Installing MCA Services on WebSphere 5.1

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Contents

1 Introduction

Document Conventions 5

Supported Environments 5

Installation Prerequisites 6

2 Installing on WebSphere 5.1

Extracting the MCA Services files 7

Installation Files 7

Extracting MCA Services on Windows 7

Extracting MCA Services on UNIX 7

Running WebSphere 8

Starting WebSphere on Windows 8

Starting WebSphere on Unix 8

Stopping WebSphere on Windows 8

Stopping WebSphere on Unix 8

Configuring the DB2 Database 8

Prerequisites 8

Copying the DB2 Database Scripts 9

Creating the MCA Services DB2 Database 9

Creating the Default MCA Services Routes on DB2 10

Inserting the FPI Sample Data on DB2 11

Changing the Database User Password on DB2 11

Creating a Connection to the Database on the WebSphere Server 11

Configuring the Oracle Database 11

Prerequisites 12

Copying the Oracle Database Scripts 12

Creating the MCA Services Tables on Oracle 12

Creating the Default MCA Services Routes on Oracle 13

Inserting the FPI Sample Data on Oracle 14

Changing the User Password on Oracle 15

Configuring WebSphere Application Server 15

Starting the Administrative Console 15

Configuring WebSphere's Database Access for DB2 15

Configuring WebSphere's Database Access for Oracle 17

Configuring the JNDI Default Data Source Binding 29

Changing the Database and Schema Settings 30

Configuring JMS Settings 30

Configuring Websphere Topic Connection Factories 30

Configuring Websphere Topic Destinations 30

Configuring the Listener 31

Editing the Properties Files 31

Editing TestCustomerdata.properties 31

Editing BankframeResource.properties 32

Installing MCA Services on WebSphere 32

Application Deployment Options 32

3 Running MCA Services

1 Introduction

This document describes the steps required to deploy Multi Channel Architecture (MCA) Services on an IBM WebSphere 5.1 application server. The terms MCA Services and Foundation Services are interchangeable. MCA Services encompasses the Financial Process Integrator engine and the Statemachine. The steps required are:

- Extracting the MCA Services files.
- Configuring the database.
- Configuring IBM WebSphere.

Document Conventions

In the procedures described in this document the following assumptions are made:

On Windows:

- WebSphere is installed in the d:\Program Files\WebSphere location.
- DB2 is installed in the d:\SQLLIB location.
- Oracle is installed in the d:\oracle location.
- The CD-ROM drive is attached to the e: drive.

On UNIX Platforms:

- WebSphere is installed in the location /app/WebSphere. This is referred to as the WebSphere root directory.
- DB2 is installed in the /app/IBMdb2/sqllib location.
- Oracle is installed in the /opt/oracle/OraHome1 location.
- The CD-ROM drive is mounted at /mnt/cdrom.

Your machine configuration can differ, so adjust the values in the examples to your machine configuration.

Supported Environments

The MCA Services release for WebSphere 5.1 supports the following server and client environments:

Server Environments

AppServer	AppServer OS	RDBMS	RDBMS Server OS
IBM WebSphere 5.1	AIX 5.2	DB2 8.1.5	AIX 5.1
IBM WebSphere 5.1	AIX 5.2	Oracle 9.0.1	Solaris 8

Client Environments

For MCA Pack:	Client J2SE JRE
IBM WebSphere 5.1/ DB2 8.1.5	Sun J2SE 1.4.2 JRE
IBM WebSphere 5.1/ Oracle 9.0.1	Sun J2SE 1.4.2 JRE

Installation Prerequisites

The target machine must be clean, that is, not running any other WebSphere applications, including any previous version of MCA Services. Note that you cannot use the instructions provided in this document to upgrade from any previous version of MCA Services.

Before deploying MCA Services, the following software must be correctly installed and configured:

- IBM WebSphere 5.1.
- A supported database – Oracle 9.0.1 or IBM DB2 8.1.5.
- Java utilities `java, javac, jar` must be available at the command line.

The command-line processor for the database server must be available at the command prompt.

WebSphere must be running.

2 Installing on WebSphere 5.1

Extracting the MCA Services files

Installation Files

The Installation files are available on the Installation CD as follows:

- The WebSphere 5.1 DB2 installation file is available on the Installation CD at: `packs\FoundationServices200453WebSphere51forDB2.jar`
- The WebSphere 5.1 Oracle installation file is available on the Installation CD at: `packs\FoundationServices200453WebSphere51forOracle.jar`

Extract the MCA Services files to the WebSphere root directory as described in the following sections:

Extracting MCA Services on Windows

Type the following commands at a command prompt to extract the MCA Services files to the WebSphere root directory:

```
cd /d d:\Program Files\WebSphere\AppServer
```

If the database is DB2, type:

```
jar xvf e:\packs\FoundationServices200453WebSphere51forDB2.jar
```

If the database is Oracle, type:

```
jar xvf e:\packs\FoundationServices200453WebSphere51forOracle.jar
```

Extracting MCA Services on UNIX

Type the following commands in a console to extract the MCA Services files to the WebSphere root directory:

```
cd /app/WebSphere/AppServer
```

If the database is DB2, type:

```
jar xvf /mnt/cdrom/packs/FoundationServices200453WebSphere51forDB2.jar
```

If the database is Oracle, type:

```
jar xvf /mnt/cdrom/packs/FoundationServices200453WebSphere51forOracle.jar
```

Running WebSphere

This section describes how to start and stop WebSphere.

To start WebSphere on Windows

1. Navigate to the Start > Programs > IBM WebSphere > Application Server v5.1 > First Steps screen.
2. Click on the Start the Server option. When Server server1open for ebusiness appears in the log on the bottom of the panel, this indicates that the server has started up successfully.

To start WebSphere on Unix

1. Go to the root of the server installation, which should be the folder named WebSphere.
2. Enter the bin subdirectory and type the command:

```
./startServer server1 &
```

To stop WebSphere on Windows

1. Navigate to the Start > Programs > IBM WebSphere > Application Server v5.1 > First Steps screen.
2. Click on the Stop the Server option. When Server server1 stop completed appears in the log on the bottom of the panel, this indicates that the server has stopped successfully.

To stop WebSphere on Unix

1. Go to the root of the server installation, which should be the folder named WebSphere.
2. Enter the bin subdirectory and type the command:

```
./stopServer server1 &
```

Configuring the DB2 Database

This section details the procedures specific to MCA Services that are required when configuring a database server. The procedure shows you how to create the database tables, the users, and schemas. If you are using an Oracle database server instead, skip to the Oracle section.

Prerequisites

Before you attempt to configure the database you must:

- Have physical access to the console of the machine running DB2.
- Obtain the password for the `db2admin` user on Windows or the `db2inst1` user if on Unix.

- Create a new operating system user named `bankfrm` with the password `bankfrm` and give full administrator rights to this user (refer to your operating system's administration documentation for instructions).
- Create a DB2 database called `BANKFRM.`
- Copy the database scripts `bufferpool.sql`, `bankframemca.sql`, `defaultroutes.sql`, and `txnsampledata.sql` to the DB2 server.

Copying the DB2 Database Scripts

Copy the DB2 database scripts as described in the following sections:

Copying on Windows

Copy the database scripts `bufferpool.sql`, `bankframemca.sql`, `defaultroutes.sql` and `txnsampledata.sql` to the local disk of the DB2 server from their location in:

```
d:\Program Files\WebSphere\AppServer\FoundationServices\deploy\database\db2\
```

Copying on Unix

Copy the database scripts `bufferpool.sql`, `bankframemca.sql`, `defaultroutes.sql` and `txnsampledata.sql` to the local disk of the DB2 server from their location in:

```
/app/WebSphere/AppServer/FoundationServices/deploy/database/db2/
```

Creating the MCA Services DB2 Database

To build the tables necessary to deploy MCA Services

1. Run the database script bufferpool.sql.
2. Restart the DB2 server.
3. Run the database script bankframemca.sql.

These steps create the correct schemas in the database. To run these scripts you must log on to the DB2 server machine under the user name db2admin on Windows or db2inst1 on Unix using the relevant password.

Important Note: Running the MCA Services script can produce errors such as:

```
DB21034E The command was processed as an SQL statement because it was not
a valid Command Line Processor command. During SQL processing it
returned: SQL0204N "BANKFRM.EJBGROUP_PERMISSIONS" is an undefined name.
SQLSTATE=42704
```

These errors are normal and you should ignore them. They are produced because the script always ensures it has an empty table space.

Creating the Database on Windows

Type the following commands at a command prompt:

```
d:\SQLLIB\bin\db2cmd
db2 -f x:\xxxx\bufferpool.sql > bankframemca.log
```

where *x:\xxxx* is the directory path to the location on the DB2 server where you copied `bufferpool.sql`. Stop and start the DB2 server to activate the buffer pool.

Type the following commands at a command prompt:

```
d:\SQLLIB\bin\db2cmd
db2 -f x:\xxxx\bankframemca.sql >bankframemca.log
```

where *x:\xxxx* is the directory path to the location on the DB2 server where you copied `bankframemca.sql`.

Creating the Database on Unix

Type the following commands in a console:

```
db2 -f /xxxx/bufferpool.sql
```

where */xxxx/* is the directory path to the location on the DB2 server where you copied `bufferpool.sql`. Stop and start the DB2 server to activate the buffer pool.

Type the following commands in a console:

```
db2 -f /xxxx/bankframemca.sql
```

where */xxxx/* is the directory path to the location on the DB2 server where you copied `bankframemca.sql`.

Creating the Default MCA Services Routes on DB2

Create the MCA Services routes as described in the following sections:

Creating the Routes on Windows

Type the following at a command prompt:

```
d:\SQLLIB\bin\db2cmd
db2 -f x:\xxxx\defaultroutes.sql >defaultroutes.log
```

where *x:\xxxx* is the directory path to the location on the DB2 server where you copied `defaultroutes.sql`.

Creating the Routes on Unix

Type the following commands in a console:

```
db2 -f /xxxx/defaultroutes.sql
```

where */xxxx/* is the directory path to the location on the DB2 server where you copied `defaultroutes.sql`.

Inserting the FPI Sample Data on DB2

Insert the Financial Process Integrator (FPI) sample data as described in the following sections (refer also to the EAB Support documentation and the Store For Forward documentation about `eabpersistertxnmap.sql` and `storeandforward.sql`).

Inserting the Sample Data on Windows

Type the following commands at a command prompt:

```
d:\SQLLIB\bin\db2cmd
Db2 -f x:\xxxx\ txnsampledata.sql > txnsampledata.log
```

where *x:\xxxx* is the directory path to the location on the DB2 server where you copied `txnsampledata.sql`.

Inserting the Sample Data on Unix

Type the following commands in a console:

```
Db2 -f /xxxx/ txnsampledata.sql
```

where */xxxx/* is the directory path to the location on the DB2 server where you copied `txnsampledata.sql`.

Changing the Database User Password on DB2

The database user has explicit ownership of the MCA Services database tables in the schema. For security reasons the database user password must be changed from its default `bankfrm`. Consult the vendor documentation for information on how to do this.

Creating a Connection to the Database on the WebSphere Server

If the DB2 server is not running on the same machine as the WebSphere server, a connection to the DB2 database must be configured on the WebSphere Server. The connection must be named bankfrm.

Creating a Connection on Windows

Use the DB2 Client Configuration Assistant to create a connection to the DB2 database. Consult your DB2 documentation for information on how to do this.

Creating a Connection on Unix

Use the DB2 command-line interpreter and the DB2 `catalog database` command to create a connection to the DB2 database. Consult your DB2 documentation for information on how to do this.

Configuring the Oracle Database

This section details the MCA Services specific procedures required when configuring an Oracle database server. The procedure shows you how to create the database tables, the users, and schemas. If you are using a DB2 database server instead, skip to the DB2 section.

Prerequisites

Oracle uses a file named `tnsnames.ora` to read database connection configurations. You must add the following entry to the end of the host's `tnsnames.ora` file.

```
BANKFRM =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(Host = hostname)(Port = 1521))
    (CONNECT_DATA = (SID = ORCL))
)
```

where *hostname* is the name of your Oracle database server.

You must create a database called `BANKFRM`.

Configuring on Windows

Type the following command at a command prompt:

```
notepad d:\oracle\ora90\network\ADMIN\tnsnames.ora
```

Scroll to the end of the file and add the `BANKFRM` entry to the file.

Configuring on Unix

Type the following commands in a console:

```
cd $ORACLE_HOME
vi network/admin/tnsnames.ora
```

Scroll to the end of the file and add the `BANKFRM` entry to the file.

Copying the Oracle Database Scripts

Copy the Oracle database scripts as described in the following sections.

Copying the Scripts on Windows

Copy the database scripts `bankframemca.sql`, `defaultroutes.sql` and `txnsampledata.sql` to the local disk of the Oracle server from their location in:

```
d:\Program Files\WebSphere\AppServer\FoundationServices\deploy\database\oracle\
```

Copying the Scripts on Unix

Copy the database scripts `bufferpool.sql`, `bankframemca.sql`, `defaultroutes.sql` and `txnsampledata.sql` to the local disk of the Oracle server from their location in:

```
/app/WebSphere/AppServer/FoundationServices/deploy/database/oracle/
```

Creating the MCA Services Tables on Oracle

To build the tables necessary to deploy MCA Services, you must run the database script `bankframemca.sql` within Oracle to create the proper schemas in the database.

Prerequisites

Before you run this script, you must obtain the following information:

- The Oracle `sys` user password.
- The name of the Oracle database server's temporary table space. The database script prompts you to enter this.

This information is available from the Oracle database administrator.

Important Note:

Running the database script can produce errors such as:

```
delete from BANKFRM.EJBGROUP_MEMBERS
                        *
ERROR at line 1:
ORA-00942: table or view does not exist
```

These errors are normal and you should ignore them. They are produced because the script always ensures it has an empty table space.

Creating the Tables on Windows

Run SQL Plus:

```
sqlplus sys/password@bankfrm
```

where *password* is the Oracle `sys` user password.

Run the script:

```
@'d:\xxxx\bankframemca.sql'
```

where `\xxxx\` is the directory path to the location on the Oracle server where you copied `bankframemca.sql`

Creating the Tables on Unix

Run SQL plus:

```
$ORACLE_HOME/bin/sqlplus sys/password@bankfrm
```

where *password* is the Oracle `sys` user password.

Run the script:

```
@'/xxxx/bankframemca.sql'
```

where `/xxxx/` is the directory path to the location on the Oracle server where you copied `bankframemca.sql`.

Creating the Default MCA Services Routes on Oracle

Create the default MCA Services Routes as described in the following sections:

Creating the Routes on Windows

Run SQL Plus:

```
sqlplus bankfrm/bankfrm@bankfrm
```

Run the script:

```
@'d:\xxxx\defaultroutes.sql'
```

where `\xxxx\` is the directory path to the location on the Oracle server where you copied `defaultroutes.sql`.

Creating the Routes on Unix

Run SQL plus:

```
$ORACLE_HOME/bin/sqlplus bankfrm/bankfrm@bankfrm
```

Run the script:

```
@'/xxxx/defaultroutes.sql'
```

where `/xxxx/` is the directory path to the location on the Oracle server where you copied `defaultroutes.sql`.

Inserting the FPI Sample Data on Oracle

Insert the Financial Process Integrator (FPI) sample data as described in the following sections (refer also to the EAB Support documentation and the Store For Forward documentation about `eabpersistertxnmap.sql` and `storeandforward.sql`).

Inserting the sample data on Windows

Run SQL Plus:

```
sqlplus bankfrm/bankfrm@bankfrm
```

Run the script:

```
@'d:\xxxx\txnsampledata.sql'
```

where `\xxxx\` is the directory path to the location on the Oracle server where you copied `txnsampledata.sql`.

Inserting the Sample Data on Unix

Run SQL Plus:

```
$ORACLE_HOME/bin/sqlplus bankfrm/bankfrm@bankfrm
```

Run the script:

```
@'/xxxx/txnsampledata.sql'
```

where `/xxxx/` is the directory path to the location on the Oracle server where you copied `txnsampledata.sql`.

Changing the User Password on Oracle

The user has explicit ownership of the database tables. For security reasons, you must change the user password from its default `bankfrm`.

Make a note of the new password, as you will be required to set the JDBC Connection Pool Password to this later.

Changing the Password on Windows

Run SQL Plus:

```
sqlplus bankfrm/bankfrm@bankfrm
```

Enter the command:

```
alter user bankfrm identified by newpassword;
```

where *`newpassword`* is the new user password.

Changing the Password on Unix

Run SQL Plus:

```
$ORACLE_HOME/bin/sqlplus bankfrm/bankfrm@bankfrm
```

Enter the command:

```
alter user bankfrm identified by newpassword;
```

where *`newpassword`* is the new user password.

Configuring WebSphere Application Server

Starting the Administrative Console

The administrative console is the mechanism by which WebSphere defines and configures its properties. To start the administrative console, you must start WebSphere. When the WebSphere application server is running, open a web browser and point it to `http://hostname:9090/admin` where *`hostname`* is the URL/IP address of the machine that WebSphere is running on. A Login screen is then displayed with a User ID field. The User ID required is not part of any authentication mechanism and is only used to track user changes, therefore you can use any name.

Configuring WebSphere's Database Access for DB2

The domain configuration must be modified to provide WebSphere with the user credentials associated with the DB2 database. This is done to allow WebSphere access to the MCA Services DB2 database.

To configure the database access and specify the DB2 driver classes

1. Start the WebSphere administrative console and log into the console.

2. Navigate to the Resources > JDBC Providers screen from the left hand pane. The JDBC Providers screen is then displayed.
3. Specify the database driver classes. WebSphere, by default, might already have an entry here for a driver that you can edit as appropriate. Otherwise, you must create a driver entry by clicking the New button. If a driver already exists, just click on the driver name itself. Either option displays the same screen.
4. Specify the driver name or edit it, if it already exists. If you are creating a new driver, call it DB2 Universal JDBC Provider (XA), and enter a description for the driver if required.
5. You can specify the classpath to the driver classes by editing the DB2_JDBC_DRIVER_PATH variable. This is discussed in a later section.
6. You can specify the implementation classname. This is COM.ibm.db2.jdbc.DB2XADataSource for DB2.
7. Save the information by clicking Apply. A message box is displayed at the top of the page indicating that changes have been made that need to be saved.
8. Click on `Save` in the message box. The Save to Master Configuration screen is then displayed, so click the Save button. On completion, the Home Page is displayed.

It is good practice to save any unsaved changes as you proceed. Changes needing to be saved are indicated by the appearance of the message box with the hyper-linked `Save` being added to the top of the pages being viewed.

Setting WebSphere Local Variables

When the database driver has been declared, you must set the path to the driver classes by changing the `DB2_JDBC_DRIVER_PATH` variable.

To set the WebSphere local variables

1. Navigate to Environment > Manage WebSphere Variables from the left hand pane of the console and a listing of all the WebSphere local variables is displayed.
2. Select the variable named DB2_JDBC_DRIVER_PATH to configure the variable. The configuration screen is then displayed.
3. Configure the Value field to display the absolute path to the zip file containing the driver classes. This zip file is usually called db2java.zip, for example, if the path to the db2java.zip file is d:\SQLLIB\java\db2java.zip, set the variable DB2_JDBC_DRIVER_PATH to value d:\SQLLIB\java.

Setting up a Data Source

When the database driver has been declared and a path associated with it, you must set up a data source.

1. Select Resource > JDBC Providers from the left hand pane. The page displayed should have a list of possible drivers.
2. Click on the driver named DB2 Universal JDBC Provider. At the bottom of the resultant screen, click on Data Sources (Version 4) and a new screen is displayed.
3. Select the New button to create a new data source. The configuration screen is then displayed. Configure the following fields:
   - The `Name` must be specified as `bankfrm`.

- The `JNDI Name` must be specified as `bankfrm`.
- The `Database Name` must be specified as `bankfrm`.
- The Default User ID and Default Password must also be set to bankfrm.

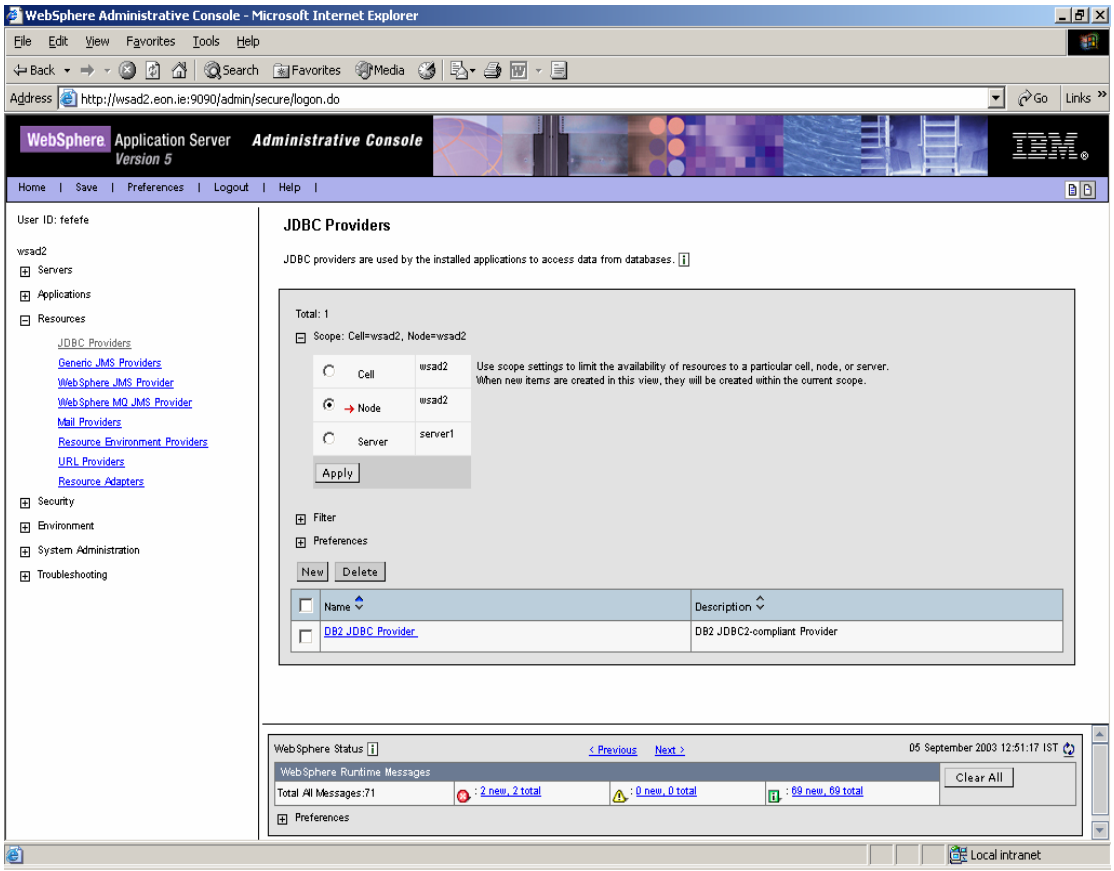
4 Save the information by clicking the Apply button and follow the usual saving procedure.

Configuring WebSphere's Database Access for Oracle

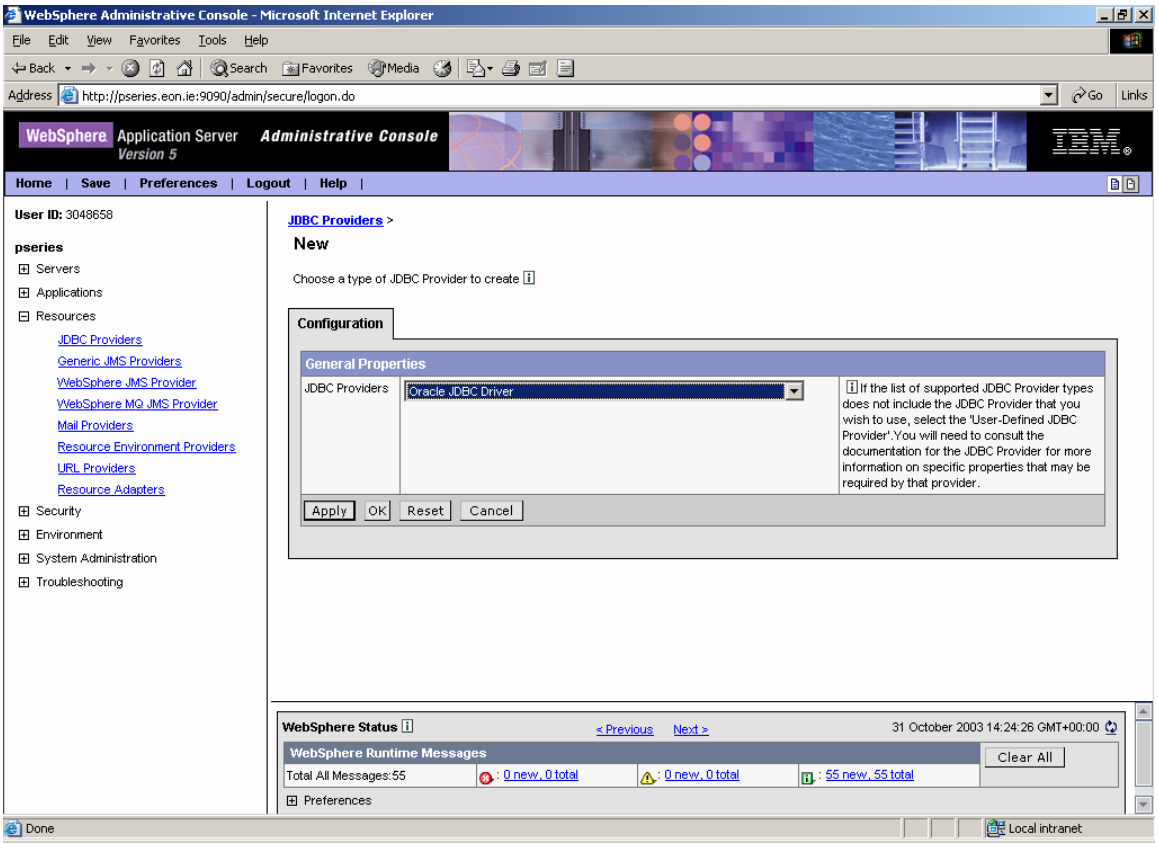
You must modify the domain configuration to provide WebSphere with the user credentials associated with the Oracle database. This allows WebSphere access to the MCA Services Oracle database.

Specifying the Oracle Driver Classes

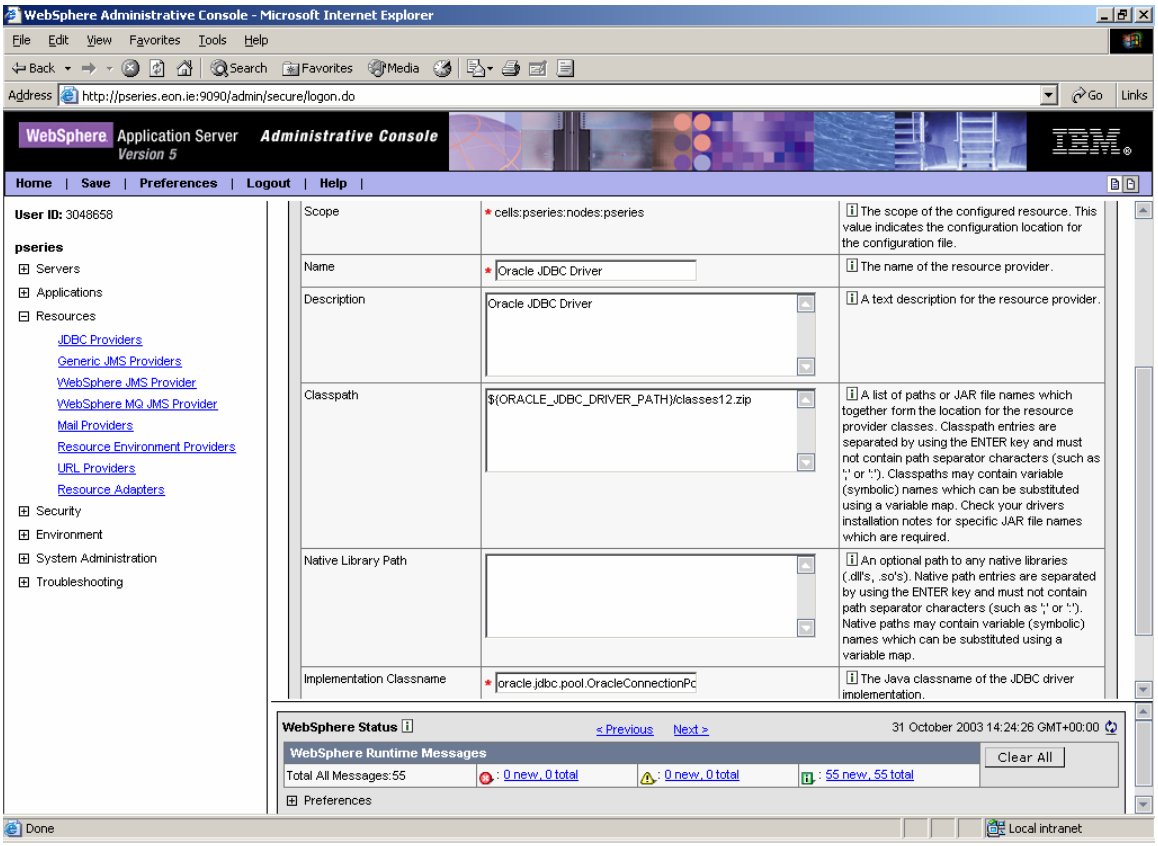
To configure the database access, start the WebSphere console as detailed previously and log into the console. Navigate to the `Resources > JDBC Providers` screen from the left hand pane.



The screen is used to specify the database driver classes. Create a new driver entry by clicking the `New` button. If a driver already exists, just click on the driver name itself. The following screen is displayed:



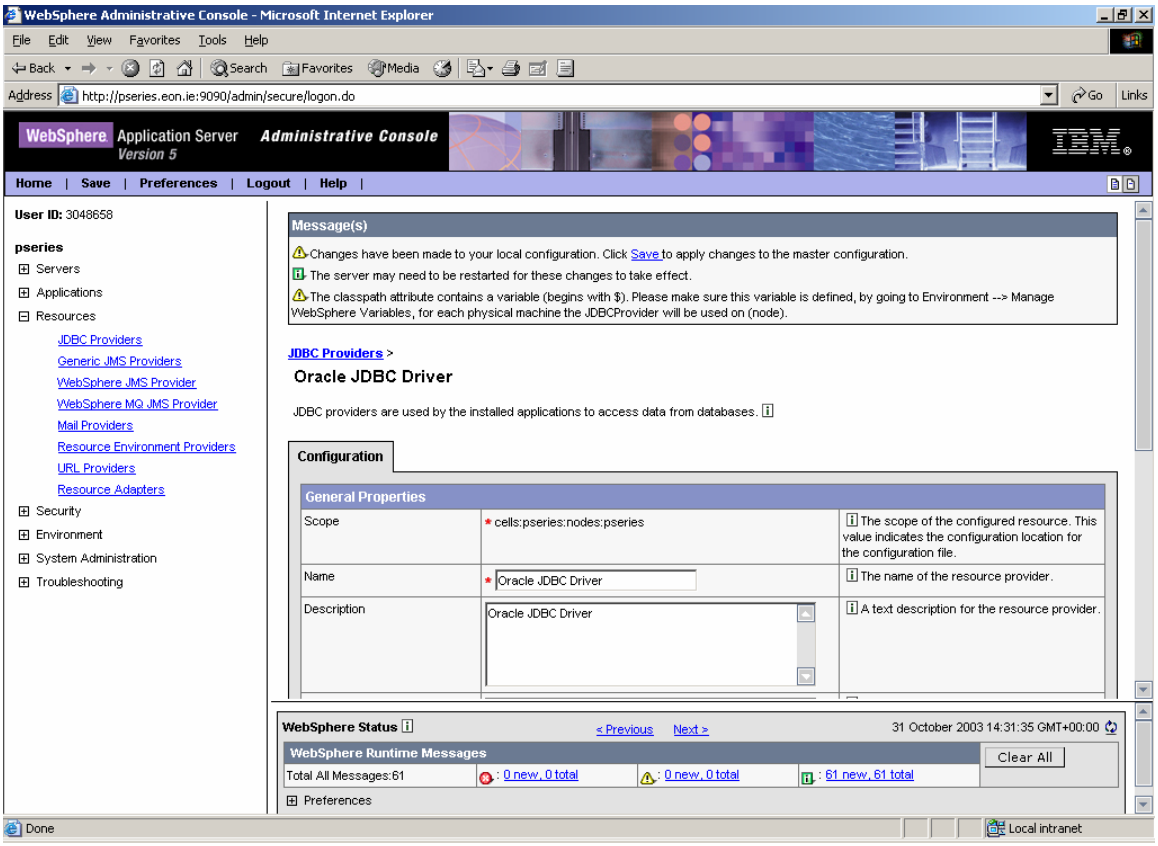
Select `Oracle JDBC Driver (XA)` from the drop-down list and click `Apply`, to display the following screen. (If, WebSphere has already created a default `ORACLE JDBC Provider,` the previous screen is not displayed and the following screen is displayed directly.)



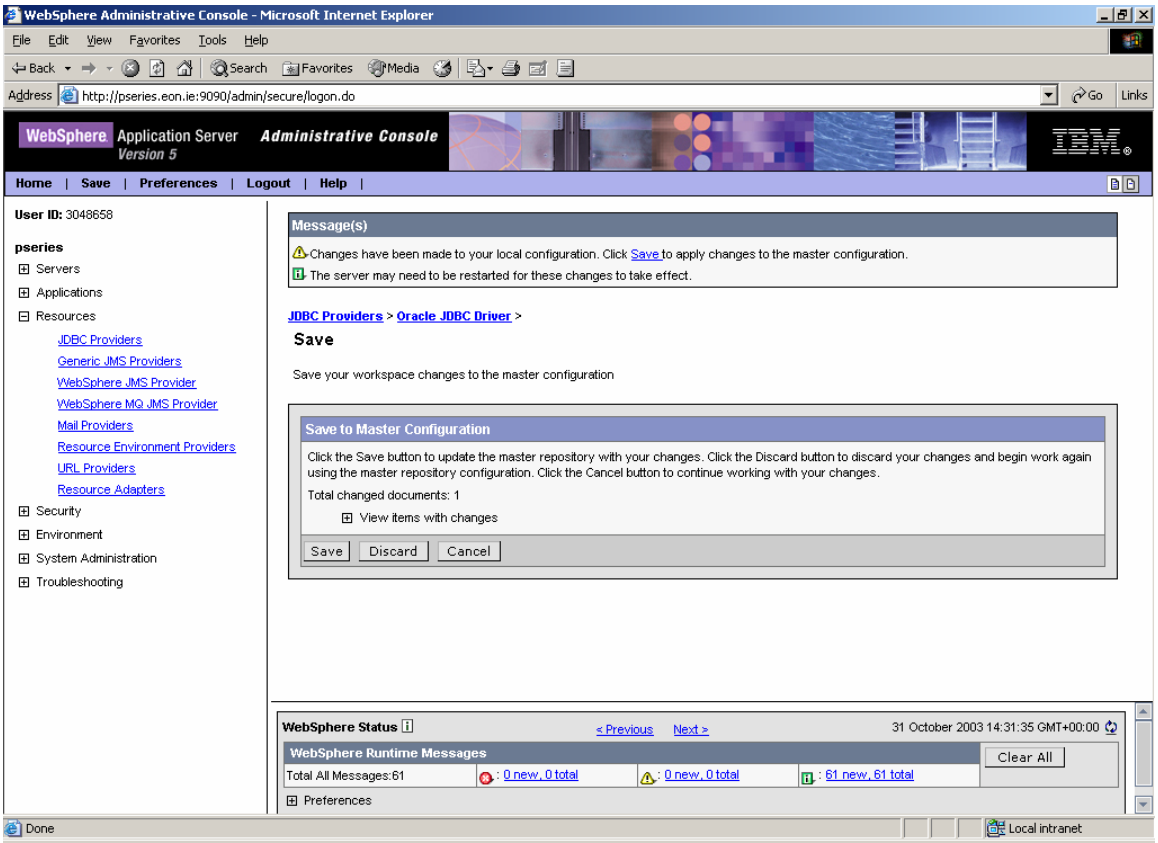
Complete the following fields:

- The driver name can be specified or edited if it already exists. If creating a new driver call it `Oracle JDBC Driver (XA)` for consistency with the rest of this document.
- A description for the driver can be entered.
- Editing the `ORACLE_JDBC_DRIVER_PATH` variable can specify the classpath to the driver classes. This is discussed in a later section.
- The implementation class name can be specified. This is `oracle.jdbc.xa.client.OracleXADataSource` for Oracle.

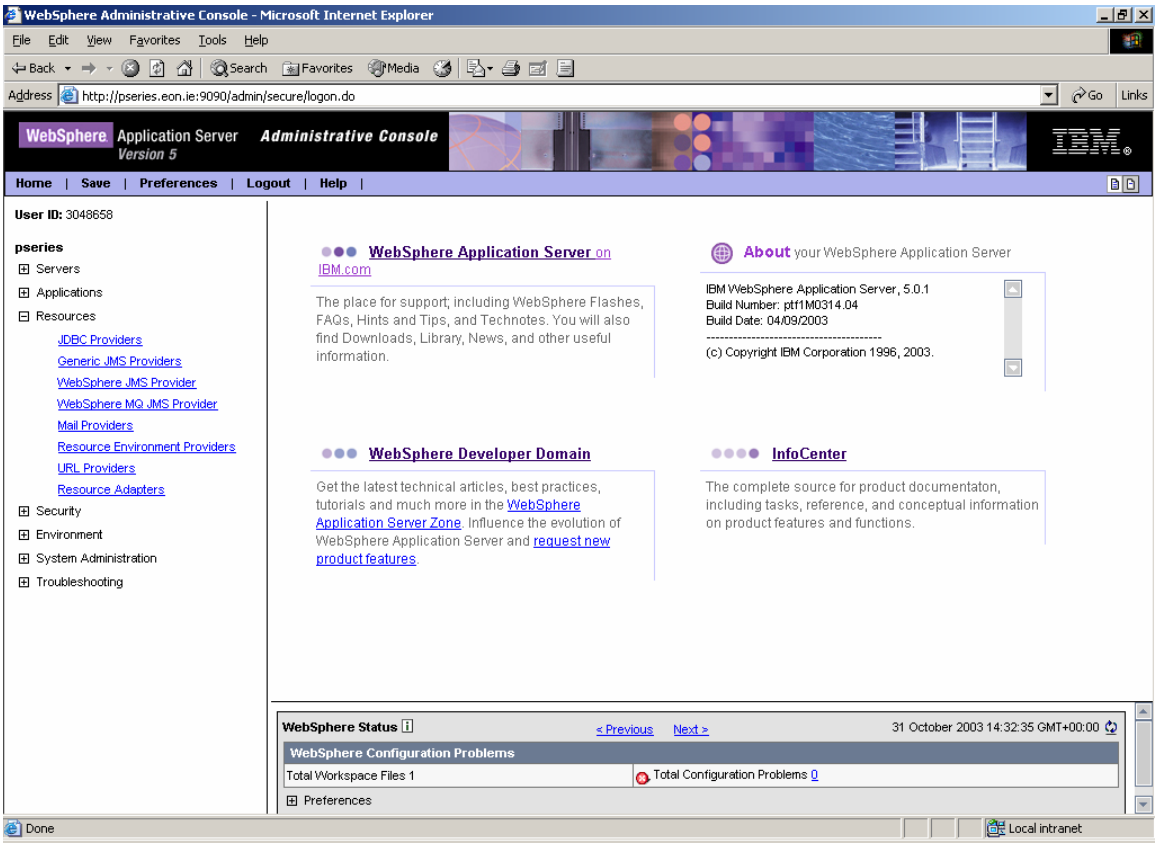
When the fields have been edited, click Apply to save the information. This adds the following message box to the top of the page:



Click Save to display the following screen.



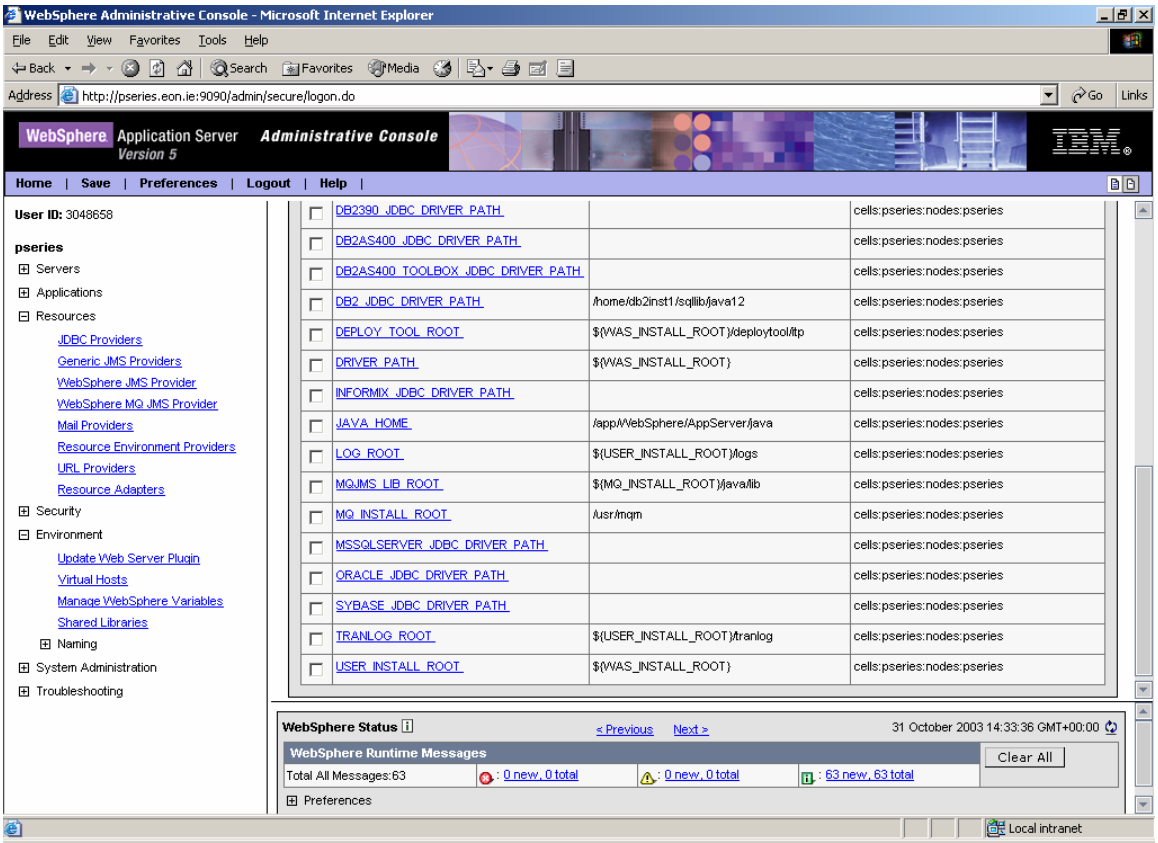
Click Save to save all current changes. The home page is then displayed.



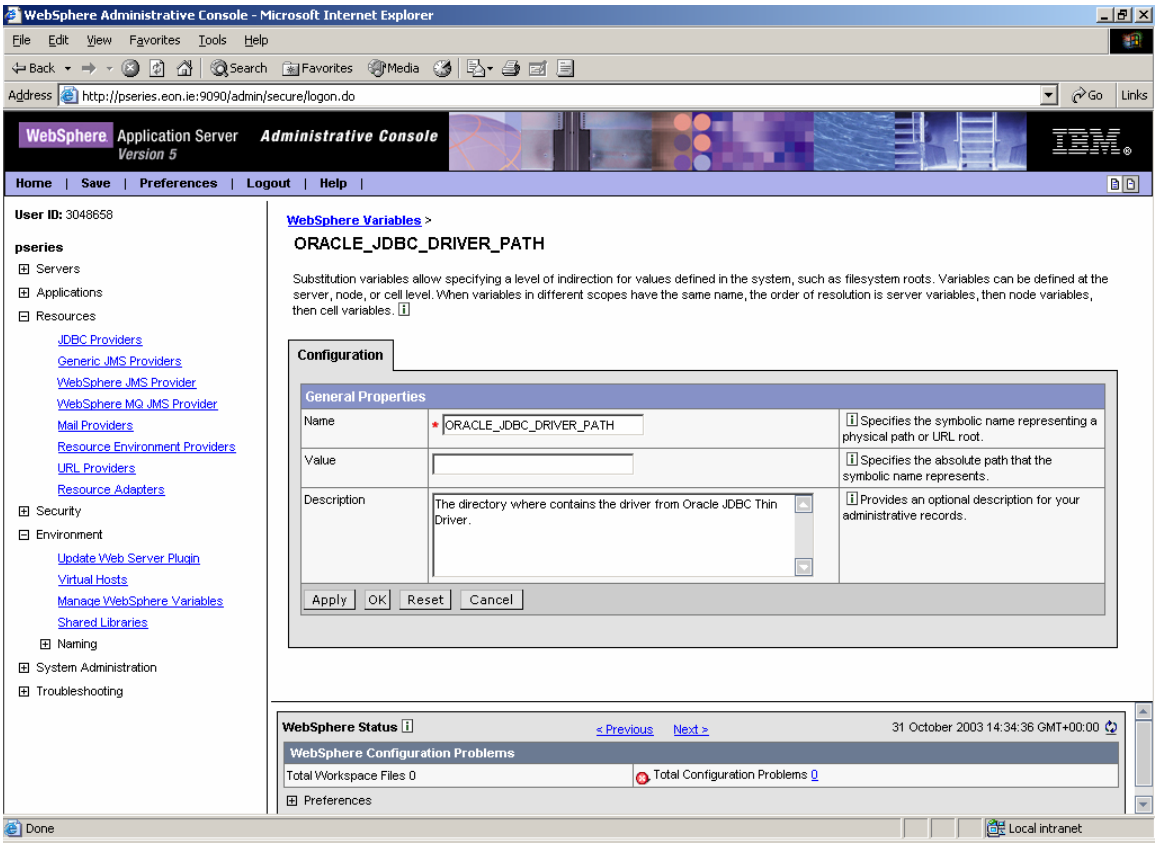
It is good practice to save any unsaved changes as you proceed. Changes that need to be saved are indicated by the appearance of the message box with the hyper-linked `Save` being added to the top of the pages being viewed.

Setting WebSphere Local Variables

When the database driver has been declared, you must set the path to the driver classes by changing the `ORACLE_JDBC_DRIVER_PATH` variable. Navigate to the `Environment > Manage WebSphere Variables` screen from the left hand pane of the console and the following screen is displayed, listing all the WebSphere local variables:



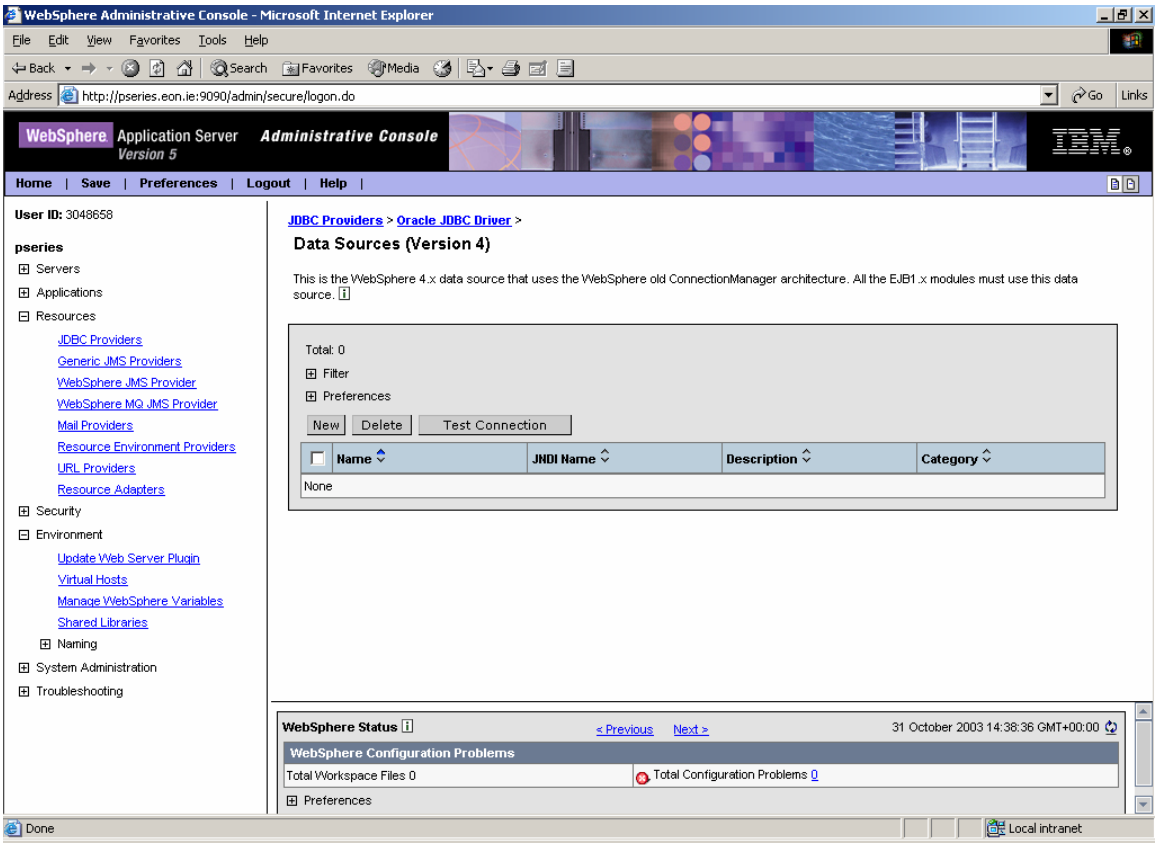
Clicking on the variable named `ORACLE_JDBC_DRIVER_PATH` displays the following screen, which allows you to set the path for the variable.



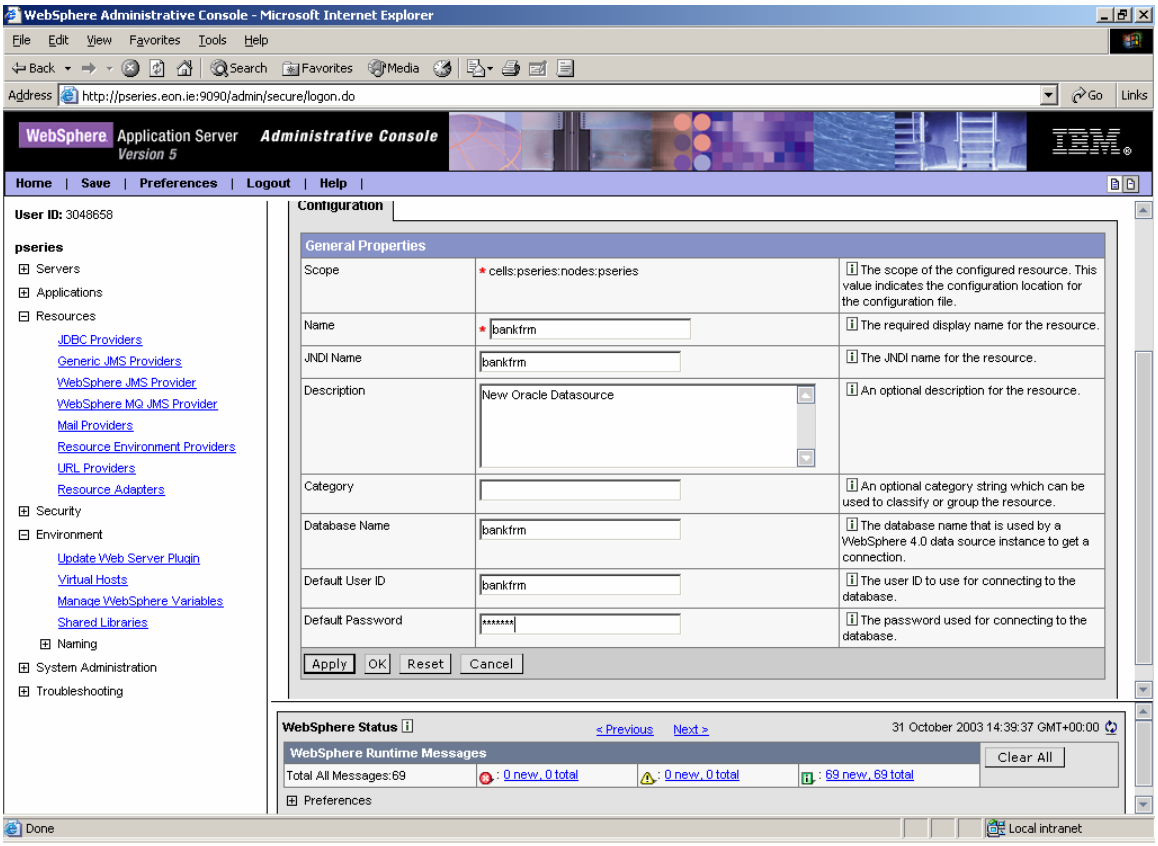
Change the `Value` field to display the absolute path to the zip file containing the driver classes. This zip file is usually called `classes12.zip`. For example, if the path to the `classes12.zip` file is `d:\oracle\ora90\jdbc\lib\classes12.zip` then set the variable `ORACLE_JDBC_DRIVER_PATH` to the value `d:\oracle\ora90\jdbc\lib.`

Setting up a Data Source

Now that the database driver has been declared and a path associated with it, you must set up a data source. Navigate to the `Resource > JDBC Providers` screen from the left hand pane. The resulting page should have a list of possible drivers. Click on the driver named `Oracle JDBC Driver (XA)`. At the bottom of the resulting screen, click on `Data Sources (Version 4)` and the following screen is displayed



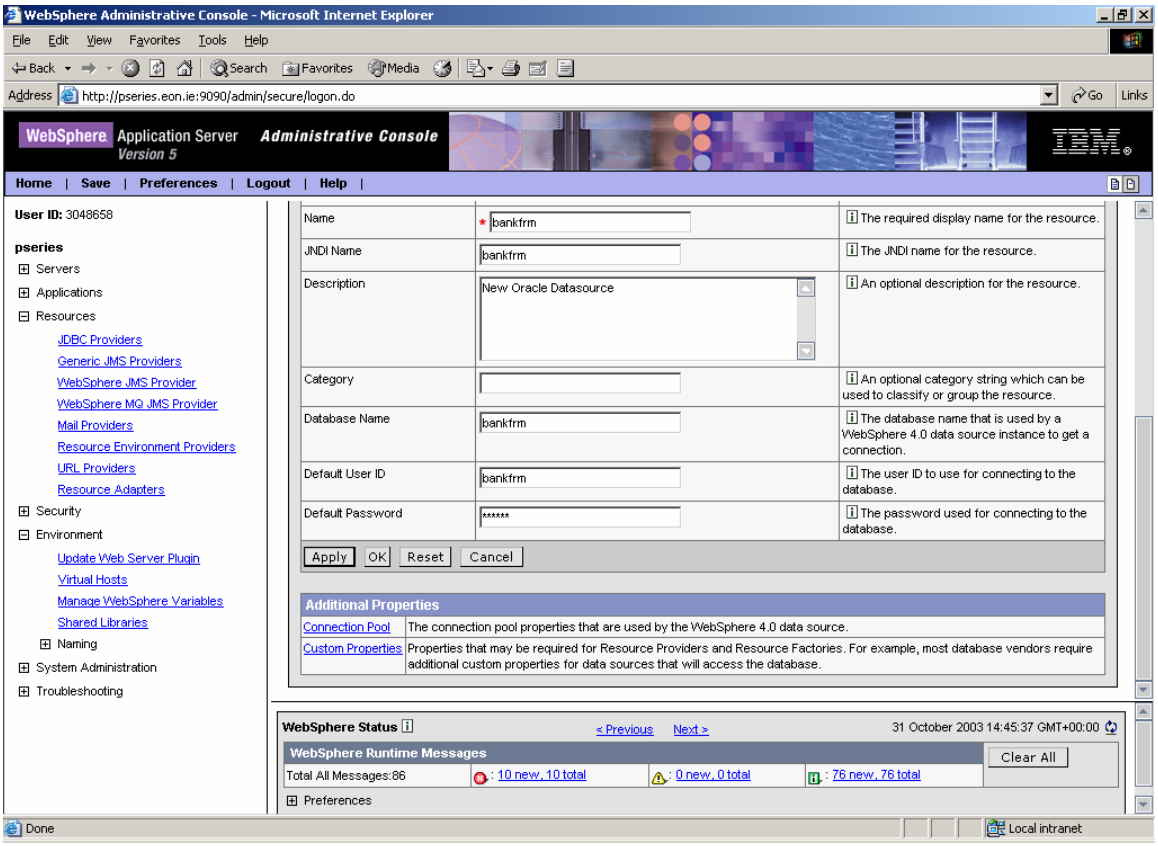
Create a new data source by clicking the `New` button. The following screen is displayed:



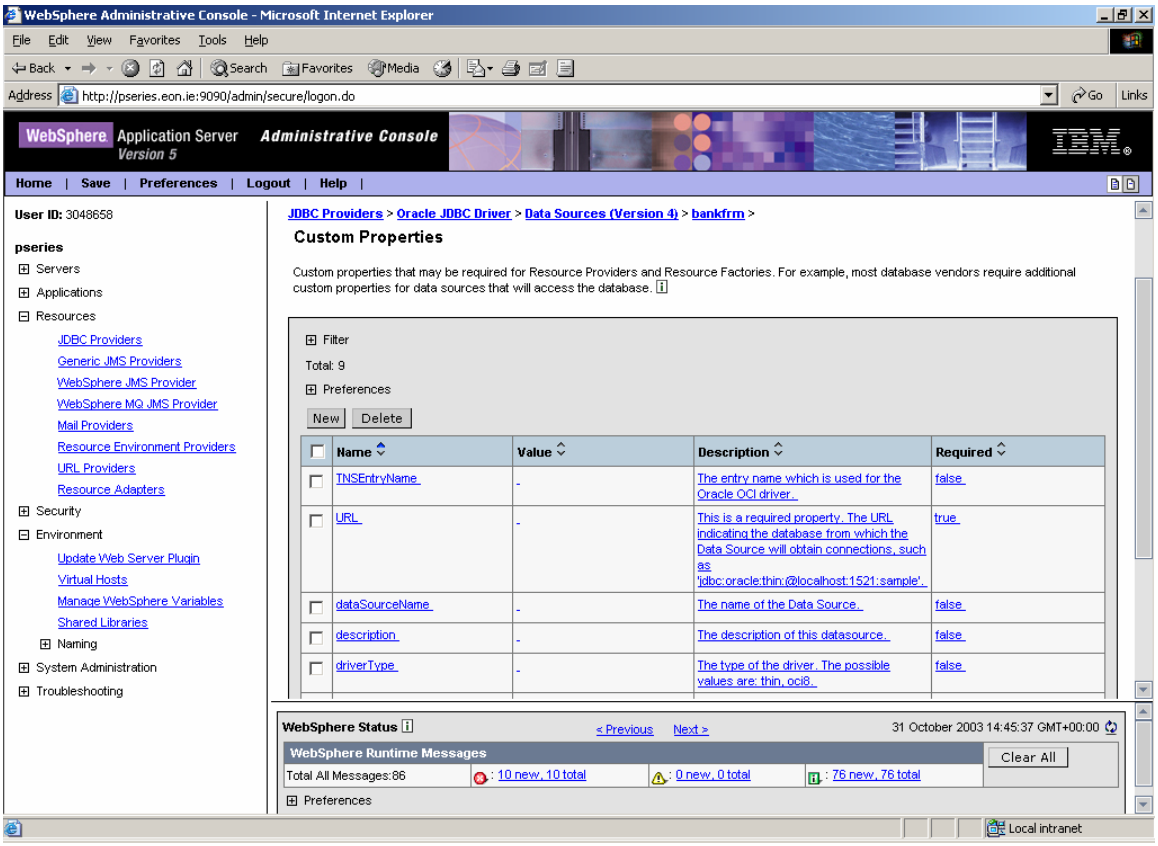
Complete the fields as follows:

- Specify `Name` as `bankfrm`.
- Specify `JNDI Name` as `bankfrm`.
- Specify `Database Name` as `bankfrm`.
- Set `Default User ID` and `Default Password` to bankfrm.

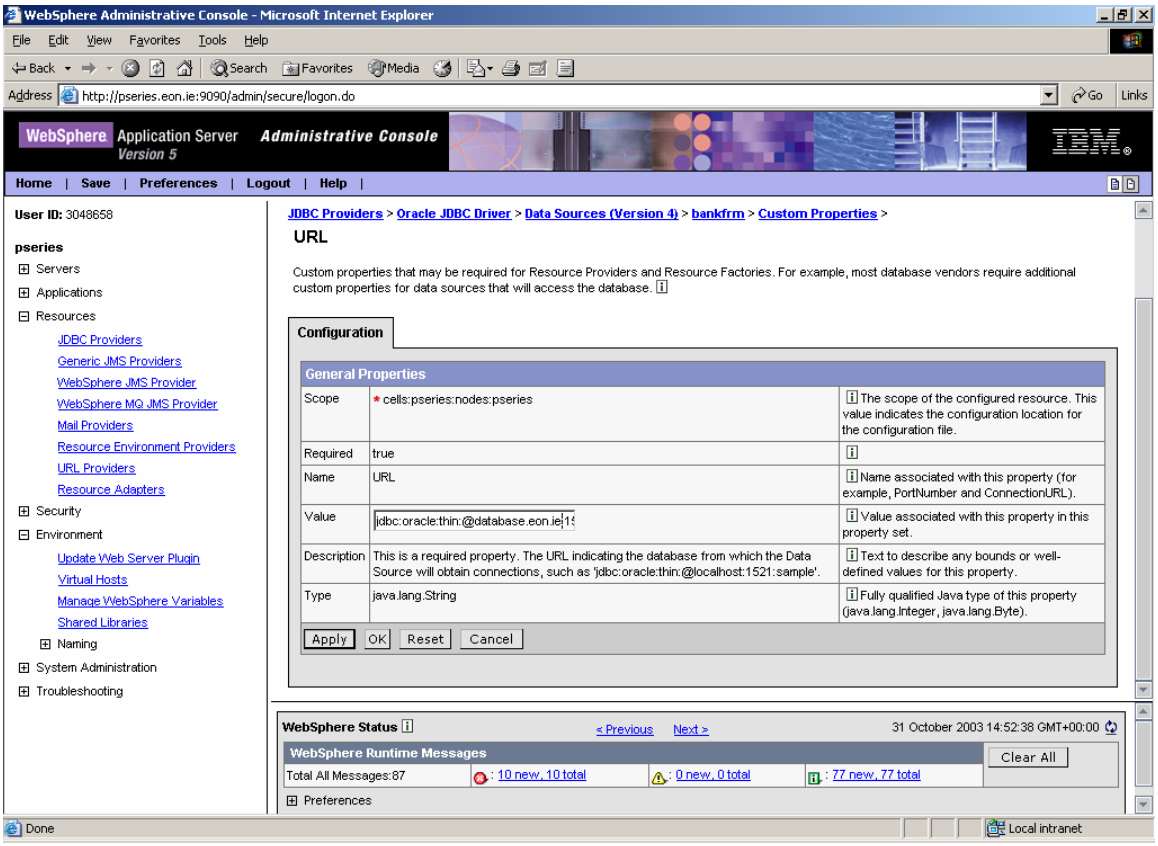
Click Apply to save the information. The following screen is then displayed:



Click on `Custom Properties` to display the following screen:



Click URL to display the following screen:



Enter the value of the jdbc URL, which should be similar to `jdbc:oracle:thin:@databaseservername:1521:bankfrm`. Click on Apply and then follow the usual save procedure. Here the databaseservername specifies the server on which Oracle is installed.

Configuring the JNDI Default Data Source Binding

For deployable EAR files in WebSphere Application Server 5.1, you must specify a default data source and authentication criterion. In this release this is set to `jndi name:bankfrm`, `user: bankfrm`, and `password:bankfrm`. This criterion is consistent with the database create scripts. If you wish to change these settings, import the EAR file into WebSphere Studio Application Developer (WSAD). In the J2EE Hierarchy perspective, double click on the EJM Module WebSphere-MCAEJBs. The JNDI Default Data Source Binding screen is then displayed with the EJB Deployment Descriptor.

Change the fields in the **JNDI – Default DataSource Binding** settings as appropriate, save the changes, and re-export the EAR file for re-deployment on the application server.

Changing the Database and Schema Settings

For deployable EAR files in WebSphere Application Server 5.1, you must change the database name and schema to which the EJBs are mapped. You do this by importing the EAR file into WSAD. When you have imported the EAR file, open the J2EE Navigator perspective and navigate to the folder `WebSphere-MCAEJBs/ejbModule/META-INF/Schema`.

Configure the Database name field - double click on the `.dbxmi` file and modify.

To change the schema name, double click on the `.schxmi` file and modify the field. Specifying the schema name as NULLID allows the EAR file to be deployed on any schema on the specified database.

Save modifications and re-export the EAR file for re-deployment on the application server.

Configuring JMS Settings

The following sections describe how to configure Java Message Service (JMS) settings.

Configuring WebSphere Topic Connection Factories

Navigate to Resource > WebSphere JMS Provider from the left hand pane. The resulting page has additional Properties associated with JMS.

Navigate to Select the WebSphere Topic Connection Factories. Click New to add a new Topic Connection Factory. In the General Properties screen, complete the following fields:

- Name – exampleTopic
- JNDI Name - eontec/jms/TopicConnectionFactory

At the bottom of the screen XA must also be enabled. Save the changes.

Configuring Websphere Topic Destinations

Navigate to `Resource > WebSphere JMS Provider` from the left hand pane. The resulting page has additional Properties associated with JMS; select WebSphere Topic Destinations.

Click on New to add a new Topic Destination. On the next screen, complete the following fields:

- Name – exampleTopic
- JNDI Name – eontec/jms/exampleTopic.
- Topic – eontec/jms/exampleTopic

Save the changes.

Configuring the Listener

To configure the listener:

1. Navigate to Servers > Application Servers from the left hand pane.
2. Select server1.
3. On the next screen, select Message Listener Service from the list of Options
4. Select Listener Ports
5. Select New on the next page, and a new screen is displayed. On the configuration tab, complete the following fields:
   - Name – eontecListener
   - Initials State - started
   - Connection Factory JNDI Name – eontec/jms/TopicConnectionFactory
   - Destination JNDI Name – eontec/jms/exampleTopic
6. Save the changes.

Editing the Properties Files

Before MCA Services is uploaded onto the server, you must edit the files `BankframeResource.properties` and `TestCustomerData.properties` in the `siebel.ear` file for local settings.

The file `siebel.ear` will have been extracted to `<WebSphere Root>FoundationServices\deploy\`

Extract the files `BankframeResource.properties` and `TestCustomerData.properties` from the file `siebel.ear` to a local directory.

Editing TestCustomerdata.properties

Open the `TestCustomerData.properties` file in a text editor - the following setting appears on the last line:

`this.absolutePath=\`*`installationroot`*`\WebSphere\AppServer\installedApps\`*`hostname`*`\siebel.ear\TestCustomerData.properties`

where *`installationroot`* is the WebSphere installation root and *`hostname`* is the URL/IP address of the machine that WebSphere is running on. You must reset this setting to point to the location of the `TestCustomerData.properties` file on your server. You must change the path in two places, as follows:

- *installationroot* is typically C:\Program Files for Windows and /apps for Unix based machines.
- *hostname* is the name of the machine (without domain suffixes) on which the WebSphere installation resides.

When you have changed these settings, copy the path (everything to the right of `this.absolutePath=`) and save `the TestCustomerData.properties` file.

Editing BankframeResource.properties

Now open the properties file `BankframeResource.properties` in a text editor and do the following:

1. Search for the string `transactionHandler.test.customerData=`. Replace all text to the right of this string with the text copied from the previous step and save the change. The transactionHandler.test.customerData setting should now also point to the location of the TestCustomerData.properties.
2. Search for the string `ejb.server=`. Replace all text to the right of this string with iiop://localhost where localhost is the machine name complete with domain suffixes.
3. Search BankframeResource.properties for the string `channel.http.client.url=`. Replace all text to the right of this string with http://localhost:9080/BankFrameMCA/HttpServer where localhost is the machine name complete with domain suffixes.
4. After saving all changes select the two modified files, right click on them and select Add to Zip'
5. Browse to the EAR file they were extracted from and add them. The EAR file is now ready to install on the server.

Installing MCA Services on WebSphere

In the WebSphere Web Browser Console, navigate to `Applications > Enterprise Applications` from the left hand pane. A list of all applications already deployed and running is displayed. Click Install to display the Preparing for the application installation screen.

Click browse to locate the file `siebel.ear` on the local machine. Select the file and click Next. This action uploads the `siebel.ear` file from the local machine to the server, be it on a remote machine or on the local machine itself. The App Deployment Options screens are then displayed.

Application Deployment Options

The App Deployment Options screens are used to install the EAR file on the server. However, the default values for all these options are pre-filled from uploading the `siebel.ear` file, so there is no need to alter any of the options over the nine pages. Simply click Next at the bottom of each of the pages until the final confirmation page is displayed.

Click Finish and the EAR file is displayed. Successful installation of the EAR file results in the display of an Application Installed Successfully screen.

You must now save the installation in the usual way. Successfully saving results in the home page being displayed. From the home page, navigate to `Applications > Enterprise Applications` and a list of installed applications is displayed.

3 Running MCA Services

When MCA Services is installed, there is a red X to the right of the `siebel` application, indicating that the application is installed but not running.

To run MCA Services, select the option box to the left of the `siebel` application and click the `Start` button. Save the changes when prompted.

Finally, navigate to the `Applications > Enterprise Applications` screen from the left hand menu and the list of installed applications appears again. A green arrow is then displayed to the right of the `siebel` application indicating that the application is running.