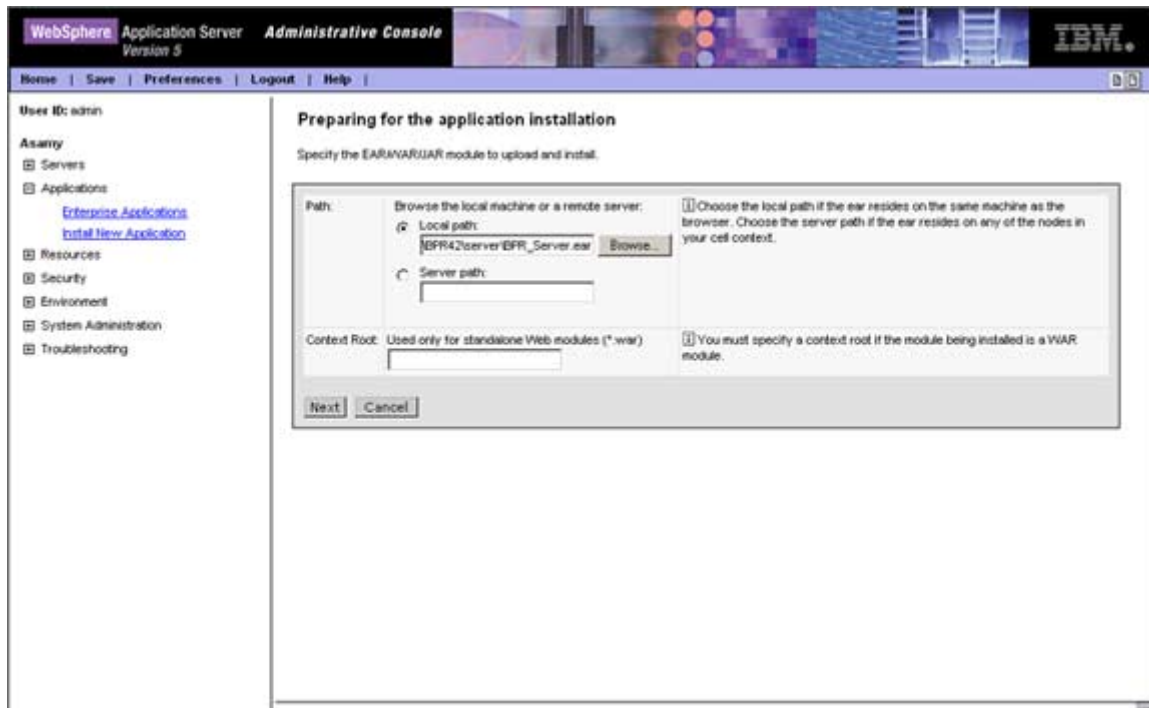
**You have to click Apply after changing the parameter to save your change.**

11. Select **File > Save** from the menu to save the *BPR\_Server.ear*.
12. Exit the **Application Assembly Tool**.

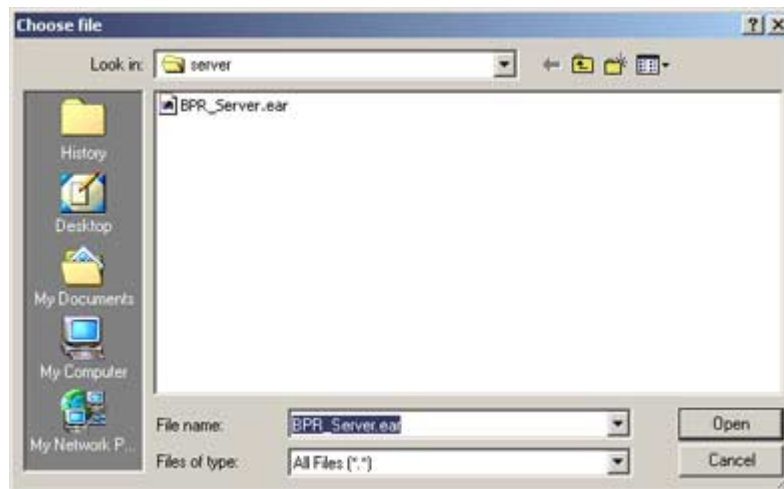
## 1.2.7 Install the WBI Workbench Server Enterprise Application

Now you will create and install an Enterprise Application for WBI Workbench Server.

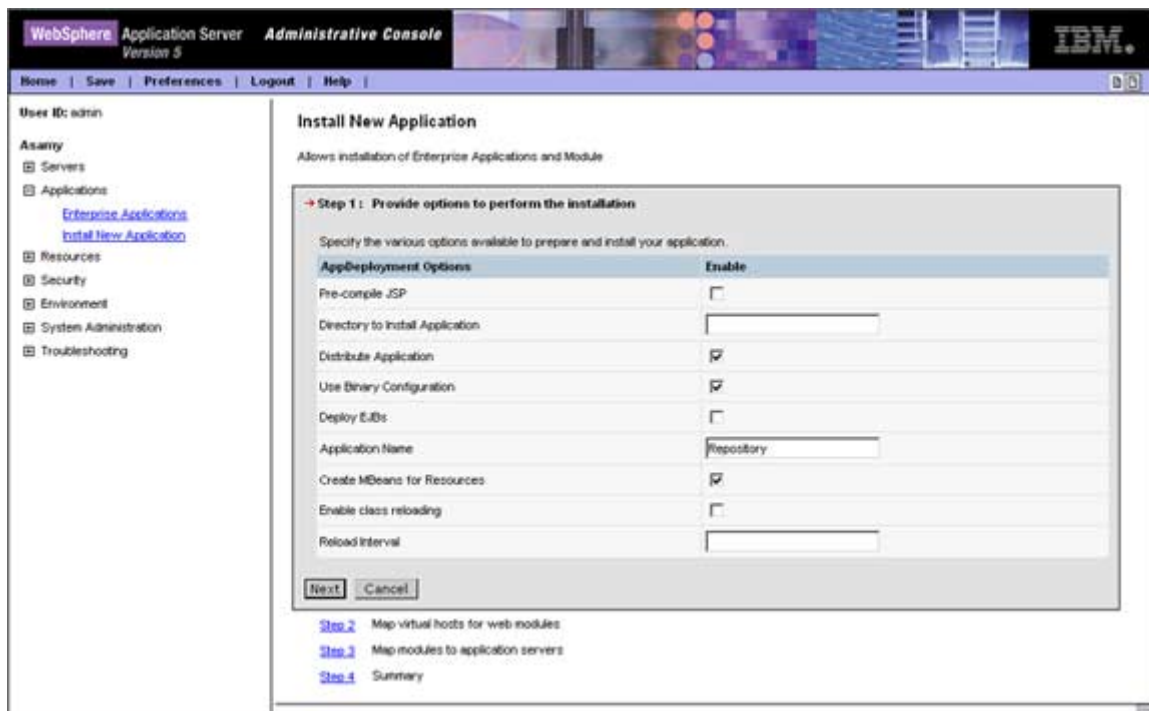
1. From the left hand tree, expand the Applications node.
2. Click the **Install new Application** hyperlink. The **Preparing for the application installation** wizard first page appears.



3. Click the **Browse** button to locate the BPR\_Server.ear file. The Open dialog box appears.

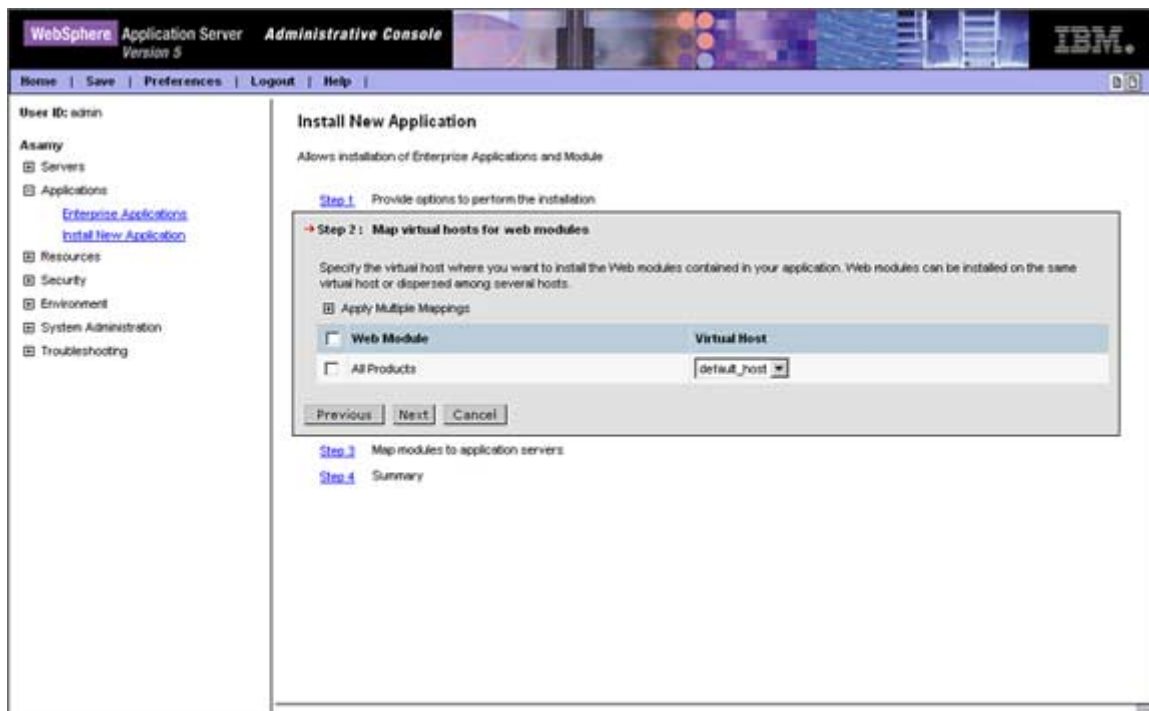


- Select the *BPR\_Server.ear* file located in **<WBServerWorkDir>\server**.
  - Click **Open**. The file will be selected
  - Click **Next**.
4. In the **Generate Default Binding** screen, click **Next**. The Install New Application wizard will start on its first step's page.

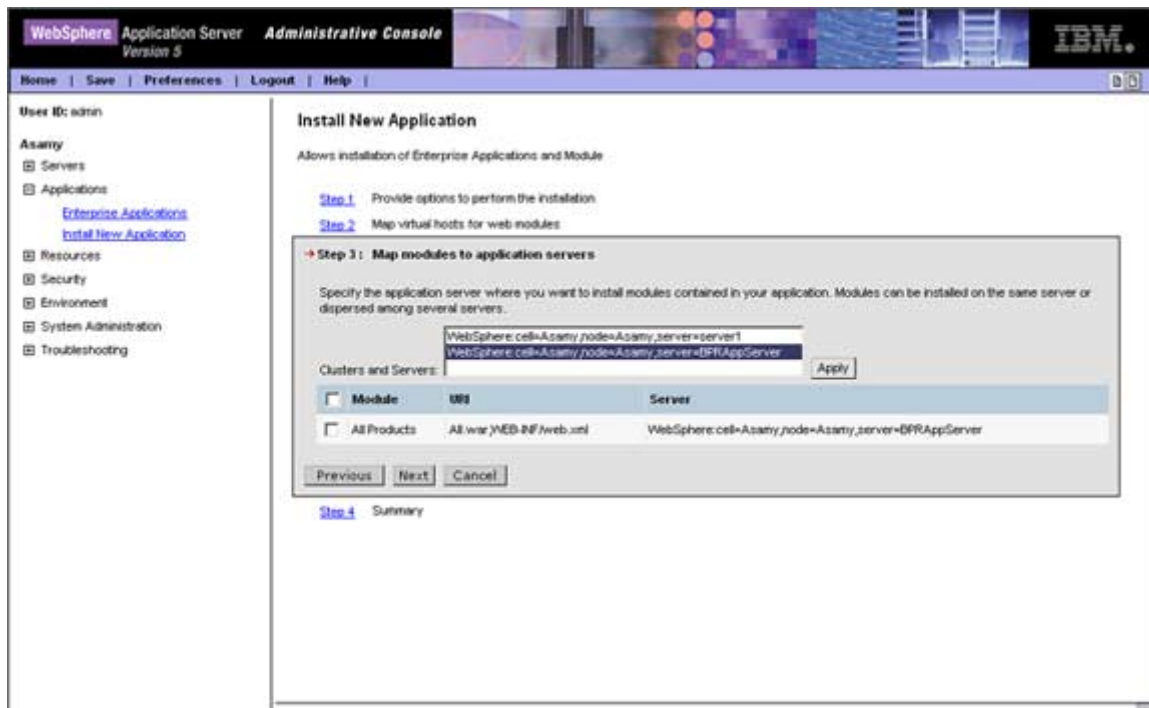


- In the **Directory to Install Application** field, enter the directory you want to be used for installing the WBI Workbench Enterprise Application. If you leave this field empty, then the default directory that WebSphere uses for installing the Enterprise Applications will be used (i.e. **<WebSphere>\installedApps**).
  - Select the **Use Binary Configuration** check box.
  - Leave the other settings with the default values.
  - Click **Next**.
5. In the Step 2 page (**Map virtual hosts for web modules**), Click next without changing any parameters.





6. In the Step 3 page (**Map modules to application servers**) do the following:



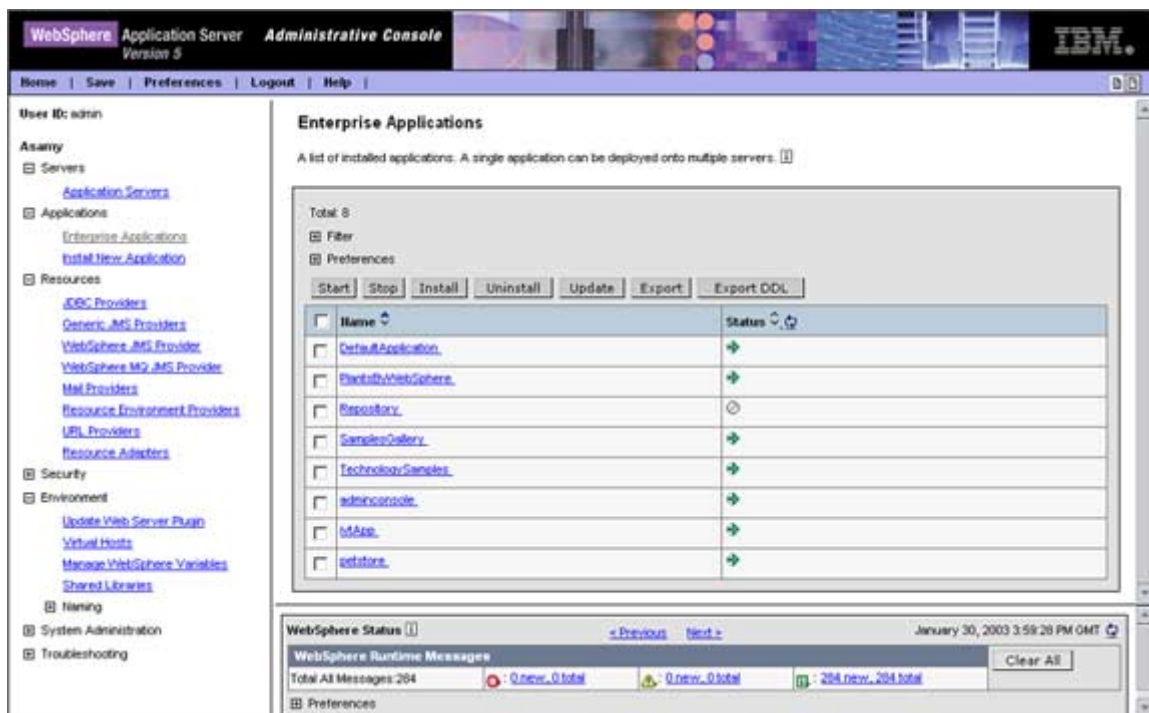
- Select the Application Server on which you want to deploy the WBI Workbench Server Enterprise Application from the Clusters and Servers list.

- Select the check box next to the **All Products** module.
  - Click **Apply**.
  - Click **Next**.
7. In Step 4 (**Summary**) the settings you have chosen will be listed. Review these settings. To return to any previous step, click the step number hyperlink and or click **Finish** if all settings are correct.
  8. Wait until the installation is finished and the confirmation page appears
  9. Click **Save to Master Configuration** hyperlink to save your configuration. Then click **Save** in the confirmation message.

## 1.2.8 Assign the Created Shared Library to the Installed Enterprise Application

Now you should assign the BPRLib shared library that you have created before to the WBI Workbench Server Enterprise Application that you have just installed. To do this:

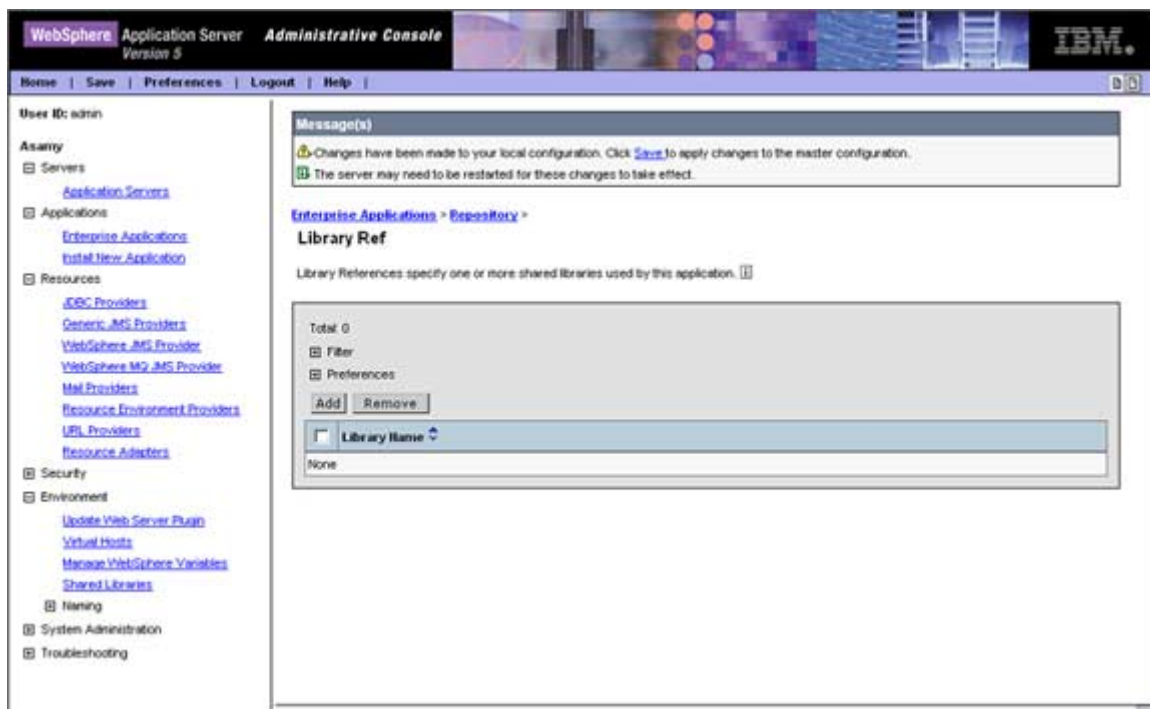
1. In the left hand tree, expand the Applications node.
2. Click the **Enterprise Applications** hyperlink. The **Enterprise Applications** page appears.



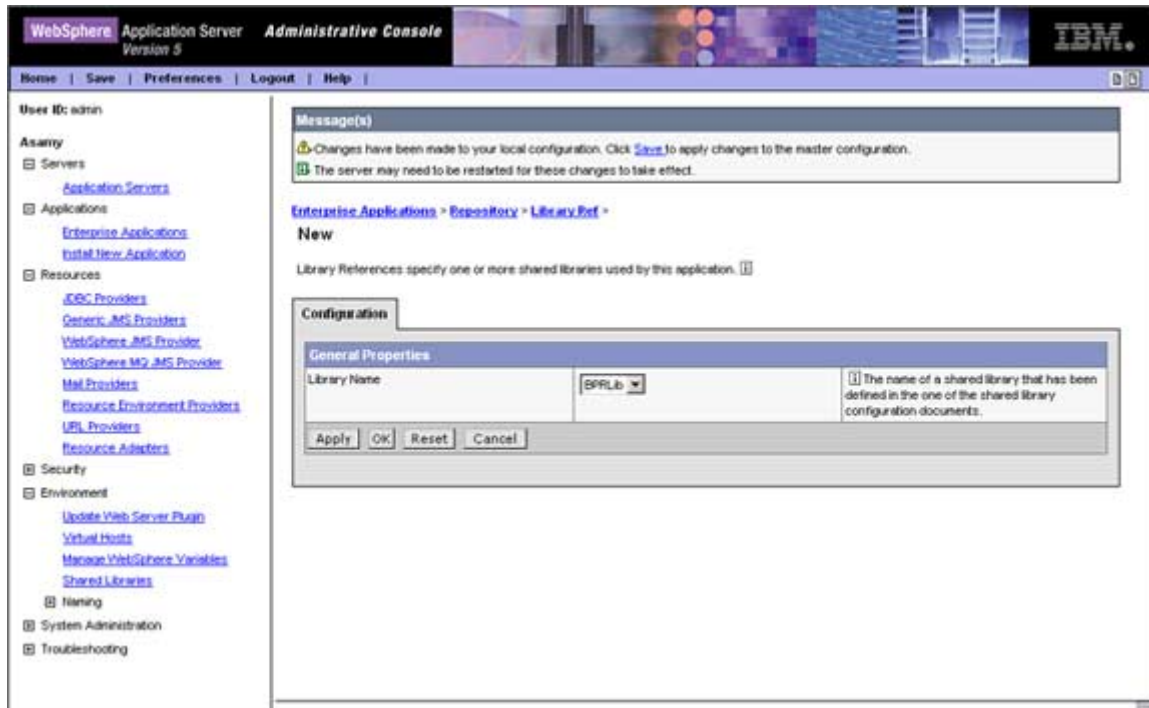
3. Click the **Repository** hyperlink (or the name of the installed Enterprise Application of the WBI Workbench Server if you have changed the default name). The **Repository Configuration Page** appears.



- Click the **Libraries** hyperlink from the **Additional Properties** table. The **Library Ref** page appears.



5. Click **Add**. The **Configuration** page of the new Shared Library Reference appears.



6. Select the *BPRLib* shared library from the **Library Name** drop down list.
7. Click **OK**.
8. Click **Save** in the top menu bar to save your changes. The **Save** page appears.



For Network Deployment, it is preferred to select the **Synchronize changes with nodes** check box in the **Save** page.

9. Click **Save**.

## 1.2.9 Regenerating Web Server Plug-in

Now you must regenerate the Web Server Plug-in to be adequate with the installed Enterprise Application. To regenerate the Web Server Plug-in:

1. In the left hand tree, expand the **Environment** node.
2. Click the **Update the Web Server Plugin** hyperlink. The **Update web server plugin** configuration page appears.



3. Click **OK**.

## 1.2.10 Restarting the Web Server

Now you should restart the Web Server you have.

Example: If you installed IBM HTTP Server as the Web Server then do the following:

1. From the Windows Taskbar, select **Start > Programs > IBM HTTP Server 1.3.26 > Stop IBM HTTP Server**.
2. Wait until the confirmation message that tells you that the IBM HTTP Server has been stopped.
3. From the Windows Taskbar, select **Start > Programs > IBM HTTP Server > Start IBM HTTP Server**.
4. Wait until the confirmation message that tells you that the IBM HTTP Server has been started.

## 1.2.11 Starting the Application Server

Now you must start the new Application Server. To do this:

### *For IBM WebSphere Application Server v5.0*

1. In Windows platform, run a command prompt window. In AIX or Solaris platforms start a console window.
2. Change the directory to <WebSphere>\bin

3. Type the following command line:  
*startServer BPRAppServer*



**In AIX and Solaris platform type startServer.sh.**

Where BPRAppServer is the Application Server on which the WBI Workbench Server Enterprise Application is deployed.



**This command is case sensitive.**

4. Wait until the Application Server is start and the confirmation message appears.



**If you have deployed the WBI Workbench Server Enterprise Application on the Base Server named server1, then you need only to restart this server.**

### ***For IBM WebSphere Deployment Manager (Network Deployment) v5.0:***

From the Administrative Console, do the following:

1. From the left hand tree, select **Servers > Application Server**. The **Application Servers** page appears.



2. Select the **BPRAppServer** Application Server by selecting the check box next to the Application Server's name. And then click **Start**.



## 2 WBI Workbench Server Application Server Un-deployment

This section is used to completely un-deploy the WBI Workbench Server Application Server. To completely un-deploy the WBI Workbench Server perform the following steps:

1. Stop the BPRAppServer.
  - For IBM WebSphere Application Server v5.0:



**If you have deployed the WBI Workbench Server Enterprise Application on the Base Server named `server1`, then do not stop this Application Server.**

- \* In Windows platform, run a command prompt window. In AIX or Solaris platforms start a console window.
- \* Change the directory to `<WebSphere>\bin`
- \* Type the following command line:  
`stopServer BPRAppServer`



**In AIX and Solaris platforms type `stopServer.sh`**

Where *BPRAppServer* is the Application Server on which the WBI Workbench Server Enterprise Application is deployed.



**This command is case sensitive.**

- Wait until the Application Server is stopped and the confirmation message appears.
  - For IBM WebSphere Deployment Manager (Network Deployment) v5.0:
    - \* From the Administrative Console, select **Servers > Application Server** from the left hand tree. The **Application Servers** page appears.
    - \* Select the BPRAppServer Application Server by selecting the check box next to the Application Server's name.
    - \* Click Stop.
2. Open the **WebSphere Administrative Console**.
  3. Uninstall the WBI Workbench Enterprise Application (the default name is Repository).

- From the left hand tree, select Applications > Enterprise Applications.
  - Select the check box next to the Repository Enterprise Application Server name.
  - Click **Uninstall**.
4. Delete the HTTP Port that you have added to the Host Aliases list.
  5. Delete the BPRAppServer Application Server.
    - If you have deployed the WBI Workbench Server Enterprise Application on the Base Server named server1, then do not delete the server1 Application Server.
    - For IBM WebSphere Application Server v5.0 only, If you have deployed the WBI Workbench Server Enterprise Application on the Base Server named server1, then decrease the value of the property named **MaxKeepAliveConnections** and located in **Application Servers > server1 > Web Container > HTTP Transports > <LastPortInTable> > Custom Properties** by 1 (i.e. if you have increased the value during the deployment to be 1 then change it to 0 again).
  6. Delete the added BPRLib shared library.
  7. Delete the BPR\_DataSource data source.
  8. Delete the BPR\_Driver JDBC Provider
  9. Save your changes.



**If you have deployed the WBI Workbench Server Enterprise Application on the Base Server named server1, then restart this Application Server.**



# Appendix C: Using the AdminWrite Utility

This appendix describes how to use the AdminWrite utility in order to gather the required parameters needed for running the InstallServer utility. This is done if the InstallServer utility could not find the *control.dat* file that contains these required parameters.

The AdminWrite utility starts by running the file named **AdminWrite.bat** on Windows platform or the file named **AdminWrite.sh** on AIX and Solaris platforms. These files are located in **<WBServerHomeDir>\installserver**.

Before starting the AdminWrite utility, if the java.exe on Windows platform or the java on AIX and Solaris platforms is not in your environment variable path, then you have to edit the **AdminWrite.bat** file or the **AdminWrite.sh** file in order to adjust the path of java.exe or java. To do this:

1. Open the **AdminWrite.bat** (or the **AdminWrite.sh**) for edit.
2. Edit the classpath line to add the actual path of the java.exe or the java (the Java home directory) before it.

Example:

If you are using the JDK that is shipped with the IBM WebSphere Application Server, then you should adjust the classpath line to start with **<WebSphere>\java\bin\java.exe** on Windows platform or **<WebSphere>\java\bin\java** on AIX and Solaris platforms.

Where **<WebSphere>** is the IBM WebSphere Application Server Home Directory (i.e. C:\WebSphere\AppServer).

3. Save and close the **AdminWrite.bat** (or the **AdminWrite.sh**) file.

By running the **AdminWrite.bat** or **AdminWrite.sh** files, the **AdminWrite** utility will start and the **InstallServer Parameters Version 4.2.3** dialog box appears:



1. In the **Database Directory** field, enter the WBI Workbench Server database directory.
  - This field is editable only if the database type is DB2.
  - On Windows platform, enter only the drive name on which the database will be created (i.e. C: or C:\).
  - On AIX and Solaris platforms, enter the full path and name of the directory in which the WBI Workbench Server database will be created. You must have write access on this directory and it must have enough space for the database creation.
2. Select the Database Type from the **DB Type** combo box.
3. Enter the User ID of the database administrator who will create the WBI Workbench Server database in the **User ID** box.
4. Enter the Database Administrator's password in the **Password** box.
5. Confirm the password by re-typing it in the **Confirm Password** box.
6. Select the WBI Workbench Server security type (**Local** or **LDAP**) from the **Security Mode** combo box.
7. Click **OK**. The entered parameters will be saved and the **Install Server** utility will be ready to use these parameters.

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However, this information may also contain diagnosis, modification, and tuning information. Diagnosis, modification and tuning information is provided to help you debug your application software.

**Warning:** Do not use this diagnosis, modification, and tuning information as a programming interface because it is subject to change.

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