CICS Transaction Gateway Configuration

Deploying the ECIDateTime and EPIPlay JCA samples into WebSphere Application Server Version 5.1

Version 5.1

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Chapter 1. Overview

This document describes how you can use enterprise beans to make CCI calls to COMMAREA-based CICS® programs and existing terminal-based CICS transactions.

The beans are managed by WebSphere® Application Server. They issue ECI or EPI requests to the CICS Transaction Gateway, which then passes the calls to the remote CICS Transaction Server. The examples use the `local:` protocol. This requires the Gateway to be installed on the same machine as the WebSphere Application Server.

The document assumes that both WebSphere Application Server and the CICS Transaction Gateway have been installed and configured correctly. It tells you what you need to do in WebSphere to:

- Deploy EPI and ECI resource adapters
- Create Connection Factories
- Install the enterprise application
- Run sample applications to check your configuration
- Use signon authentication with the EPI resource adapter

The enterprise application archives (EAR files) that you need to run the samples are supplied as files `ECIDateTime.ear` and `EPIPlayScript.ear`. To edit these files, or create new EAR files, use a product such as IBM® WebSphere Studio Application Developer or the Assembly Toolkit for WebSphere Application Server.

This document is written for IBM WebSphere Application Server for Windows®, and can be used as the basis for installing the samples into other distributed versions of WebSphere Application Server.

Chapter 2. Software checklist and prerequisites

Prerequisites

- You have installed and correctly configured the CICS Transaction Gateway. The following protocols can be used for communication between the CICS Transaction Gateway and the server:

API	Protocols allowed
ECI	Any supported
EPI	SNA or TCP62

- You have a supported level of Java™ installed.

Software checklist

WebSphere computer

We used the following software:

- Windows XP Professional
- IBM WebSphere Application Server 5.1
- IBM CICS Transaction Gateway Version 5.1

Server host

We used the following software on the server host:

- IBM CICS TS 2.2 running on z/OS® V1R4
- The EC01 program and the EP02 transaction supplied with CICS Transaction Gateway

Software checklist and prerequisites

Chapter 3. Deploying the ECI sample

Deploying the ECI resource adapter

In this section you will learn how to specify the resource adapter that WebSphere should use when it creates Connection Factories for ECI connections to CICS.

Note:

This section uses the terms <install_path> and <appserver_path>. The meaning of these terms, assuming a default installation, is as follows:

<install_path>
C:\Program Files\IBM\IBM CICS Transaction Gateway

<appserver_path>
C:\Program Files\WebSphere\AppServer

1. Deploy program EC01 into your CICS region.
2. Start the WebSphere Application Server, by clicking **Start->Programs->IBM WebSphere->Application Server v5.1->Start Server**.
3. Start the WebSphere Administrative Console, by clicking **Start->Programs->IBM WebSphere->Application Server v5.1->Administrative Console**.
4. Log in. We do not use security in this sample, so any name you enter here is for audit purposes only. The screen shown in Figure 1 on page 6 is displayed:

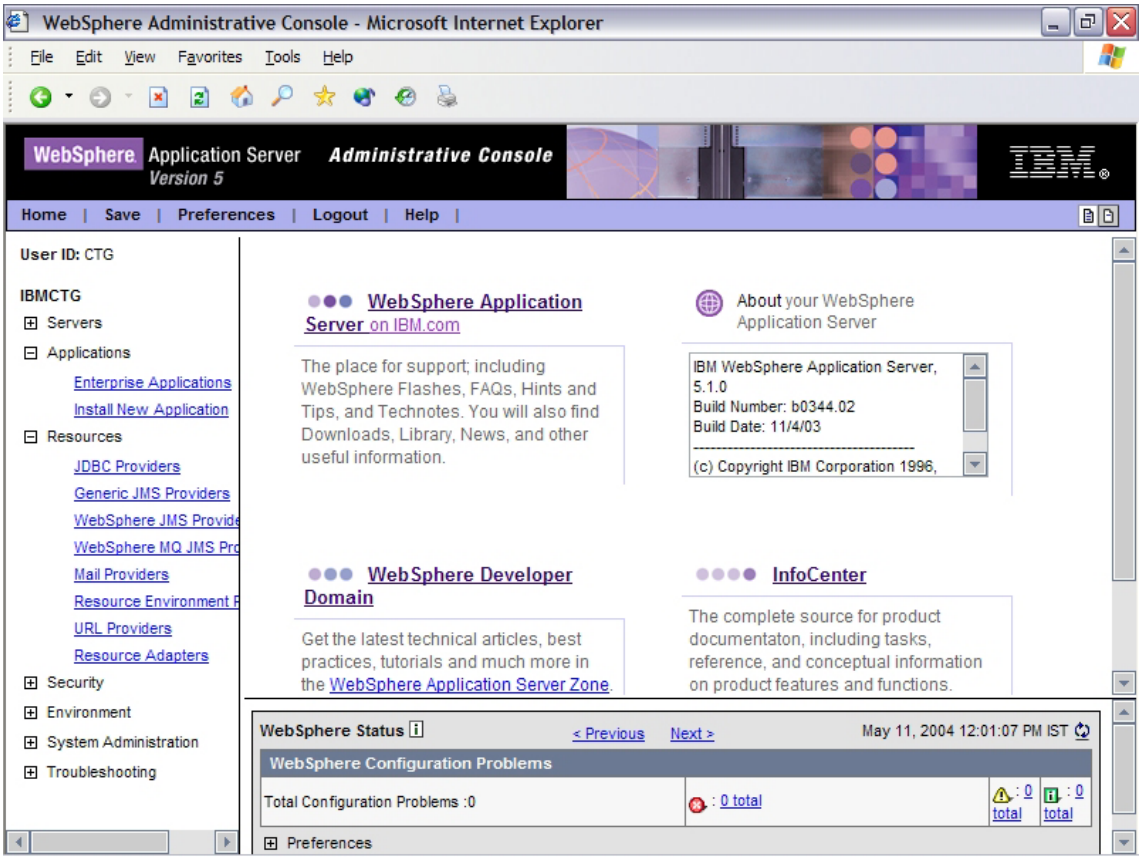

Figure 1. WebSphere Administrative Console

5. Expand **Resources** in the tree on the left and then click **Resource Adapters**.

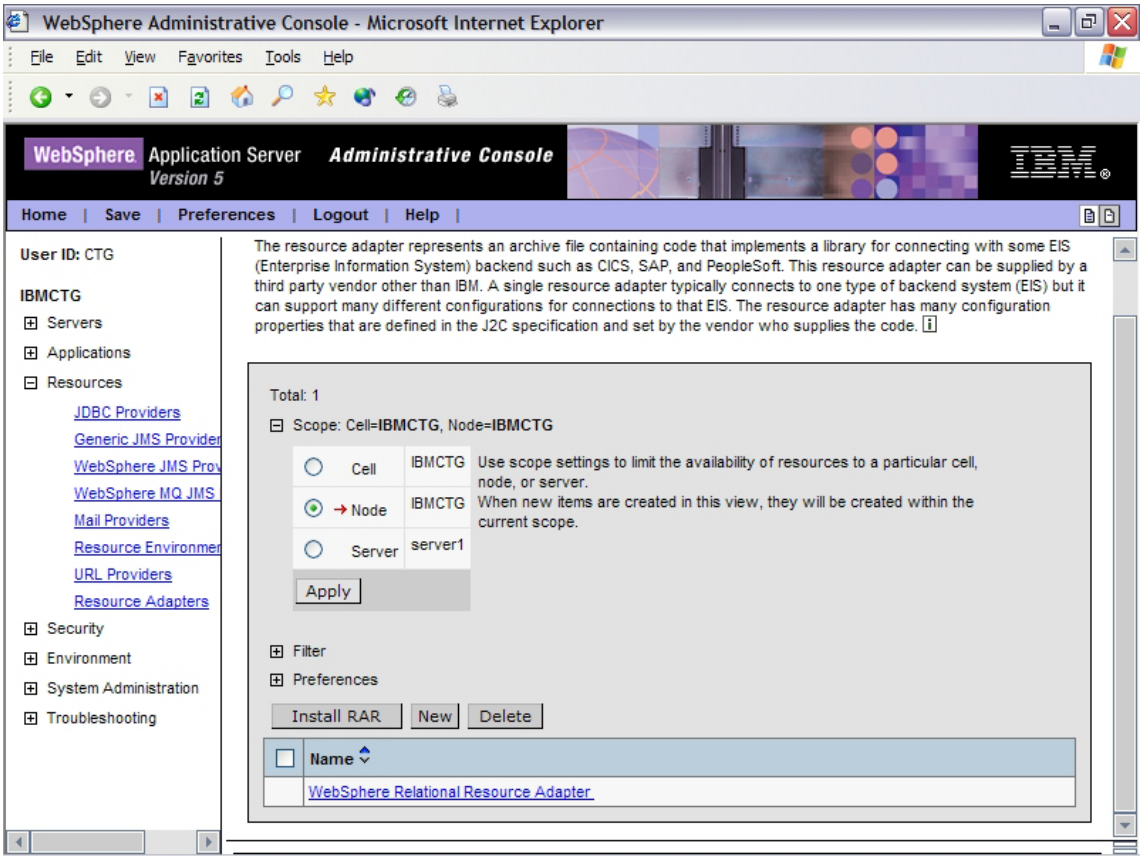

Figure 2.

6. In the panel on the right of the screen click **Install RAR**; see Figure 2. Scroll down if necessary to see this button.
7. Set the file name to the following value:

   ```
   <install_path>\deployable\cicseci.rar
   ```

   Note: Use **Browse** if necessary to find this file.
8. Click **Next**.
9. Click **OK** on the Configuration screen that is displayed. This creates a resource adapter using the default values contained within the `cicseci.rar` archive file.
10. Click **Save** (either on the menu bar or the hyperlink); see Figure 3 on page 8:

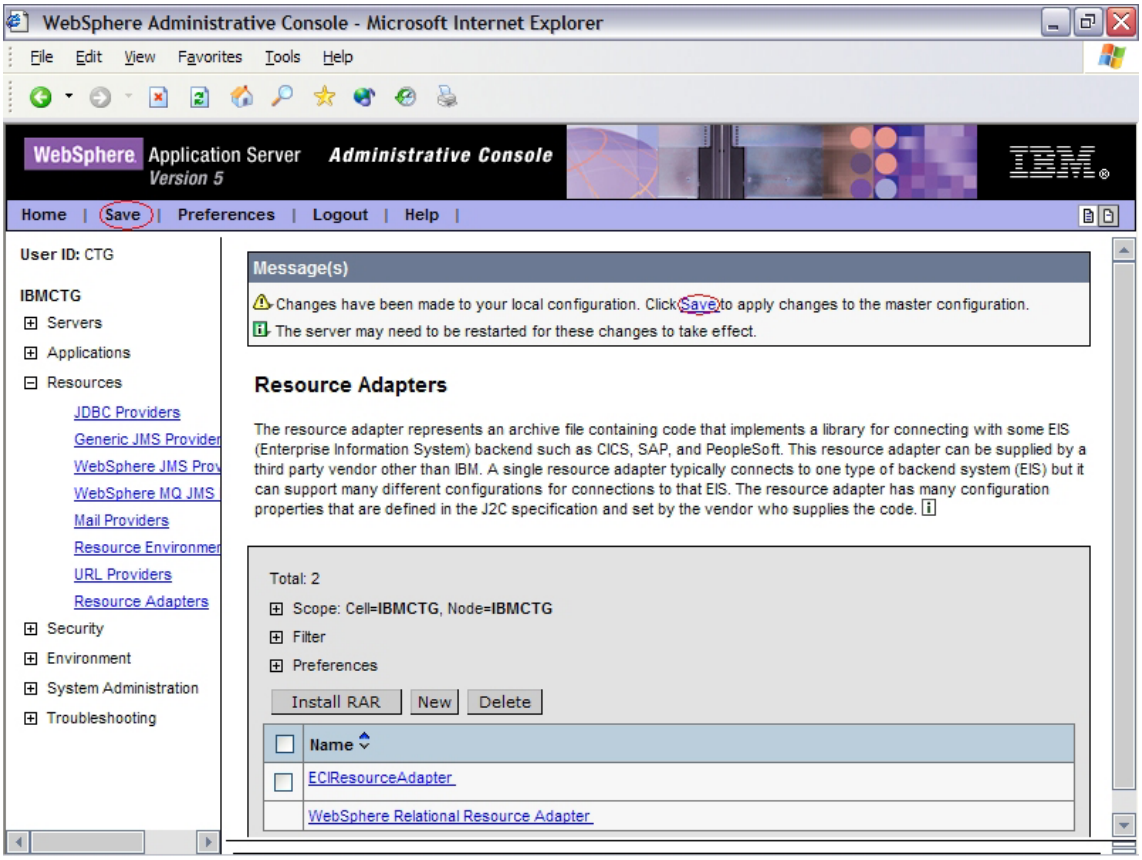

Figure 3. Save the configuration

11. Click **Save** on the Save to Master Configuration panel that is displayed. You return to the home page of the WebSphere Administrative Console.

Creating a Connection Factory

In this section you will create a Connection Factory using the resource adapter that you just notified to WebSphere.

1. Expand the **Resources** on the tree to the left of the screen.
2. Click **Resource Adapters**.
3. Click ECIResourceAdapter (the resource adapter that you just installed). Click the text, not the checkbox.
4. On the screen that is displayed, scroll down if necessary to the **Additional Properties** panel, and click **J2C Connection Factories**.
5. Click **New** as shown in Figure 4.

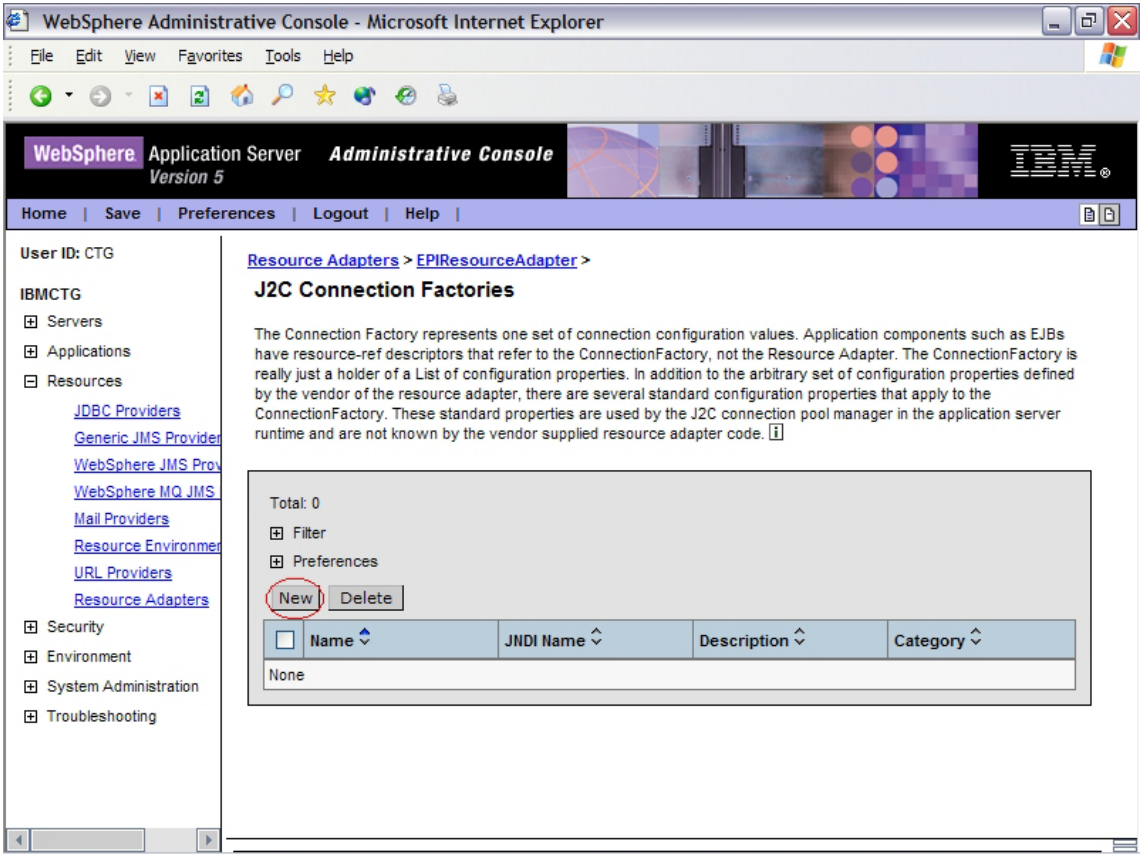

Figure 4. Creating a new connection factory

6. Enter a value in the **Name** field to identify the Connection Factory, and then click **OK**. We used the name **ECI**.

7. On the screen that is displayed, click **ECI**, as shown in Figure 5:

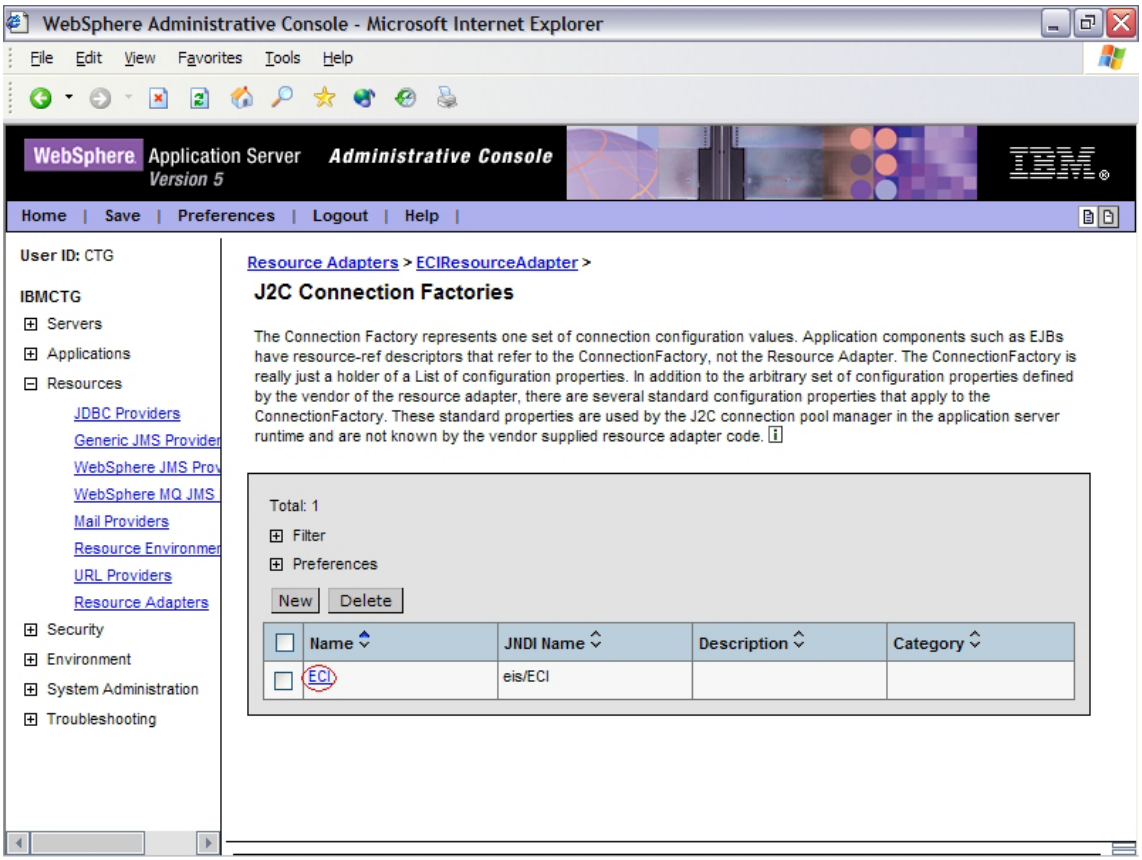

Figure 5. J2C Connection Factories screen

8. On the screen that is displayed, scroll down if necessary to the **Additional Properties** area, and click **Custom Properties**.
9. The Custom Properties screen is displayed. Scroll down if necessary to view all fields. From this screen you will enter values for the **UserName**, **ConnectionURL**, **ServerName**, and **Password** fields.
10. Click **ServerName** in the **Name** column. In the screen that is displayed, click in the Value field, and then enter the name of your CICS region as defined in CTG.INI. Click **OK** to return to the Custom Properties screen.

11. Repeat the actions in Step 10 on page 10 for these fields:

Field	Value
ConnectionURL	The connection URL of the CICS Transaction Gateway (either the URL or the IP address of the machine). If the CICS Transaction Gateway is installed on the same computer as WebSphere Application Server, you can use the *local:* value.
Password	If security is enabled, enter the password that you use to connect to CICS.
UserName	If security is enabled, enter the user name that you use to connect to CICS.

Figure 6 shows how the screen should look once you have entered values for these fields:

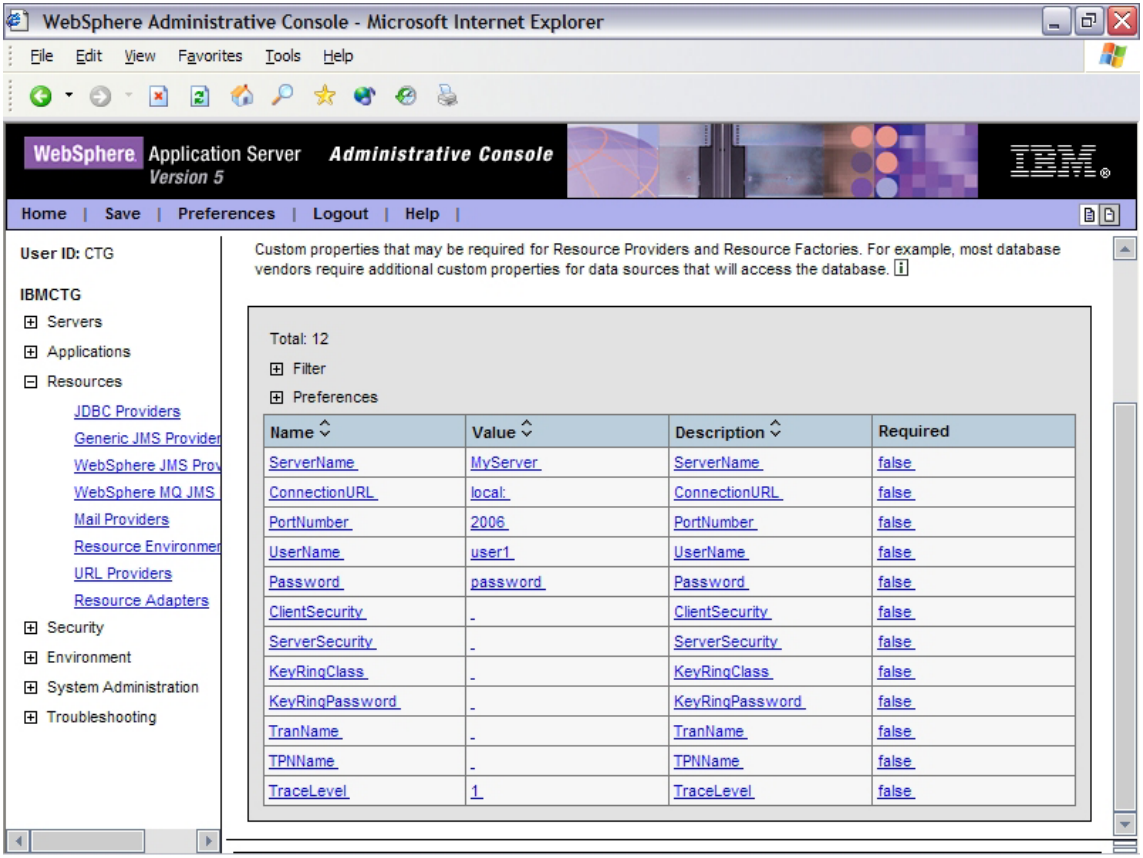

Figure 6. Completed Custom Properties screen

12. Click **Save** twice to return to the WebSphere Administrative Console initial screen.

Deploying the ECI EAR file

1. Copy the supplied file `ECIDateTime.ear` to `<appserver_path>\InstallableApps\ECIDateTime.ear`.
2. Start the WebSphere Administrative Console by clicking **Start->Programs->IBM->IBM WebSphere->Application Server v5.1-Administrative Console**.
3. Log in. We do not use security in this sample, so any name you enter is for audit purposes only.
4. In the navigation panel on the left of the screen, expand Applications and then click **Install New Application**.
5. In the **Local path** field, specify the EAR file (`<appserver_path>\InstallableApps\ECIDateTime.ear`) that you copied in step 1. Your screen should look like Figure 7:

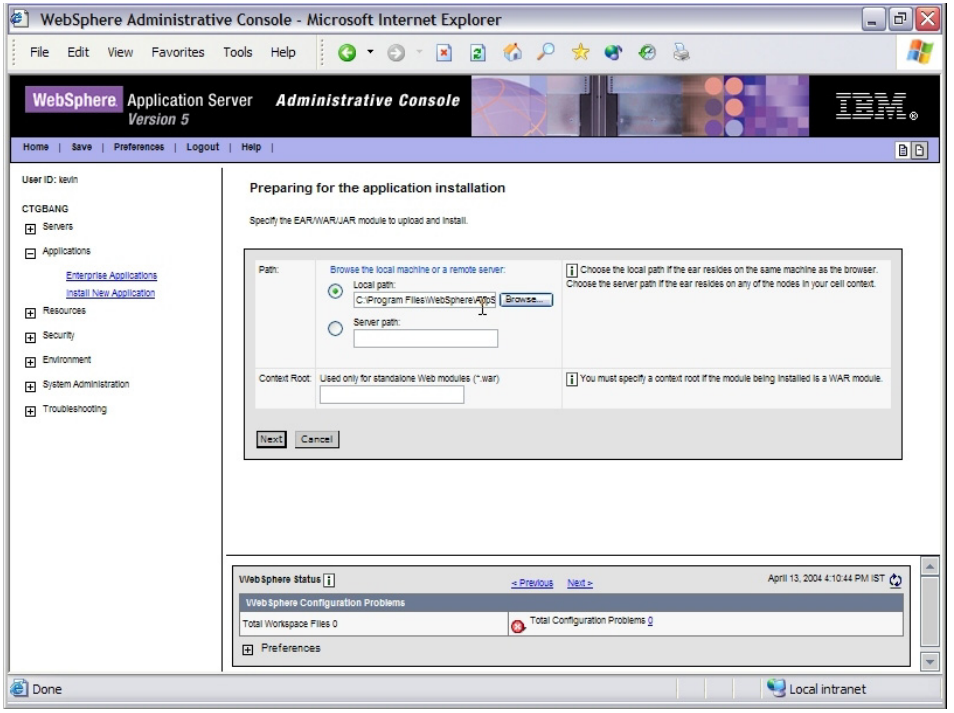

Figure 7. Preparing for the application installation

6. Click **Next** three times. **Step 2: Provide JNDI Names for Beans** of the Install New Application screen is displayed, as shown in Figure 8 on page 14:

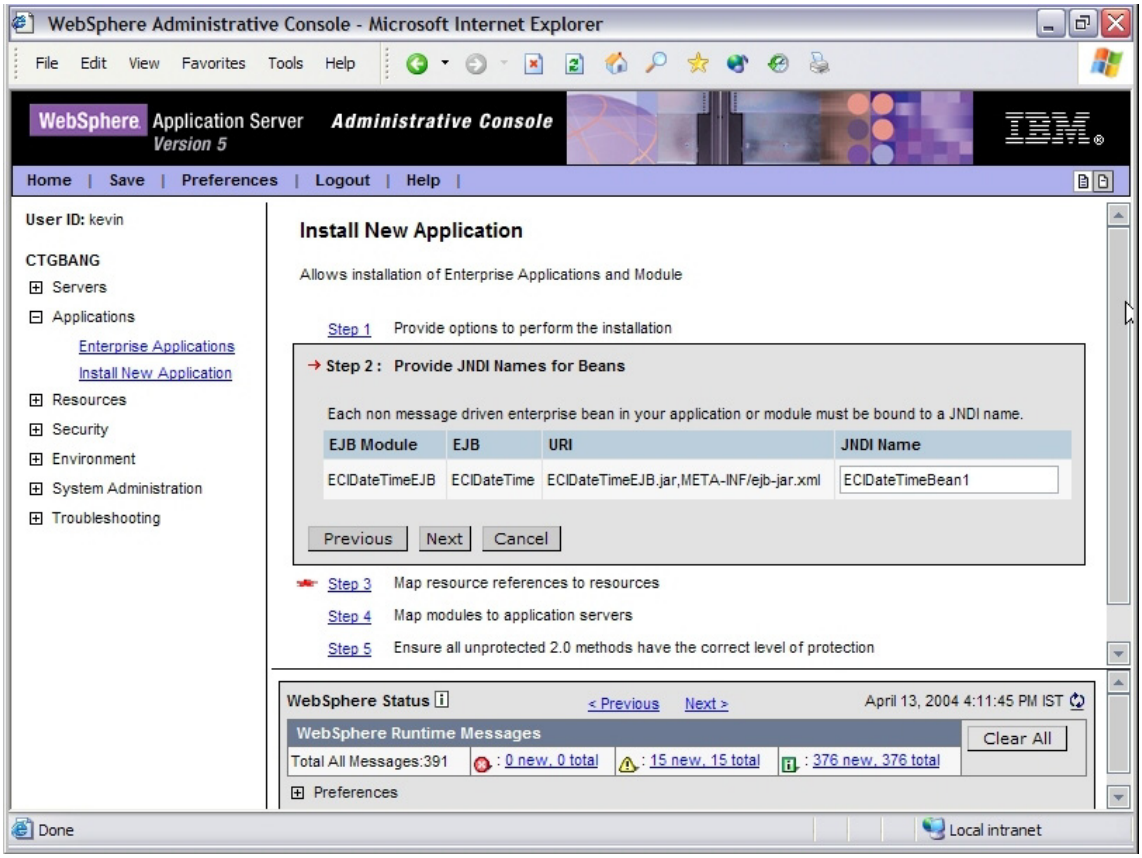

Figure 8. Step 2: Provide JNDI Names for Beans

Delete the entire contents of the **JNDI Name** field, and enter **ECIDateTimeBean1** in its place.

7. Click **Next**.
8. In **Step 3: Map resource references to resources**, take the following steps:
   a. Check the module to which the resource JNDI name needs to be attached.
   b. In the **Specify existing Resource JNDI name** field, select **eis/ECI**. This will be preceded by the name of your computer. Figure 9 on page 15 shows how your screen should look:

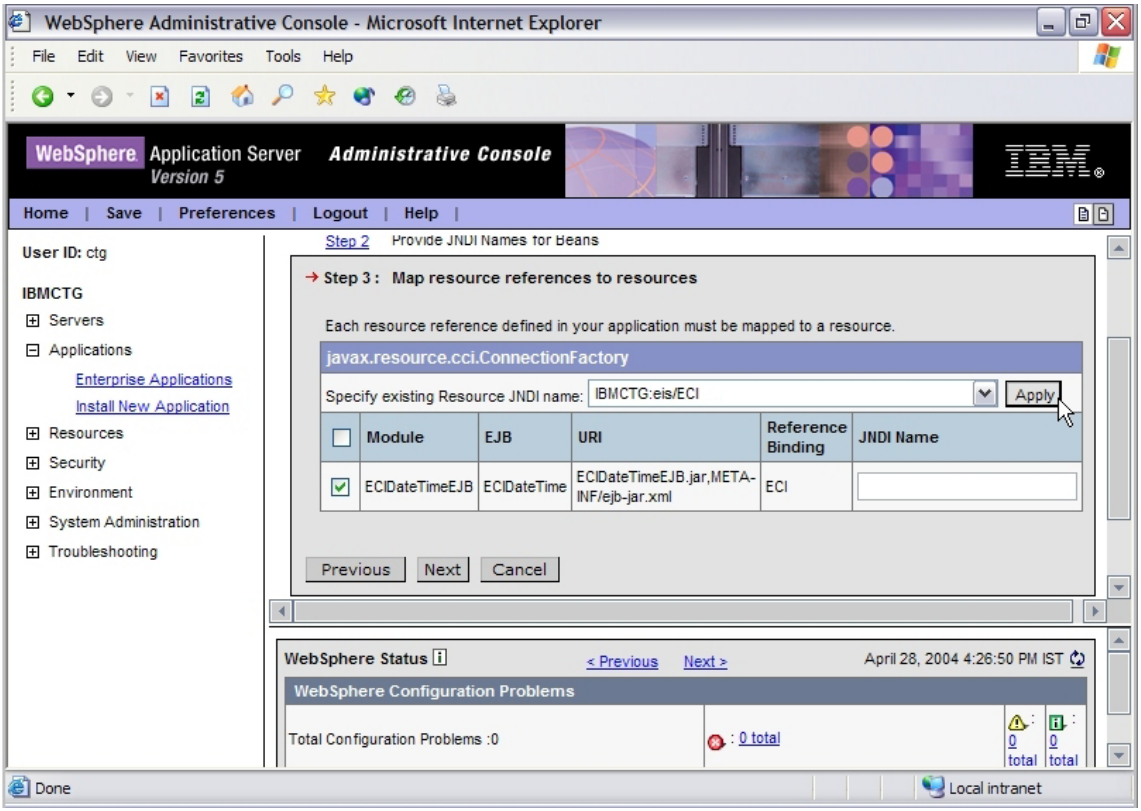

Figure 9. Map resource references to resources

c. Click **Apply** to enter the Resource JNDI name into the **JNDI Name** field for the selected module.

d. Click **Next** until the Summary screen is displayed.

9. Click **Finish** on the Summary screen.
10. Read the message to check that the application has been installed successfully.
11. Click **Save to Master Configuration**, and then click **Save**.

Starting the application

1. In the navigation panel on the left of the screen, click **Enterprise Applications**. A list of available applications is displayed on the right of the window.
2. Scroll down if necessary and select the check box next to ECIDateTime, as shown in Figure 10 on page 16:

Starting the ECI application

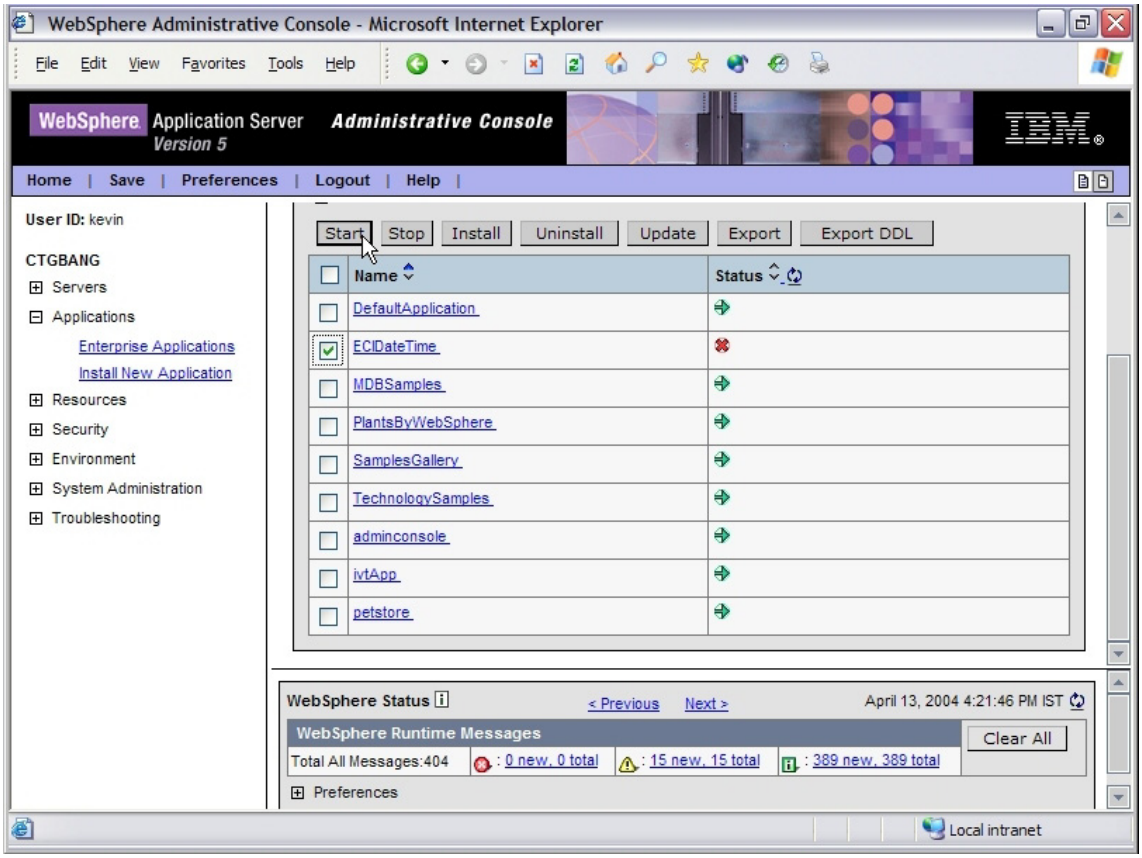

Figure 10. Enterprise applications

3. Click **Start**.
4. Read the message to confirm that the application has started.

Running the ECI sample client application

1. Enter the following at a command prompt:

   ```
   cd <appserver_path>\bin
   launchclient "<appserver_path>\installableApps\ECIDateTime.ear"
   ```

   Note: The quotation marks are necessary if your path names contain spaces.
2. The result is output stating the current date and time:

```
 C:\>cd C:\Program Files\WebSphere\AppServer\bin
C:\WebSphere\AppServer\bin>launchclient "C:\WebSphere\AppServer\installableApps\
ECIDateTime.ear"
IBM WebSphere Application Server, Release 5.1
J2EE Application Client Tool
Copyright IBM Corp., 1997-2003
WSCL0012I: Processing command line arguments.
WSCL0013I: Initializing the J2EE Application Client Environment.
WSCL0035I: Initialization of the J2EE Application Client Environment has complet
ed.
WSCL0014I: Invoking the Application Client class com.ibm.ctg.samples.j2ee.ECIDat
eTimeClient
CICS Date/Time=28/04/04 12:15:55
C:\WebSphere\AppServer\bin>
```

Running the ECI sample client application

Chapter 4. Deploying the EPI sample

Deploying the EPI resource adapter

In this section you learn how to specify the resource adapter that WebSphere will use when it creates Connection Factories for EPI connections to CICS.

Note:

This section uses the terms <install_path> and <appserver_path>. The meaning of these terms, assuming a default installation, is as follows:

<install_path>
C:\Program Files\IBM\IBM CICS Transaction Gateway

<appserver_path>
C:\Program Files\WebSphere\AppServer

Proceed as follows:

1. Deploy program EP02 to CICS.
2. Define transaction EP02 for program EP02.
3. Start the WebSphere Application Server, by clicking **Start->Programs->IBM WebSphere->Application Server v5.1->Start Server**.
4. Start the WebSphere Administrative Console, by clicking **Start->Programs->IBM WebSphere->Application Server v5.1->Administrative Console**.
5. Log in. We do not use security in this sample, so any name you enter here is for audit purposes only. The screen shown in Figure 11 on page 20 is displayed:

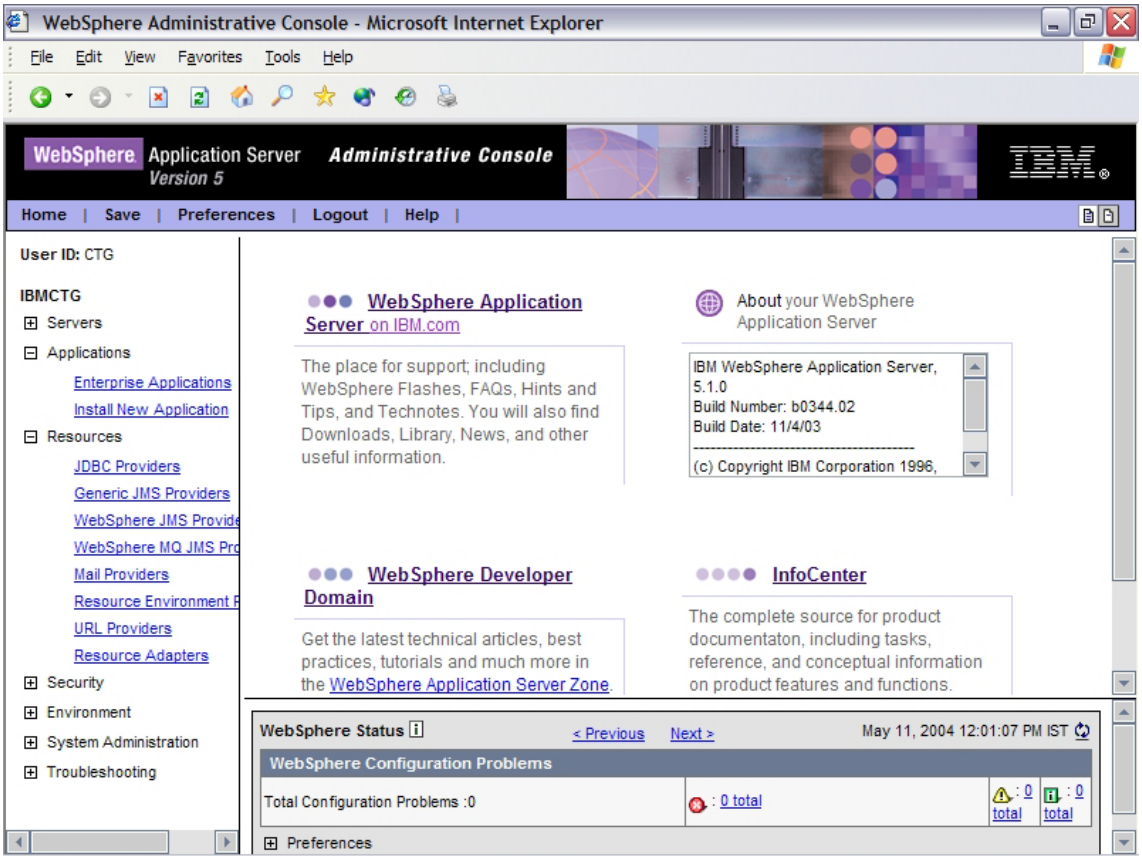

Figure 11. WebSphere Administrative Console

6. Expand **Resources** in the tree on the left, and then click **Resource Adapters**.

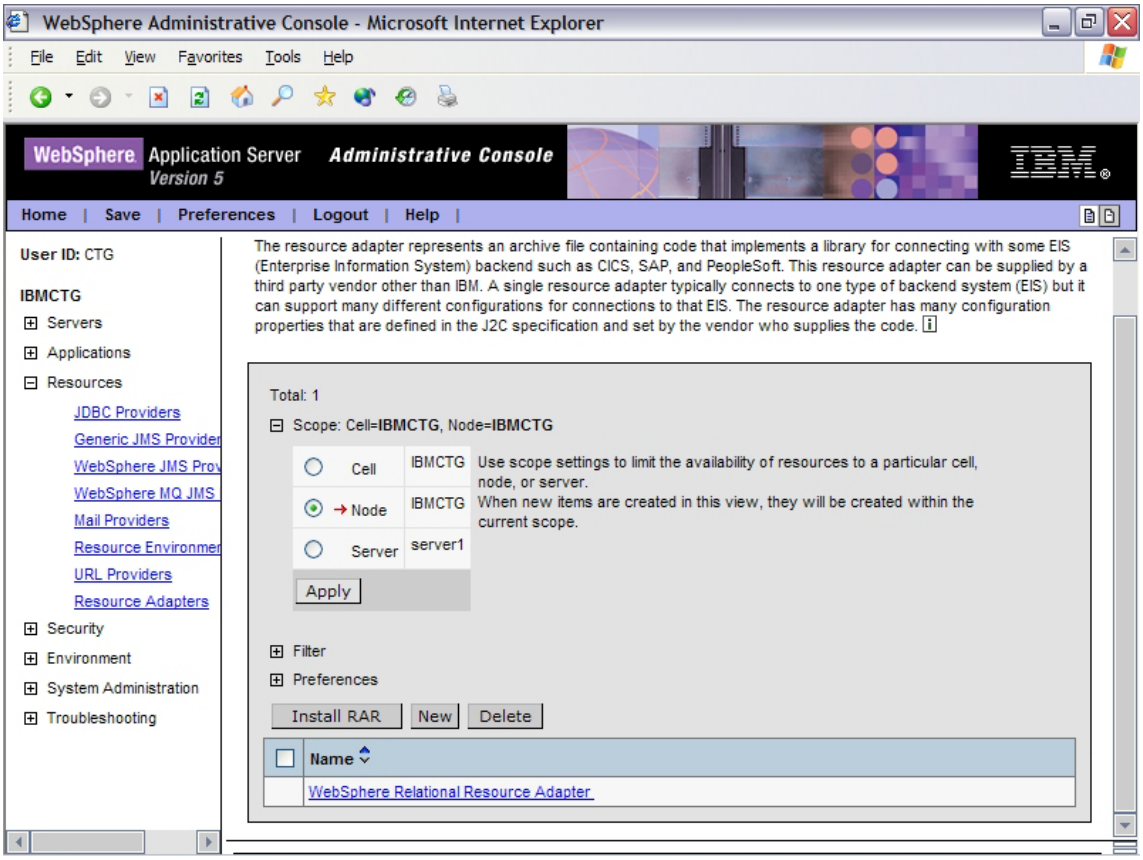

Figure 12.

7. In the panel on the right of the screen click **Install RAR**. Scroll down if necessary to see this button.
8. Set the File name to the following value:

   ```
   <install_path>\deployable\cicsepi.rar
   ```

   Note: Use **Browse** if necessary to find this file.
9. Click **Next**.
10. Click **OK** on the Configuration screen that is displayed. This creates a resource adapter using the default values contained within the `cicsepi.rar` file.
11. Click **Save** (either on the menu bar or the hyperlink).
12. Click **Save** on the Save to Master Configuration panel that is displayed. You return to the home page of the WebSphere Administrative Console.

Creating a Connection Factory

In this section you will create a Connection Factory using the resource adapter that you just notified to WebSphere.

1. Expand the **Resources** on the tree to the left of the screen.
2. Click **Resource Adapters**.
3. In the main panel, click EPIResourceAdapter (the resource adapter that you just installed). Click the text, not the checkbox, as shown in Figure 13:

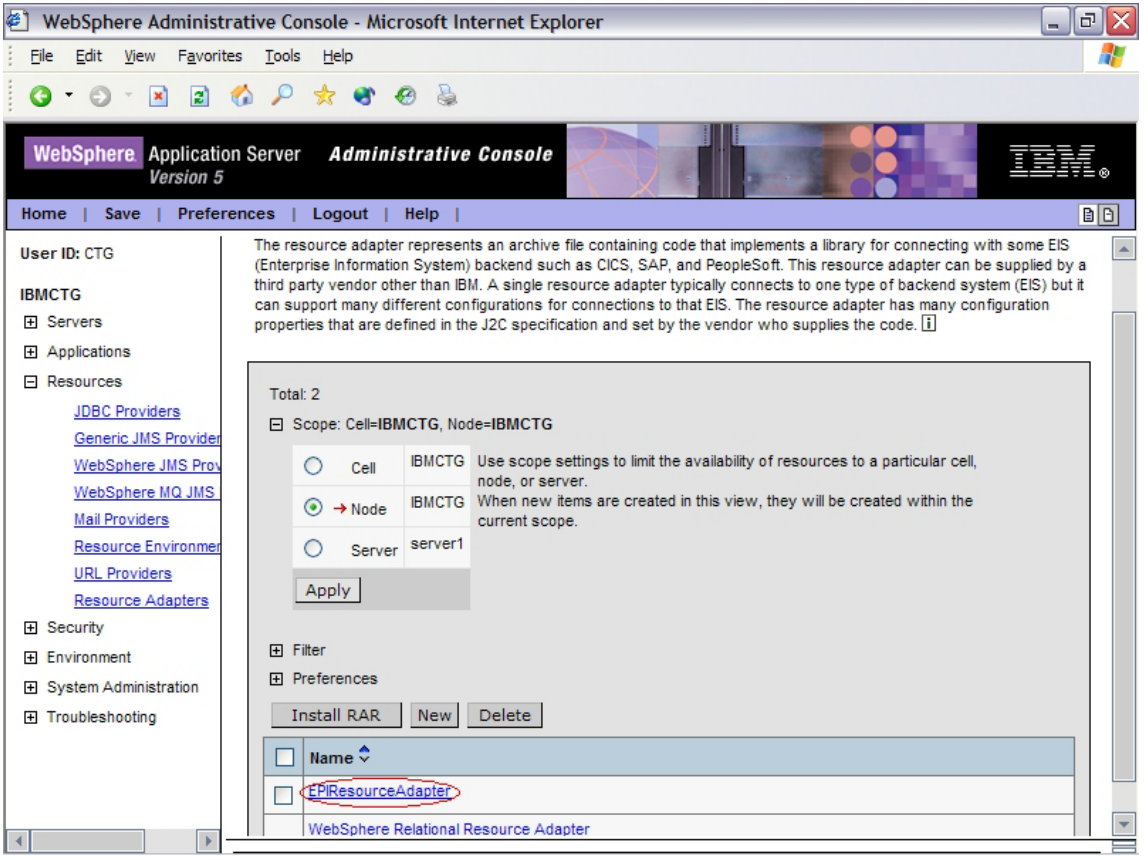

Figure 13.

4. On the screen that is displayed, scroll down if necessary to the **Additional Properties** panel, and click **J2C Connection Factories**, as shown in Figure 14 on page 23:

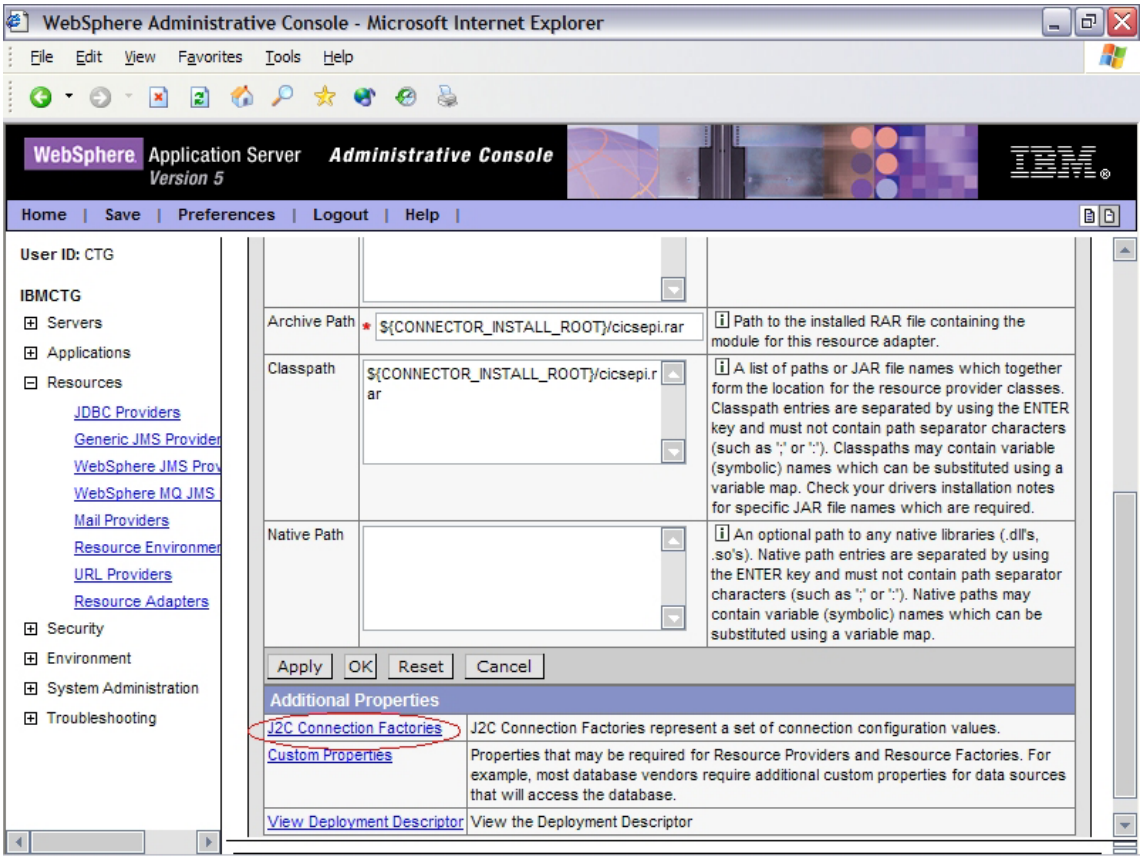

Figure 14.

5. Click new as shown in Figure 15 on page 24.

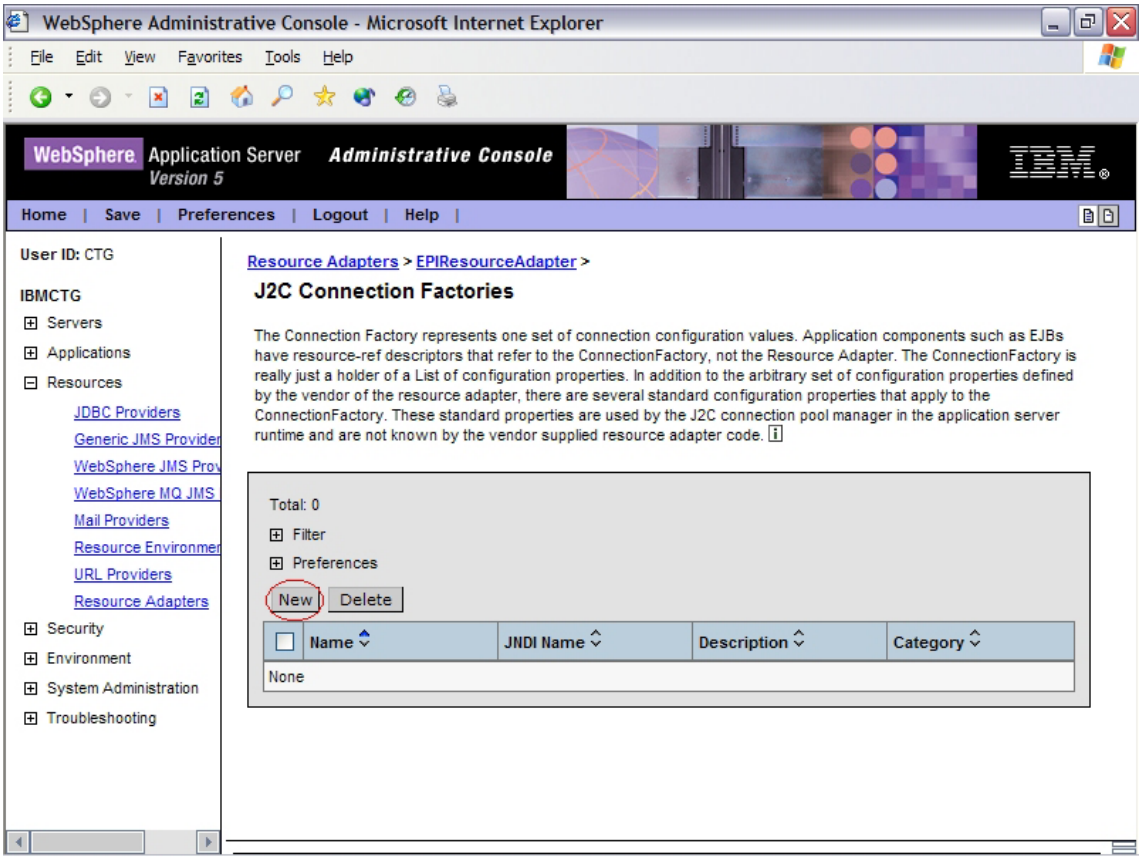

Figure 15. Creating a new connection factory

6. Enter a value in the **Name** field to identify the Connection Factory, and then click **OK**. We used the name **EPI**.
7. On the screen that is displayed, click **EPI**, as shown in Figure 16 on page 25:

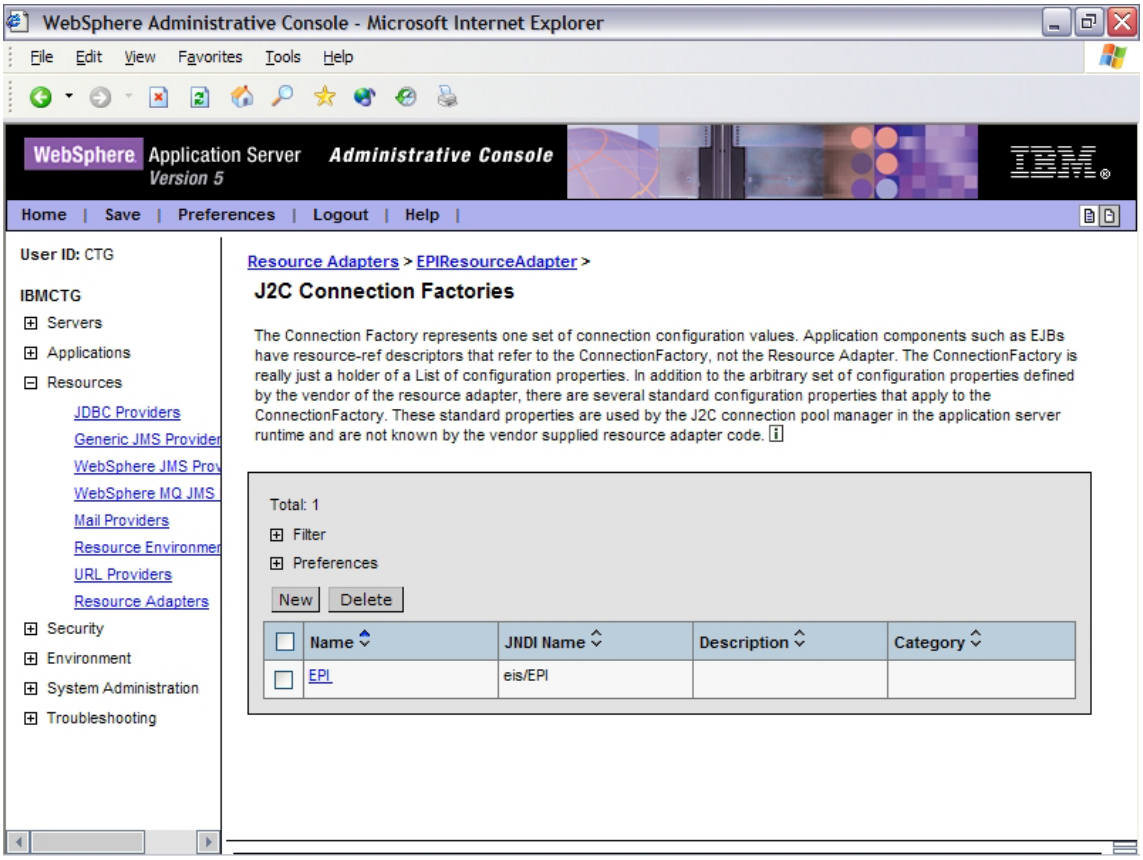

Figure 16. J2C Connection Factories screen

8. On the screen that is displayed, scroll down if necessary to the **Additional Properties** area, and click **Custom Properties**.
9. The Custom Properties screen shown in Figure 17 on page 26 is displayed. Scroll down if necessary to view all fields.

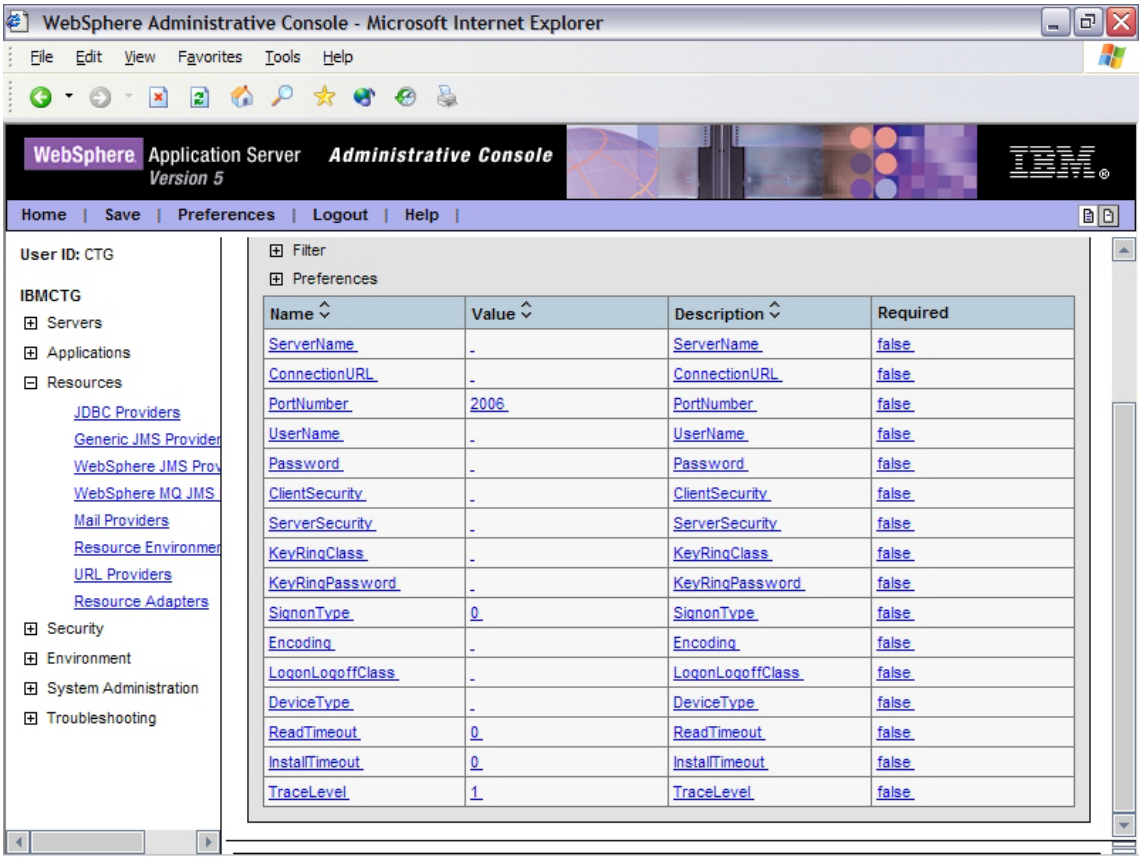

Figure 17. Custom Properties screen

From this screen you will enter values for the **UserName**, **ConnectionURL**, **ServerName**, and **Password** fields in the **Name** column.

10. Click **ServerName**. In the screen that is displayed, click in the Value field, and then enter the name of your CICS region as defined in CTG.INI. Click **OK** to return to the Custom Properties screen.
11. Repeat the actions in Step 10 for these fields:

Field	Value
ConnectionURL	We use a value of *local:*
Password	If security is enabled, the password that you use to connect to CICS.
SignonType	0
UserName	If security is enabled, enter the user name that you use to connect to CICS.

Figure 18 shows how the screen should look once you have entered values for these fields:

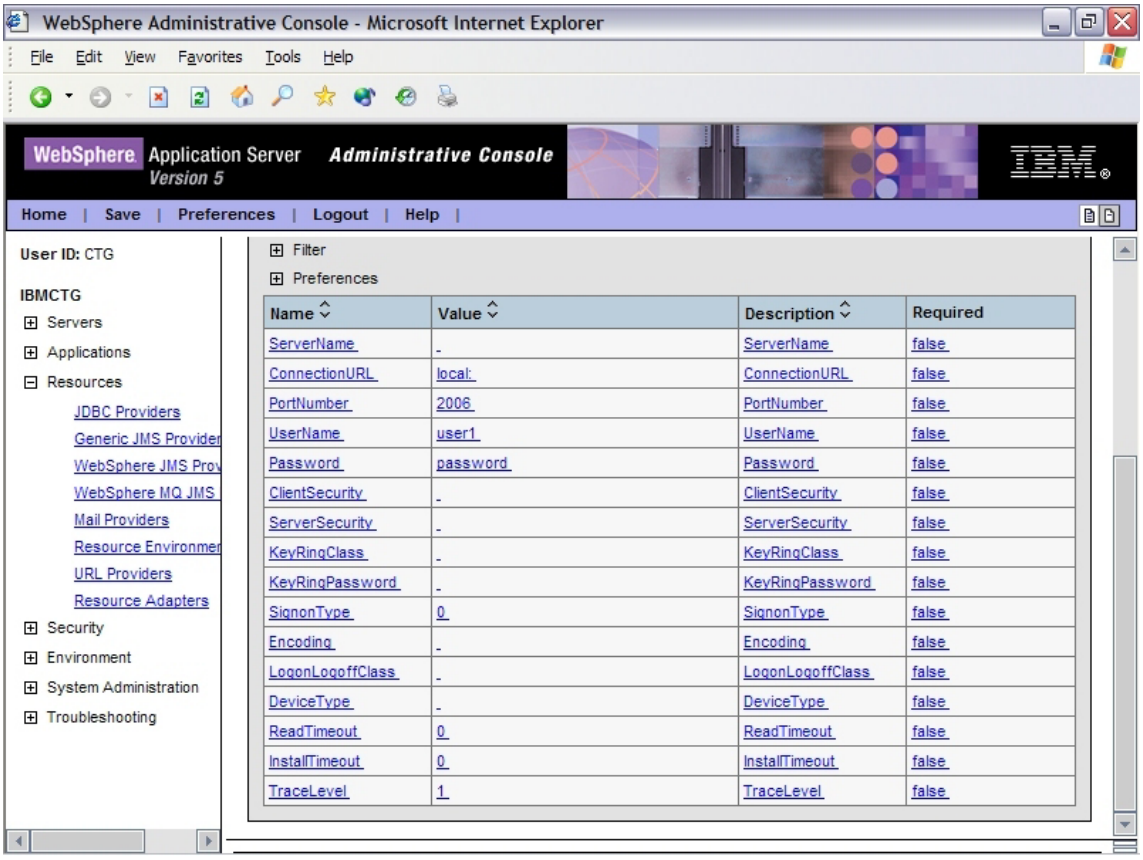

Figure 18. Completed Custom Properties screen

12. Click **Save** twice to return to the WebSphere Administrative Console initial screen.

Deploying the EPI EAR file

You will now install the supplied EAR file into WebSphere.

1. Copy the supplied file `EPIPlayScript.ear` to `<appserver_path>\InstallableApps\EPIPlayScript.ear`.
2. In the tree on the left, fully expand the **Applications** node.
3. Click **Install New Application**.
4. In the **Local path** field, specify the EAR file (`<appserver_path>\InstallableApps\EPIPlayScript.ear`) that you copied in step 1.
5. Click **Next**.
6. Click **Next** on the **Preparing for the application installation** panel.
7. Click **Next** on **Step 1: Provide options to perform the installation**.
8. On the **Step 2: Provide JNDI names for Beans** panel, delete the entire contents of the JNDI Binding name and enter `EPIPlayScriptBean1`.
9. Click **Next**.
10. In the Map resource references to resources panel, do the following:
    a. Select the checkbox
    b. From the dropdown, select **eis/EPI**. This will be preceded by the name of the machine.
    c. Click **Apply** to complete the field.
11. Click **Next** three times.
12. On the Summary window, click **Finish**.
13. Read the message to check that the application has been installed correctly.
14. Click **Save to Master Configuration**, and then click **Save**.

Starting the application

1. In the WebSphere Administrative Console, expand the Applications node.
2. Click **Enterprise Applications**.
3. In the list of applications, select the checkbox next to EPIPlayScript, and then click **Start**.
4. Read the message to confirm that the application has started.

Running the EPI sample client application

1. Enter the following at a command prompt:

```
cd <appserver_path>\bin
launchclient "<appserver_path>\installableApps\EPIPlayScript.ear"
```

Note: The quotation marks are necessary if your path names contain spaces.

2. The output should look like this:

```
C:\>cd c:\program files\websphere\appserver\bin
C:\WebSphere\AppServer\bin>launchclient "C:\WebSphere\AppServer\installableApps\
EPIPlayScript.ear"
IBM WebSphere Application Server, Release 5.1
J2EE Application Client Tool
Copyright IBM Corp., 1997-2003
WSCL0012I: Processing command line arguments.
WSCL0013I: Initializing the J2EE Application Client Environment.
WSCL0035I: Initialization of the J2EE Application Client Environment has complet
ed.
WSCL0014I: Invoking the Application Client class com.ibm.ctg.samples.j2ee.EPIPla
yScriptClient
Field 2 = 000000009
Field 6 = 28/04/04 14:16:35
invoking remove on the bean
C:\WebSphere\AppServer\bin>
```

Appendix. Trademarks

The following terms are trademarks of International Business Machines Corporation in the United States, other countries, or both:

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WebSphere
z/OS

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