WebSphere Business Integration Server
Express and Express Plus

IBM

# Quick Start Guide

*Version 4.3.1*

**30July2004**

This edition of this document applies to IBM WebSphere Business Integration Server Express, version 4.3.1 and IBM WebSphere Business Integration Server Express Plus, version 4.3.1.

To send us your comments about IBM WebSphere Business Integration documentation, e-mail doc-comments@us.ibm.com. We look forward to hearing from you.

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# Contents

# About this document

The products IBM<sup>(R)</sup> WebSphere<sup>(R)</sup> Business Integration Server Express and IBM<sup>(R)</sup> WebSphere<sup>(R)</sup> Business Integration Server Express Plus are made up of the following components: InterChange Server Express, the associated Toolset Express, CollaborationFoundation, and a set of software integration adapters. The tools in Toolset Express help you to create, modify, and manage business processes. You can choose from among the prepackaged adapters for your business processes that span applications. The standard processes template, CollaborationFoundation, allows you to quickly create customized processes.

Except where noted, all the information in this guide applies to both IBM WebSphere Business Integration Server Express and IBM WebSphere Business Integration Server Express Plus. The term "WebSphere Business Integration Server Express" and its variants refer to both products.

The SystemTest samples are provided as a means of validating the IBM WebSphere Business Integration Server Express V4.3.1 and IBM WebSphere Business Integration Server Express Plus V4.3.1 systems after installation.

This document describes how to use these samples to validate your system.

## Audience

This document is for consultants and system administrators who install, deploy, and administer IBM WebSphere Business Integration Express.

## Related documents

The complete set of documentation available with this product describes the features and components common to all IBM WebSphere Business Integration Server Express installations, and includes reference material on specific components.

You can download, install, and view the documentation at the following site: http://www.ibm.com/software/integration/wbiserverexpress/library/infocenter

After completing the instructions provided in this document for validating your product installation, refer to the documents listed below to learn more about these specific tasks.

- For information about the IBM WebSphere Business Integration Server Express and Express Plus products and the steps necessary to implement a solution, refer to the *System Implementation Guide*.
- For information about installing the optional Adapter or Collaboration Capacity Packs, available only with the IBM WebSphere Business Integration Server Express Plus product, refer to the *WebSphere Business Integration Server Express Installation Guide for Windows*, *WebSphere Business Integration Server Express Installation Guide for OS/400*, or the *WebSphere Business Integration Server Express Installation Guide for Linux*.
- For information about performing the final configuration tasks for your implementation, including configuration of the adapters installed with IBM

WebSphere Business Integration Server Express and Express Plus and the optional Adapter Capacity Pack, refer to the *System Implementation Guide*.

**Notes:**

1. In the SystemTest samples, the adapters have been configured to use IDL as the transport mechanism. These samples do not test an implementation using JMS as the transport mechanism. For information about configuring adapters to use JMS as the transport mechanism, see the *System Implementation Guide*.

2. Important information about this product may be available in Technical Support Technotes and Flashes issued after this document was published. These can be found on the WebSphere Business Integration Support Web site, http://www.ibm.com/software/integration/websphere/support/. Select the component area of interest and browse the Technotes and Flashes sections.

## Conventions used in this guide

This document uses these abbreviations and style conventions:

- Abbreviations are used for some words and some variables in syntax statements. These abbreviations are used:

| | |
|---|---|
| BO = business object (prefix to a BO file) | *ip_address* = variable name for an IP address |
| *collaboration_name* = variable name for a collaboration | *ObjectName* = variable name for business object |
| *connector_name* = variable name for a connector | *os400Name* = variable for name of OS/400 system or its IP address |
| ICS = InterChange Server Express | |

\* BO is the prefix to a BO file; the term BO generally refers to the business object definition text files. *ObjectName* refers to the variables used to represent business objects.

- The term "camelcase," used in this document, refers to a style of capitalization whereby the spaces between words are eliminated, and the first letter of each word (or more than one letter if using acronyms) is capitalized. For example, the term SystemTest is in camelcase.

In addition, this document uses some or all of the following typographical conventions:

| | |
|---|---|
| **Bold** | Indicates a literal value, such as a command name, filename, information that you type, or information that the system prints on the screen. |
| *italic* | Indicates a variable name, a cross-reference, or a new term the first time it appears. |
| blue outline | A blue outline, which is visible only when you view the manual online, indicates a cross-reference hyperlink. Click inside the outline to jump to the object of the reference. |
| {} | In a syntax line, curly braces surround a set of options from which you must choose one and only one. |
| [] | In a syntax line, square brackets surround an optional parameter. |
| ... | In a syntax line, ellipses indicate a repetition of the previous parameter. For example, option[,...] means that you can enter multiple, comma-separated options. |

| | |
|---|---|
| < > | In a naming convention, angle brackets surround individual elements of a name to distinguish them from each other, as in <server_name><connector_name>tmp.log. |
| /, \ | In this document, slashes (/, \) are used as the convention for directory paths. All IBM WebSphere Business Integration Server Express system product pathnames are relative to the directory where the product is installed on your system. |
| %text% and $text | Text within percent (%) signs indicates the value of the text system variable or user variable. |
| ProductDir | Represents the directory where the product is installed. |

## New in release 4.3.1

This release adds support for InterChange Server Express on the following operating systems:

- IBM OS/400 V5R2, V5R3
- Red Hat Enterprise AS Linux 3.0, Update 1
- SuSE Linux Enterprise Server 8.1 with SP3
- Microsoft Windows 2003

## New in release 4.3

This is the first release of this guide.

# Chapter 1. Quick Start Guide Overview

This document describes how to use the SystemTest samples to validate the system after installing the Windows, OS/400, or Linux editions of the IBM[R] WebSphere[R] Business Integration Server Express V4.3.1 or the IBM[R] WebSphere[R] Business Integration Server Express Plus V4.3.1 products.

Except where noted, all the information in this guide applies to both IBM WebSphere Business Integration Server Express and IBM WebSphere Business Integration Server Express Plus. The term *WebSphere Business Integration Server Express* and its variants refer to both products.

The "Validating your Windows Installation," "Validating your OS/400 installation." and "Validating your Linux installation" chapters each end with a section entitled "Taking the next step." These sections summarize what you have accomplished so far and instruct you to proceed to the "Cleaning up the business objects" chapter to import the BIA_BO_BaseCollabBOs.jar package file into the WBIExpressLibrary integration component library, and then deploy the Customer and Employee business objects to the server before using your IBM WebSphere Business Integration Server Express product. The "Taking the next steps" section at the end of the "Cleaning up the business object" chapter provides you with suggestions concerning what you should do after completing the instructions in this document.

## Contacting product support

For support issues relating to the IBM WebSphere Business Integration Server Express products, contact IBM Customer Support either online or by telephone:

- Visit the IBM WebSphere Business Integration Server Express technical support Web site, http://www.ibm.com/software/integration/websphere/support/.
- Contact IBM WebSphere Business Integration Server Express support by telephone within the USA or Canada at 1-800-IBM-SERV. For all other countries, go to http://techsupport.services.ibm.com/guides/contacts.html to find the correct telephone number for your geographic location.

# Chapter 2. Validating your Windows installation

This chapter describes how to use the SystemTest samples to validate the system after installing the Windows edition of the IBM<sup>(R)</sup> WebSphere<sup>(R)</sup> Business Integration Server Express V4.3.1 product.

**Note:** It is assumed that you have successfully installed the Windows edition of the IBM WebSphere Business Integration Server Express product and have installed the Samples component from the Install Samples screen during installation, which installs the SystemTest samples. If you have not yet installed the IBM WebSphere Business Integration Server Express product and the SystemTest samples, see the *WebSphere Business Integration Server Express Installation Guide for Windows*.

Before using the samples, as described in "Using Test Connector to view business data being processed" and "Using the Adapter for JText to process text files through the system", you must first start InterChange Server Express, start System Manager and connect InterChange Server to it, register an InterChange Server Express instance, and make sure that all the necessary components are working properly.

This chapter includes the following sections:
- "Supported Windows platforms"
- "Starting InterChange Server Express" on page 4
- "Starting System Manager" on page 4
- "Registering an InterChange Server Express instance" on page 4
- "Verifying that all necessary components are working correctly" on page 4
- "Using Test Connector to view business data" on page 5
- "Using the Adapter for JText to process text files" on page 9

**Note:** If you have already started InterChange Server Express and System Manager, and registered an InterChange Server Express instance, begin with the section "Verifying that all necessary components are working correctly" on page 4.

## Supported Windows platforms

WebSphere Business Integration Server Express can be installed on Windows 2000, Windows XP, and Windows 2003. There are, however, some important distinctions between these versions of Windows in regard to product component support and Windows menu selections.

**Important Windows platform information**
- The instructions provided in this document are based on a Windows 2000 installation of IBM WebSphere Business Integration Server Express.
- If you are running IBM WebSphere Business Integration Server Express on a Windows XP machine, some of the startup and other menu selections may be slightly different than the selections used in these instructions. Please take these minor differences into consideration when following the instructions provided in

this document to validate your system after installing the Windows edition of the IBM[R] WebSphere[R] Business Integration Server Express V4.3.1 product.

- The IBM WebSphere Business Integration Server Express tools **are not** supported on Windows 2003 with the following two exceptions: Failed Event Manager and System Monitor. Since only InterChange Server Express, the adapters (in production mode only), Failed Event Manager, and System Monitor are supported, you must run System Manager on a dedicated Windows 2000 or Windows XP machine.

## Starting InterChange Server Express

To start InterChange Server Express, click **Start > Programs > IBM WebSphere Business Integration Express > InterChange Server Express**. InterChange Server Express automatically starts the Persistent Naming server.

## Starting System Manager

After you have started InterChange Server Express, start WebSphere Workbench and System Manager.

Click **Start > Programs > IBM WebSphere Business Integration Express > Toolset Express > Administrative > System Manager**.

For information about System Manager, see the *System Implementation Guide*.

## Registering an InterChange Server Express instance

After starting System Manager, register an InterChange Server Express instance.

1. Right-click **InterChange Server Instances** in the "InterChange Server Component Management" view, and then click R**egister Server**.
2. Type **WebSphereICS** in the "Server name" field.
3. Type **admin** in the "User name" field.
4. Type **null** in the "Password" field.
5. Click **Save User ID and Password**.
6. Click **OK**.

## Verifying that all necessary components are working correctly

After starting System Manager, verify that all the connector and collaboration objects are working correctly.

1. Expand the **WebSphereICS** server instance.
2. Expand the **Connectors** folder. Each active connector has a *green-arrow icon* displayed beside it. Verify that each of the following connectors are active (marked by a green-arrow icon):
   - DestinationConnector
   - SourceConnector
   - SystemTestConnector
3. If a connector is not active, right-click it, and then click **Start** *connector_name* in the context menu.
4. Expand the **Collaboration Objects** folder. Each active collaboration object has a green-arrow icon displayed beside it. Verify that each of the following collaboration objects are active (marked by a green-arrow icon).

- CustomerSynchronization_SourceToDestination
- SystemTestObject

5. If a connector is not active, right-click it, and then click **Start** *collaboration_name* in the context menu.

## Using Test Connector to view business data

Test Connector is a graphical interface that presents the structure of a business object in a tabular view. Connectors exchange data with applications through business logic and so do not have a graphical interface. Test Connector emulates connectors using a graphical view, making it easier to understand the role of a connector in an interface, while removing the complexity of running actual connectors.

The CustomerSynchronization_SourceToDestination collaboration object tests the IBM WebSphere Business Integration Server Express system by sending business objects from one instance of Test Connector to another. The Customer business object is flat rather than hierarchical. It does not contain any other business objects. The CustomerSynchronization collaboration template sends business objects, sent by the source connector in the interface, to the destination connector, and does not apply any noteworthy business logic. The SourceConnector and DestinationConnector definitions represent the server-side component of a connector. They do not represent executable connectors. These definitions are sufficient to validate the subsystems of IBM WebSphere Business Integration Server Express.

The following instructions use Test Connector to emulate connectors exchanging data through the IBM WebSphere Business Integration Server Express system.

**Note:** For the purpose of these instructions, it is assumed that you have started InterChange Server Express and System Manager, and verified that the test connectors and collaboration objects are active.

1. Click **Start > Programs > IBM WebSphere Business Integration Express > Toolset > Development > Test Connector** to start Test Connector.
2. Click **File > Create/Select Profile** in the "Test Connector" menu bar.
3. Click to select the **SourceConnector** profile, and then click **OK**. The "Connector Profile" dialog is shown below with the "SourceConnector" profile

selected.
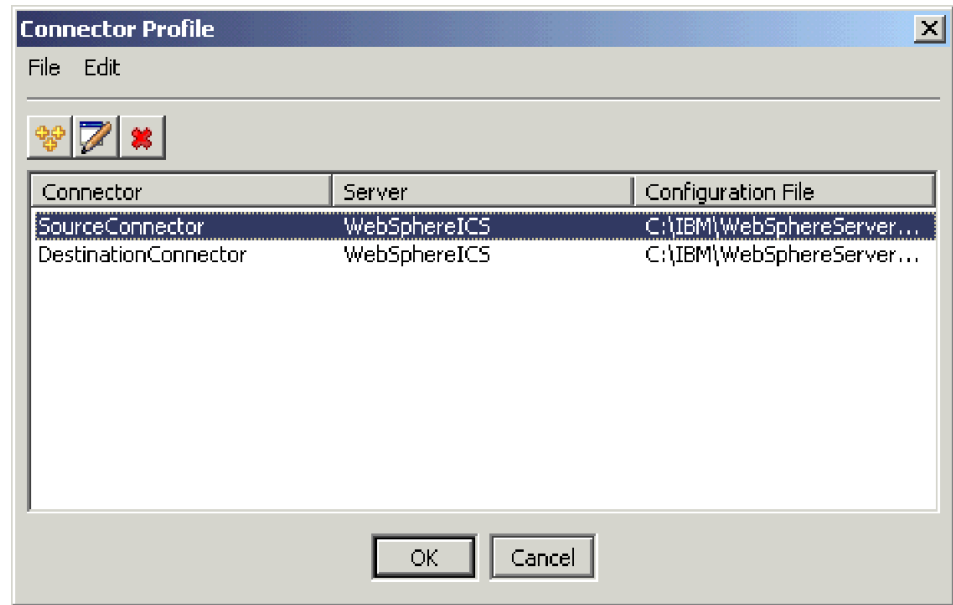


4. Click **File > Connect** in the "Test Connector" menu bar. This action connects the current instance of Test Connector with the "SourceConnector" profile loaded to the server.

5. Repeat steps 1 through 4 to launch another instance of Test Connector. Specify the **DestinationConnector** profile instead of SourceConnector in step 3. The "Connector Profile" dialog is shown below with the DestinationConnector profile selected.
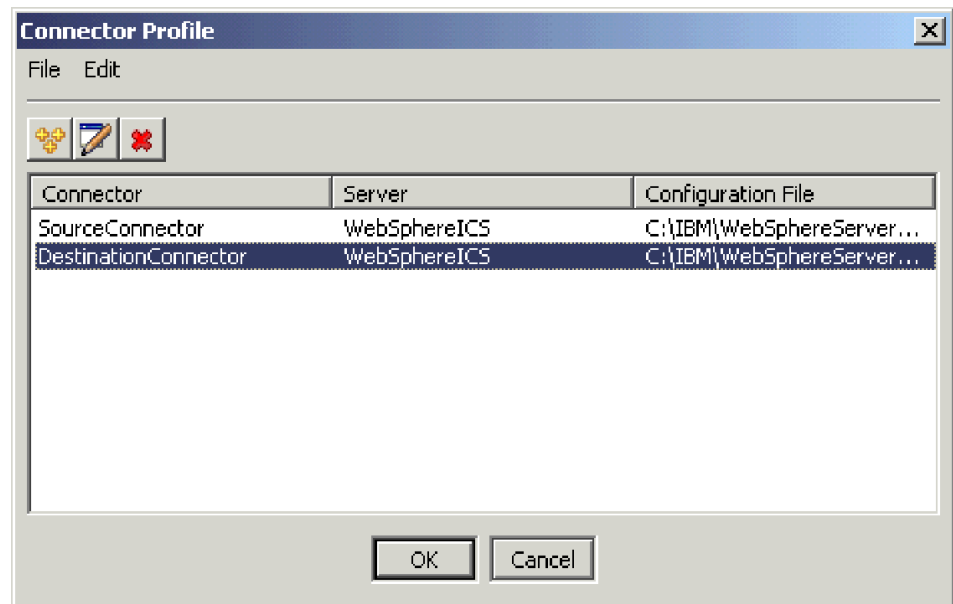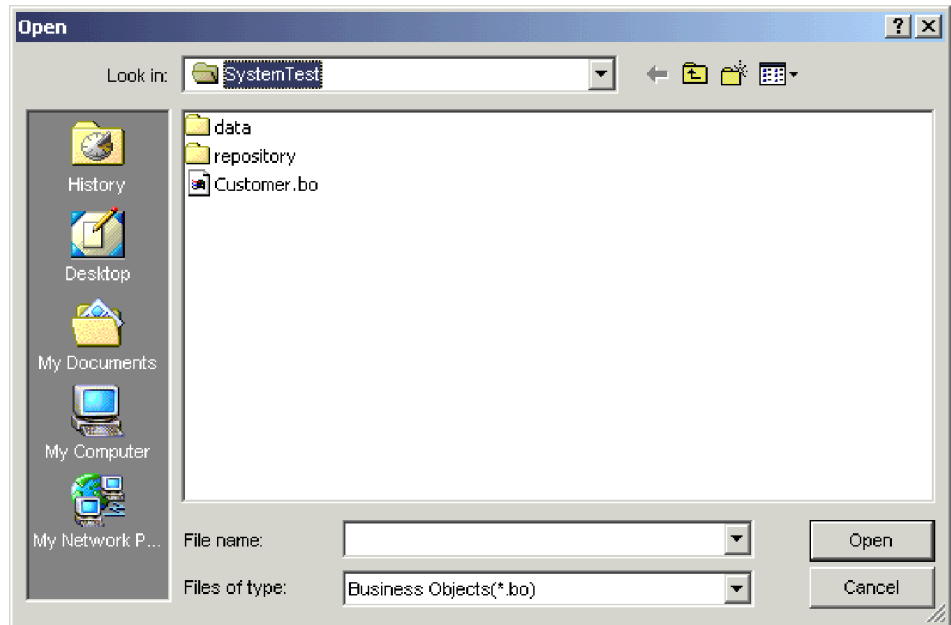


6. Click **File > Connect** in the "Test Connector" menu bar. This action connects the current instance of Test Connector with the DestinationConnector profile loaded to the server.

7. In the instance of Test Connector that has the SourceConnector profile loaded, click **Edit > Load BO** in the menu bar.

8. In the the "Open" dialog, click **\ProductDir \Samples\SystemTest**, and then click to select the **Customer.bo** folder.

The "Open" dialog is shown below.



9. Click **Open** to open the Customer.bo file and display the "New Instance" dialog.

10. Type **Customer_0** in the "Enter Name" field, and then click **OK**. The "New Instance" dialog, with Customer_0 typed in the "Enter Name" field, is shown below.

11. Note the values, for example **FirstName, String, Tom**, in the fields of the Customer business object, as shown below.

| Name | Type | Value |
|------|------|-------|
| CustomerId | String | 1000324 |
| FirstName | String | Tom |
| LastName | String | Barrymore |
| Status | String | Active |
| CreatedOnD... | String | 10/09/2003 |
| ObjectEventId | String | SourceConne... |

12. Click **Request > Send** in the menu bar to send the business object.

13. Give focus to the instance of Test Connector that has the "DestinationConnector" profile loaded. If the "BO Request List" pane contains **Customer.Create**, as shown below, the Customer business object has been received.

BO Request List
Customer.Create

14. Double-click the **Customer.create** event to view it as a response business object. The "Response BO" dialog is shown below.



15. **Optional:** Double-click in each of the fields to edit the data in the way that a destination application typically assigns its own unique values to events that it processes. Click **Ok** when you have finished editing the fields.

16. Click **Request > Reply > Success** in the menu bar to simulate the destination application successfully processing the business object and returning it to InterChange Server Express.

17. When you have finished sending and replying to events, click **File > Exit** in the "Test Connector" menu bar, and then click **Yes** when prompted to shut down Test Connector.

## Using the Adapter for JText to process text files

The Adapter for JText connector can convert business object data into text files, and text files into business object data, which allows it to exchange business objects between InterChange Server Express and file-based applications, such as mainframes. Although many applications manage their business data through application-programming interfaces, some do not. Almost all applications, however, are capable of processing text files, which makes the Adapter for JText a popular and powerful integration component.

The SystemTestObject collaboration object exchanges data using an instance of the Adapter for JText. This instance is named SystemTestConnector in this SystemTest sample. This sample does not represent a typical integration interface since the exchange of Enterprise data occurs between separate applications. It does, however, provide an application-independent means of validating most of the types of components that are typically involved in an IBM WebSphere Business Integration Server Express server exchange.

The SystemTestConnector polls the data directory within the \\Samples\System folder of the IBM WebSphere Business Integration Server Express installation. This installation folder contains the Employee.in folder, which contains a number of records for an Employee business entity.

The following data represents a single record of this type:

- BusinessObject = Employee
- Verb = Create
- AttributeCount = 10
- EmployeeId = 14963840
- FirstName = Frank
- LastName = Jones
- SocialSecurityNumber = 142-72-4050
- Salary = 15.00
- Hours = 40
- Comments = Hired for chip design initiative
- Revenue = 1000000
- PhoneNumber = 744-289-5848
-  ObjectEventId = 0123456789

This type of record is referred to as a name/value pair, delimited. Metadata names, such as EmployeeId, identify the data that they represent. Individual fields are identified by special characters such as paragraph returns. Individual records are identified by special characters such as semicolons.

The JText connector processes the Employee.in file, converting the records contained within it to business objects, and then sends these business objects to InterChange Server Express. The business objects are processed by a collaboration, which applies a small amount of business logic to the objects. The collaboration sends the objects back to SystemTestConnector, which converts each business object to a file in the data folder. SystemTestConnector uses the same data folder to poll for new events and to output the business objects it processes. SystemTestConnector recursively processes its own output, providing a consistent flow of data through the system.

The SystemTest collaboration template, upon which the collaboration objects are based, is designed to attempt an illegal Java number-formatting operation on a field in some of the business objects processed by the collaboration. This illegal operation generates failed flows so that you can use Flow Manager to experiment with resolving failures in the system. For more information about Flow Manager, see the *IBM WebSphere Business Integration Server Express and Express Plus System Administration Guide*.

The following instructions use the Adapter for JText to process text files through a pair of interfaces in the system.

**Note:** For the purpose of these instructions, it is assumed that you have started InterChange Server Express and System Manager, and verified that the test connectors and collaboration objects are active.

1. In the InterChange Server Component Management view in System Manager, right-click the **SystemTestObject** collaboration object, and then click **Statistics** in the menu bar to open the "Statistics" view.

   **Note:** The "Statistics" view shows information about the events being processed by a collaboration. The information in this view is very helpful when you are testing a business process interface.

2. Click **Start > Programs > IBM WebSphere Business Integration Express > Samples > System Test > Run SystemTest Sample** to run the SystemTest

sample batch file. This batch file starts JTextConnector and copies a file containing sample data into the folder polled by the connector.

The information displayed within the SystemTest sample console window scrolls rapidly as JTextConnector starts, and then polls and processes events. To read the logged information, click in the console window to mark it, which pauses the process.

3. Press **Enter** to unmark the console window, which restarts the process.

4. If the "System Manager" window is not maximized, right-click the title bar of the "System Manager" window, and then click **Maximize** in the context menu to fully expand it.

5. The Statistics view, which you opened previously for the SystemTestObject collaboration object in System Manager, displays the counters for the total number of events processed, how many events were successful, and how many events failed. The interface is designed to occasionally fail an event so you can view failed flows as well as successful ones.

6. Open the \\*IBM*\*WebSphereServer*\*Samples*\*SystemTest*\*data* folder, which is the default installation path for IBM WebSphere Business Integration Server Express on your machine, to view the files created by the connector as it processes the data.

7. After allowing the interface to run for several minutes, right-click **SystemTestConnector** in the InterChange Server Component Management view in System Manager, and then click **Shut Down SystemTestConnector**.

## Taking the next step

After completing the instructions provided in this chapter, you have verified that InterChange Server Express starts and that the major components of the integration system can deploy, start, process business data, and can be shut down. This indicates that the system is installed correctly and can support subsequent development, testing, and production.

You must, however, *clean up* the business objects in your installation before using IBM WebSphere Business Integration Server Express. Go to Chapter 5, "Cleaning up the business objects," on page 33 and follow the instructions provided for importing the BIA_BO_BaseCollabBOs.jar package file into the WBIExpressLibrary integration component library, and then deploying the Customer and Employee business objects to the server.

# Chapter 3. Validating your OS/400 installation

This chapter describes how to use the SystemTest samples to validate the system after installing the OS/400 edition of the IBM<sup>(R)</sup> WebSphere<sup>(R)</sup> Business Integration Server Express V4.3.1 product.

**Note:** For the purpose of the instructions in this chapter, it is assumed that you have successfully installed the OS/400 edition of the IBM WebSphere Business Integration Server Express product and have installed the Samples component from the Install Samples screen during installation, which installs the SystemTest samples. If you have not yet installed the IBM WebSphere Business Integration Server Express product and the SystemTest samples, see the *WebSphere Business Integration Server Express Installation Guide for OS/400*.

Before using the samples, as described in "Using Test Connector to view business data being processed" and "Using the Adapter for JText to process text files through the system", you must first start InterChange Server Express, start System Manager and connect InterChange Server to it, register an InterChange Server Express instance, and make sure that all the necessary components are working properly.

This chapter includes the following sections:
- "Starting InterChange Server Express"
- "Starting System Manager" on page 14
- "Registering an InterChange Server Express instance" on page 14
- "Verifying that all necessary components are working correctly" on page 14
- "Using Test Connector to view business data" on page 15
- "Using the Adapter for JText to process text files" on page 18

**Note:** If you have already started InterChange Server Express and System Manager, and registered an InterChange Server Express instance, begin with the section "Verifying that all necessary components are working correctly" on page 14.

## Starting InterChange Server Express

If you have installed WebSphere Business Integration Console, start the server using the OS/400 console provided on the Windows client.
1. Click **Start > Programs > IBM WebSphere Business Integration Console > Console**.
2. Type the OS/400 information, system name or IP address, and user profile and password.

   **Important:** The user profile must have *JOBCTL special authority.
3. Click **Start Server**, which is next to Instance QWBIDFT.

If you did not install WebSphere Business Integration Console, start the "QWBISVR43 subsystem" on your OS/400 system using the:
- **STRSBS SBSD(QWBISVR43/QWBISVR43) CL** command

or

- run the **submit_ics_server.sh** script.

**Note:** After installing IBM WebSphere Business Integration Server Express, the qwbisvr43 subsystem is up by default. When you run the STRSBS command, the system will tell you if the subsystem is already up. If it is, the QWBIDFT server instance might not start with the strsbs command because it is up already. As a result, QWBIDFT might have to be started through the:

- console

or

- submit_ics_server.sh QWBIDFT script.

## Starting System Manager

After you have started InterChange Server Express, start WebSphere Workbench and System Manager.

Click **Start > Programs > IBM WebSphere Business Integration Express > Toolset Express > Administrative > System Manager** to start WebSphere Workbench.

For information about System Manager, see the *System Implementation Guide*.

## Registering an InterChange Server Express instance

After starting System Manager, register an InterChange Server Express instance.

1. Click **Window > Open Perspective > Other** in the WebSphere Workbench menu bar.
2. Double-click **System Manager**.
3. Right-click **InterChange Server Instances** in the "InterChange Server Component Management" view, and then click **Register Server**.
4. Type **QWBIDFT** in the "Server name" field.
5. Type **admin** in the "User name" field.
6. Type **null** in the "Password" field.
7. Click **Save User ID and Password**.
8. Click **OK**.

## Verifying that all necessary components are working correctly

After starting System Manager, verify that all the connector and collaboration objects are working correctly.

1. Expand the **QWBIDFT** server instance.
2. Expand the **Connectors** folder. Each active connector has a *green-arrow icon* displayed beside it. Verify that each of the following connectors are active (marked by a green-arrow icon):
   - DestinationConnector
   - SourceConnector
   - SystemTestConnector
3. If a connector is not active, right-click it, and then click **Start** *connector_name* in the context menu.
4. Expand the "Collaboration Objects" folder. Each active collaboration object has a green-arrow icon displayed beside it. Verify that each of the following collaboration objects are active (marked by a green-arrow icon).

- CustomerSynchronization_SourceToDestination
- SystemTestObject

5. If a collaboration is not active, right-click it, and then click **Start** *collaboration_name* in the context menu.

# Using Test Connector to view business data

Test Connector is a graphical interface that presents the structure of a business object in a tabular view. Connectors exchange data with applications through business logic and so do not have a graphical interface. Test Connector emulates connectors using a graphical view, making it easier to understand the role of a connector in an interface, while removing the complexity of running actual connectors.

The CustomerSynchronization_SourceToDestination collaboration object tests the IBM WebSphere Business Integration Server Express system by sending business objects from one instance of Test Connector to another. The Customer business object is flat rather than hierarchical. It does not contain any other business objects. The CustomerSynchronization collaboration template sends business objects, sent by the source connector in the interface, to the destination connector, and does not apply any noteworthy business logic. The SourceConnector and DestinationConnector definitions represent the server-side component of a connector. They do not represent executable connectors. These definitions are sufficient to validate the subsystems of IBM WebSphere Business Integration Server Express.

The following instructions use Test Connector to emulate connectors exchanging data through the IBM WebSphere Business Integration Server Express system.

**Note:** For the purpose of these instructions, it is assumed that you have started InterChange Server Express and System Manager, "Registering an InterChange Server Express instance" on page 14, and verified that the test connectors and collaboration objects are active.

1. Map a network drive to your OS/400 system (\\OS400system\root).
2. Click **Start > Programs > IBM WebSphere Business Integration Express > Toolset Express > Development > Test Connector** to start Test Connector.
3. Click **File > Create/Select Profile** in the "Test Connector" menu bar.
4. Select **File > New Profile** in the "Connector Profile" menu bar.
5. Click **Browse**, and then navigate to the mapped drive that you set up in step1. Navigate to the \QIBM\UserData\WBIServer43\QWBIDFT\ directory, click to select the "InterchangeSystem.cfg" file, and then click**Open**.

    **Note:** If you are doing this for an instance that you created with the **create_instance.sh** script, use that instance name instead of QWBIDFT.

6. In the "Connector Name" field, type **SourceConnector**.
7. In the "Server" field, type the server name **QWBIDFT** or the name you used with the **create_instance.sh** script.
8. In the "Password" field, type the password for the ICS admin user. This is the word **null** if you did not change this password after installation.
9. Click to select the **SourceConnector** profile, and then click **OK**. The "Connector Profile" dialog is shown below with the "SourceConnector" profile

selected.
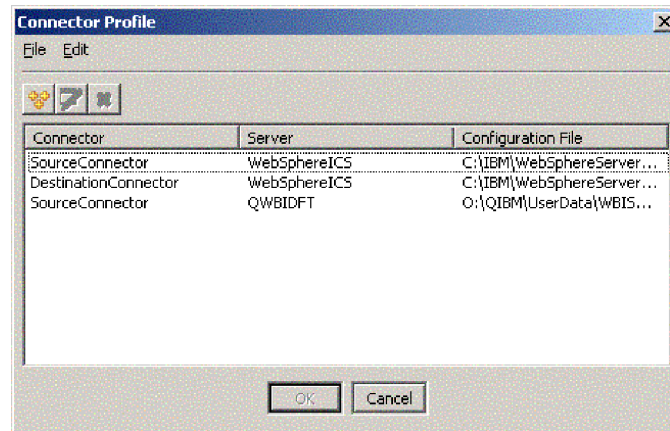


10. Click **File > Connect** in the "Test Connector" menu bar. This action connects the current instance of Test Connector with the SourceConnector profile loaded to the server.

11. Repeat steps 2 on page 15 through 9 on page 15 to launch another instance of Test Connector. Use **DestinationConnector** instead of SourceConnector in steps 6 and 9.

12. Click **File > Connect** in the "Test Connector" menu bar. This action connects the current instance of Test Connector with the DestinationConnector profile loaded to the server.

13. In the instance of Test Connector that has the SourceConnector profile loaded, click **Edit > Load BO** in the menu bar.

14. In the "Open" dialog, navigate to **\QIBM\UserData\WBIServer43\QWBIDFT\Samples\SystemTest\** on your mapped drive, and then click to select the **Customer.bo** folder. The "Open" dialog is shown below.
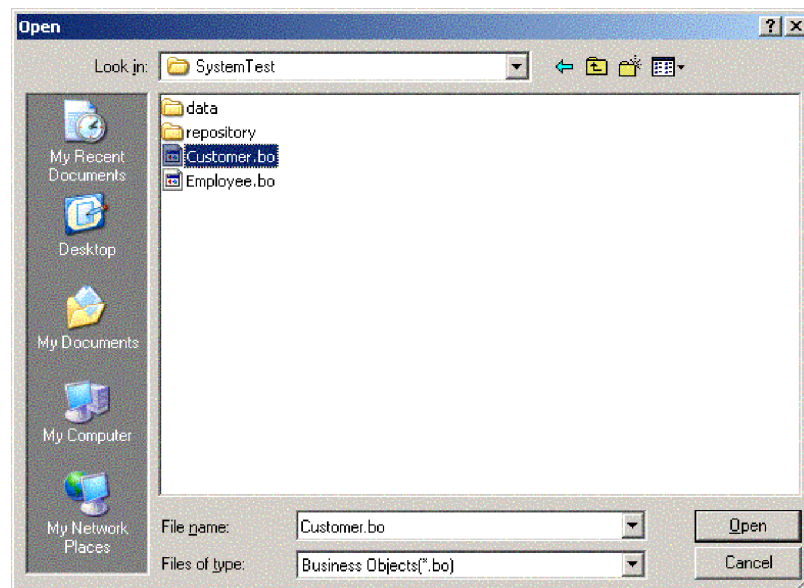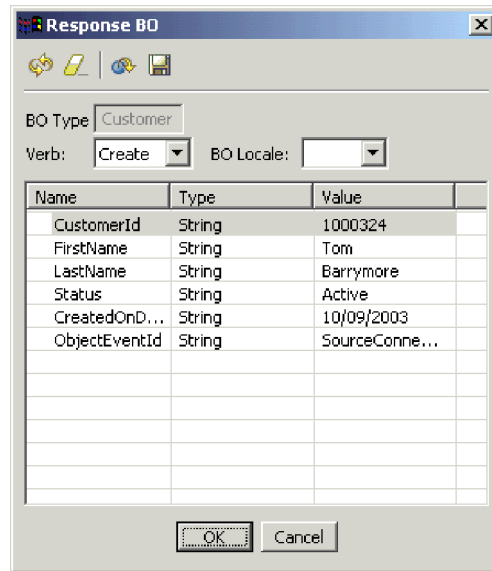
15. Click **Open** to open the Customer.bo file and display the "New Instance" dialog.
16. Type **Customer_0** in the "Enter Name" field, and then click **OK**.
17. Note the values, for example **FirstName, String, Tom**, in the fields of the Customer business object, as shown below.

| Name | Type | Value | |
|------|------|-------|---|
| CustomerId | String | 1000324 | |
| FirstName | String | Tom | |
| LastName | String | Barrymore | |
| Status | String | Active | |
| CreatedOnD... | String | 10/09/2003 | |
| ObjectEventId | String | SourceConne... | |

18. Click **Request > Send** in the menu bar to send the business object.
19. Give focus to the instance of Test Connector that has the DestinationConnector profile loaded. If the "BO Request List" pane contains **Customer.Create**, as shown below, the Customer business object has been received.

BO Request List
Customer.Create

20. Double-click the "Customer.create" event to view it as a response business object. The Response BO dialog is shown below.



21. **Optional:** Double-click in each of the fields to edit the data in the way that a destination application typically assigns its own unique values to events that it processes. Click **Ok** when you have finished editing the fields.

22. Click **Request > Reply > Success** in the menu bar to simulate the destination application successfully processing the business object and returning it to InterChange Server Express.

23. When you have finished sending and replying to events, click **File > Exit** in the Test Connector menu bar, and then click **Yes** when prompted to shut down Test Connector.

## Using the Adapter for JText to process text files

The Adapter for JText connector can convert business object data into text files, and text files into business object data, which allows it to exchange business objects between InterChange Server Express and file-based applications, such as mainframes. Although many applications manage their business data through application-programming interfaces, some do not. Almost all applications, however, are capable of processing text files, which makes the Adapter for JText a popular and powerful integration component.

The SystemTestObject collaboration object exchanges data using an instance of the Adapter for JText. This instance is named SystemTestConnector in this SystemTest sample. This sample does not represent a typical integration interface since the exchange of Enterprise data occurs between separate applications. It does, however, provide an application-independent means of validating most of the types of components that are typically involved in an IBM WebSphere Business Integration Server Express server exchange.

The SystemTestConnector polls the data directory within the \\Samples\System folder of the IBM WebSphere Business Integration Server Express installation. This installation folder contains the Employee.in folder, which contains a number of records for an Employee business entity.

The following data represents a single record of this type:

- BusinessObject = Employee
- Verb = Create
- AttributeCount = 10
- EmployeeId = 14963840
- FirstName = Frank
- LastName = Jones
- SocialSecurityNumber = 142-72-4050
- Salary = 15.00
- Hours = 40
- Comments = Hired for chip design initiative
- Revenue = 1000000
- PhoneNumber = 744-289-5848
-  ObjectEventId = 0123456789

This type of record is referred to as a name/value pair, delimited. Metadata names, such as EmployeeId, identify the data that they represent. Individual fields are identified by special characters such as paragraph returns. Individual records are identified by special characters such as semicolons.

The JText connector processes the Employee.in file, converting the records contained within it to business objects, and then sends these business objects to InterChange Server Express. The business objects are processed by a collaboration, which applies a small amount of business logic to the objects. The collaboration sends the objects back to SystemTestConnector, which converts each business object to a file in the data folder. SystemTestConnector uses the same data folder to poll for new events and to output the business objects it processes. SystemTestConnector recursively processes its own output, providing a consistent flow of data through the system.

The SystemTest collaboration template, upon which the collaboration objects are based, is designed to attempt an illegal Java number-formatting operation on a field in some of the business objects processed by the collaboration. This illegal operation generates failed flows so you can use Flow Manager to experiment with resolving failures in the system. For more information about Flow Manager, see the *IBM WebSphere Business Integration Server Express and Express Plus System Administration Guide*.

The following instructions use the Adapter for JText to process text files through a pair of interfaces in the system.

**Note:** For the purpose of these instructions, it is assumed that you have started InterChange Server Express and System Manager, registered an InterChange Server Express instance, and verified that the test connectors and collaboration objects are active.

1. In the InterChange Server Component Management view in System Manager, right-click the **CustomerSynchronization_SourceToDestination::CustomerSynchronization collaboration** object, and then click **Statistics** in the menu bar to open the Statistics view.

   **Note:** The Statistics view shows information about the events being processed by a collaboration. The information in this view is very helpful when you are testing a business process interface.

2. Repeat step 1 above for the "SystemTestObject::SystemTest collaboration" object.

3. From the "OS/400 command entry, run **CL command QSH**. Then type **/QIBM/UserData/WBIServer43/QWBIDFT/Samples/SystemTest/start_SystemTest.sh** to run a shell script. The shell script starts JTextConnector, and then copies a file of sample data into the directory polled by the connector.

   The information displayed within the "SystemTest sample" console window scrolls rapidly as JTextConnector starts, and then polls and processes events.

4. If the System Manager window is not maximized, right-click the title bar of the System Manager window, and then click Maximize in the context menu, if that menu choice is available. If System Manager is not maximized, the graph display referenced in the next step is not initially in view.

5. The Statistics view, which you opened for the SystemTestObject collaboration object in System Manager, displays the counters for the total number of events processed, how many events were successful, and how many events failed. The interface is designed to occasionally fail an event so you can view failed flows as well as successful ones.

6. Navigate to the /QIBM/UserData/WBIServer43/QWBIDFT/Samples/SystemTest/data folder within your installation to view the files created by the connector as it processes the data.

7. After allowing the interface to run for several minutes, right-click **SystemTestConnector** in the InterChange Server Component Management view in System Manager, and then click **Shut Down SystemTestConnector**.

## Taking the next step

After completing the instructions provided in this chapter, you have verified that InterChange Server Express starts and that the major components of the integration system can deploy, start, process business data, and can be shut down. This indicates that the system is installed correctly and can support subsequent development, testing, and production.

You must, however, *clean up* the business objects in your installation before using IBM WebSphere Business Integration Server Express. Go to Chapter 5, "Cleaning up the business objects," on page 33 and follow the instructions provided for importing the BIA_BO_BaseCollabBOs.jar package file into the WBIExpressLibrary integration component library, and then deploying the Customer and Employee business objects to the server.

# Chapter 4. Validating your Linux installation

This chapter describes how to use the SystemTest samples to validate the system after installing the Linux edition of the IBM[(R)] WebSphere[(R)] Business Integration Server Express V4.3.1 product.

**Note:** This document assumes that you have successfully installed the Linux edition of the IBM WebSphere Business Integration Server Express product and have installed the Samples component from the Install Samples screen during installation, which installs the SystemTest samples. If you have not yet installed the IBM WebSphere Business Integration Server Express product and the SystemTest samples, see the *WebSphere Business Integration Server Express Installation Guide for Linux*.

Before using the samples, as described in "Using Test Connector to view business data being processed" and "Using the Adapter for JText to process text files through the system", you must first start InterChange Server Express, start System Manager and connect InterChange Server to it, register an InterChange Server Express instance, and make sure that all the necessary components are working properly.

This chapter includes the following sections:
- "Installing Toolset Express"
- "Starting InterChange Server Express" on page 24
- "Starting System Manager" on page 24
- "Registering an InterChange Server Express instance" on page 24
- "Verifying that all necessary components are working correctly" on page 25
- "Using Test Connector to view business data" on page 25
- "Using the Adapter for JText to process text files" on page 29

**Note:** If you have already installed Toolset Express, and started InterChange Server Express and System Manager, and registered an InterChange Server Express instance, begin with the section "Verifying that all necessary components are working correctly" on page 25.

## Installing Toolset Express

Before using the SystemTest samples to validate the system, you must install Toolset Express on the Windows client.

During the Toolset Express installation process, you must specify your InterChange Server Express IP address. Navigate to the %CROSSWORLDS%\bin\CWSharedEnv.bat file and check the entry ORB_HOST=SERVER_HOST_IP to find the IP address where your server is located.

1. On a Windows client machine, double-click **launchpad.exe** to start Launchpad.

   **Note:** Development tools are only available on Windows 2000 and Windows XP. If you want to install the complete toolset, you must install Toolset Express on Windows 2000 or Windows XP.

2. In the "Welcome" panel, click **Install Product**. The "Welcome panel" is shown below.



3. On the "Install Server" page, make sure that the InterChange Server Express checkbox **is not** checked, and then click **Next**.

4. On the "Install Tools" page, select **administrative tools** and **development tools**, and then click **Next**. The "Install Tools" page is shown below.
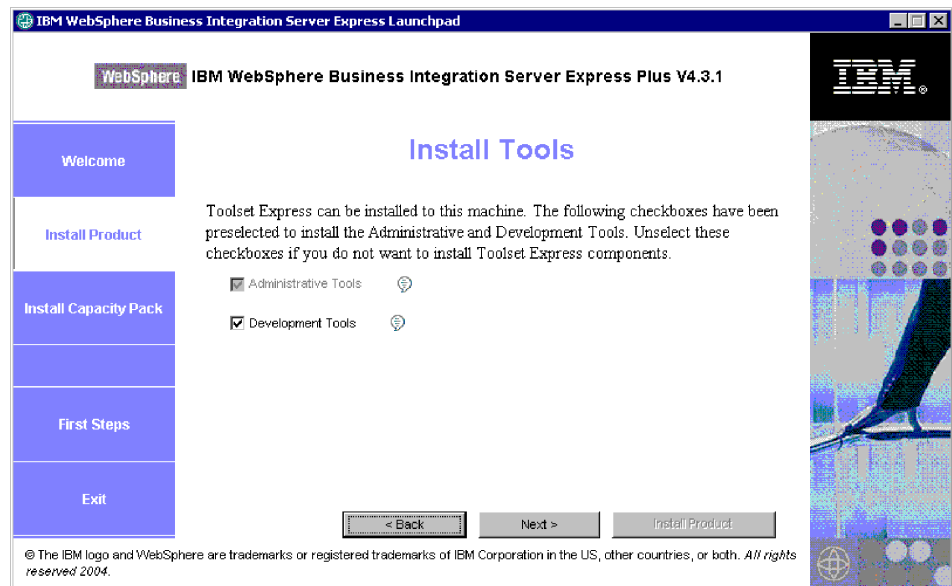


5. On the "Install Adapter" page, make sure that you **do not** select any adapter, and then click **Next**.

   **Important:** If you have installed IBM WebSphere Business Integration Express on Windows XP, skip this step as the "Install Adapter" page does not appear on a Windows XP installation.

6. On the "Install Samples" page, make sure that samples **are not** selected, and then click **Next**.

7. On the "Software Prerequisites" page, install third-party software as required. The "Software Prerequisites" page is shown below.
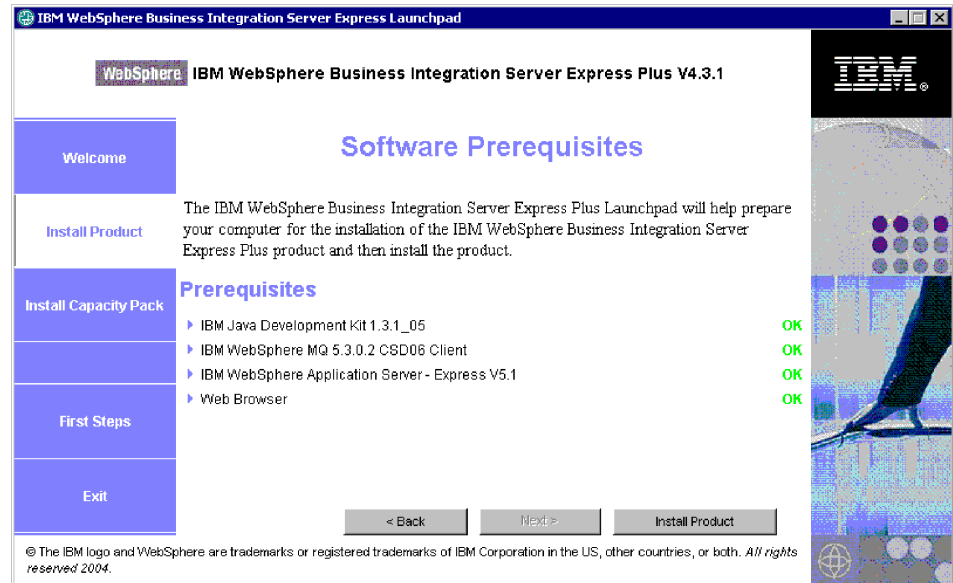


8. Click **Install Product** to start the installer.

9. On the "Software License Agreement" panel, accept the license, and then click **Next**.

10. On the "Destination" panel, specify the folder where you want to install Toolset Express, and then click **Next**.

11. On the "Naming Server" panel, specify the IP address of the IBM WebSphere Business Integration Server Express server, and then click **Next** to start the installation of Toolset Express. The "Naming Server" panel is shown below.
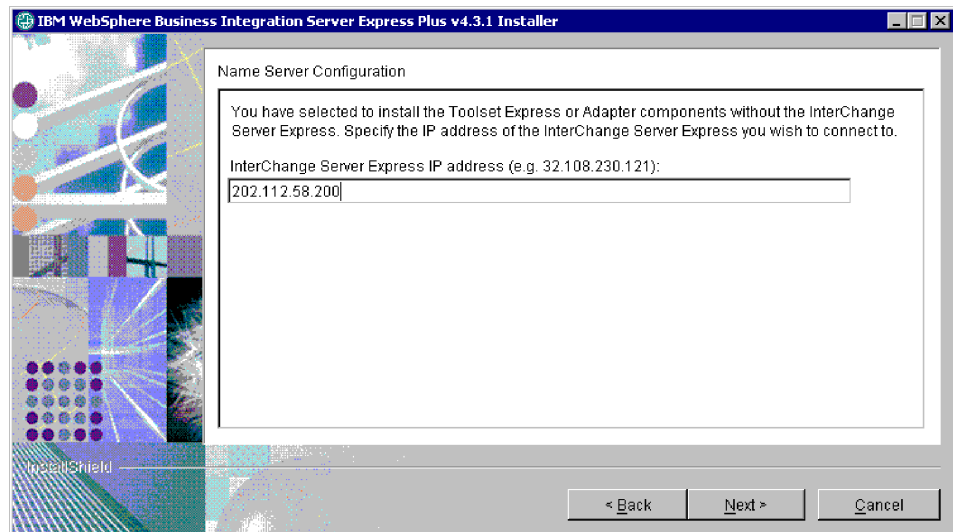
12. Once the installation is complete, click **Finish**. The "finish installation" panel is shown below.
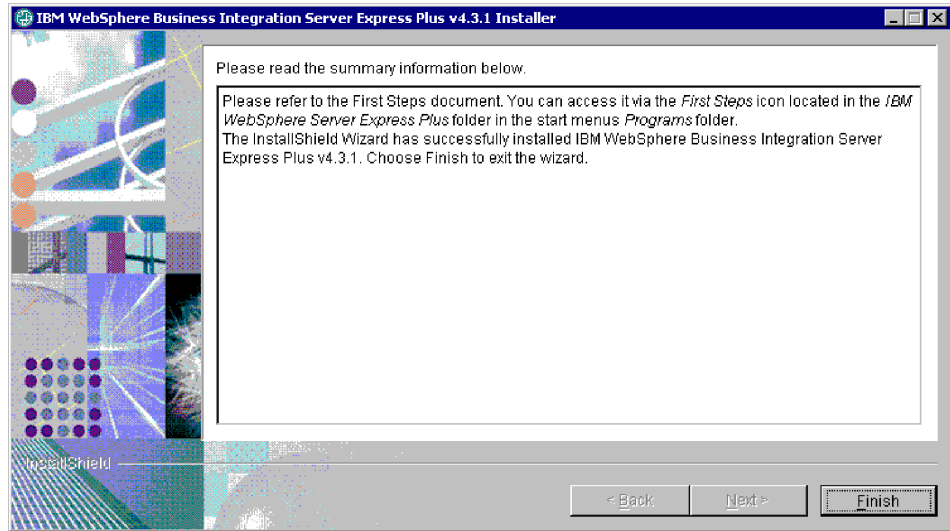


## Starting InterChange Server Express

Run the following scripts to start InterChange Server Express.

1. $cd/home/USER/IBM/WebSphereServer/bin or $cd/ProductDir/bin
2. $/ics_manager -start

**Notes:** In the scripts shown above:

- "$" is the Linux command line prompt
- "cd" is a command used to change directories
- "bin" is a folder within the product installation directory

InterChange Server Express automatically starts the Persistent Naming server.

## Starting System Manager

After you have started InterChange Server Express, start WebSphere Workbench and System Manager.

On the Windows client, click **Start > Programs > IBM WebSphere Business Integration Express > Toolset Express > Administrative > System Manager** to start WebSphere Workbench.

For information about System Manager, see the *System Implementation Guide*.

## Registering an InterChange Server Express instance

After starting System Manager, register the InterChange Server Express.

1. Verify the following settings:
   a.  Make sure the Windows client can access the name server correctly. Check that ORB_HOST is set correctly in the Windows client CWSharedEnv.bat file as follows: **set ORB_HOST=**_ip_address_

> **Note:** Alternatively, you can **set ORB_HOST=smb-redhat**, and then add
> the line *ip_address* **smb-redhat** in the
> %windir%\system32\drivers\etc\hosts file.

   b. Make sure that the name server can retrieve the linux server IP by name.
      Navigate to the file/etc/hosts file, open it, and then check for entries
      similar to the following lines:

   *ip_address*        localhost.localdomain        localhost
   *ip_address*        smb-redhat.cn.ibm.com      smb-redhat

2. Right-click **InterChange Server Instances** in the InterChange Server
   Component Management view, and then click **Register Server**.

3. Type **WebSphereICS** in the "Server name" field.

4. Type **admin** in the "User name" field.

5. Type **null** in the "Password" field.

6. Click **Save User ID and Password**.

7. Click **OK**.

# Verifying that all necessary components are working correctly

After starting System Manager, verify that all the connector and collaboration
objects are working correctly.

1. Expand the **WebSphereICS** server instance.

2. Expand the **Connectors** folder. Each active connector has a *green-arrow icon*
   displayed beside it. Verify that each of the following connectors are active
   (marked by a green-arrow icon):

   - DestinationConnector
   - SourceConnector
   - SystemTestConnector

3. If a collaboration is not active, right-click it, and then click **Start** *connector_name*
   in the context menu.

4. Expand the **Collaboration Objects** folder. Each active collaboration object has a
   green-arrow icon displayed beside it. Verify that each of the following
   collaboration objects are active (marked by a green-arrow icon).

   - CustomerSynchronization_SourceToDestination
   - SystemTestObject

5. If a connector is not active, right-click it, and then click **Start** *collaboration_name*
   in the context menu.

# Using Test Connector to view business data

Test Connector is a graphical interface that presents the structure of a business
object in a tabular view. Connectors exchange data with applications through
business logic and so do not have a graphical interface. Test Connector emulates
connectors using a graphical view, making it easier to understand the role of a
connector in an interface, while removing the complexity of running actual
connectors.

The CustomerSynchronization_SourceToDestination collaboration object tests the
IBM WebSphere Business Integration Server Express system by sending business
objects from one instance of Test Connector to another. The Customer business
object is flat rather than hierarchical. It does not contain any other business objects.
The CustomerSynchronization collaboration template sends business objects, sent

by the source connector in the interface, to the destination connector, and does not apply any noteworthy business logic. The SourceConnector and DestinationConnector definitions represent the server-side component of a connector. They do not represent executable connectors. These definitions are sufficient to validate the subsystems of IBM WebSphere Business Integration Server Express.

The following instructions use Test Connector to emulate connectors exchanging data through the IBM WebSphere Business Integration Server Express system.

**Note:** For the purpose of these instructions, it is assumed that you have started InterChange Server Express, System Manager, registered an InterChange Server Express instance, and verified that the test connectors and collaboration objects are active.
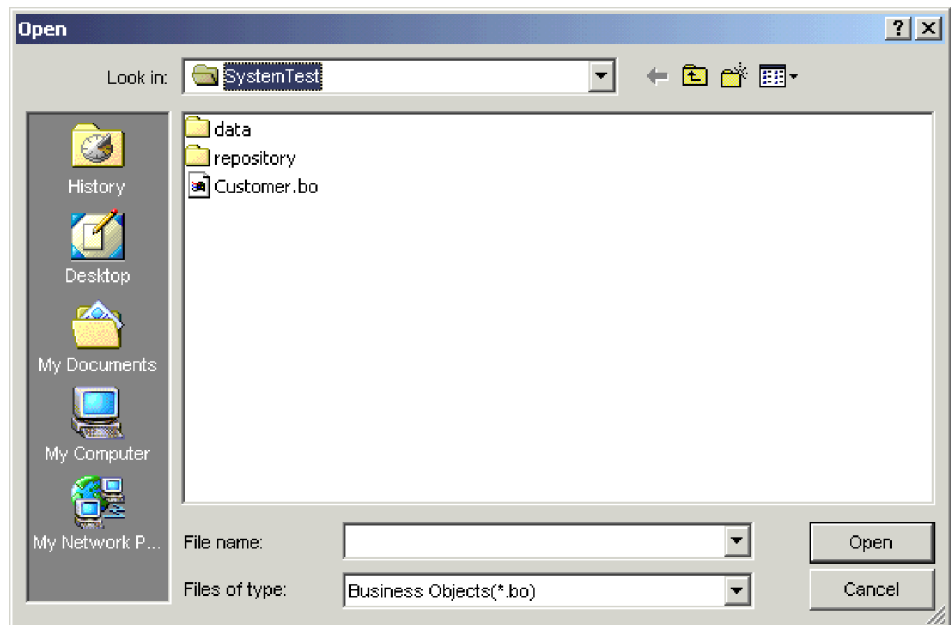
1. Click **Start > Programs > IBM WebSphere Business Integration Express > Development > Test Connector** to start Test Connector.
2. Click **File > Create/Select Profile** in the Test Connector menu bar.
3. Click to select the **SourceConnector** profile, and then click **OK**. The "Connector Profile" dialog is shown below with the SourceConnector profile selected.
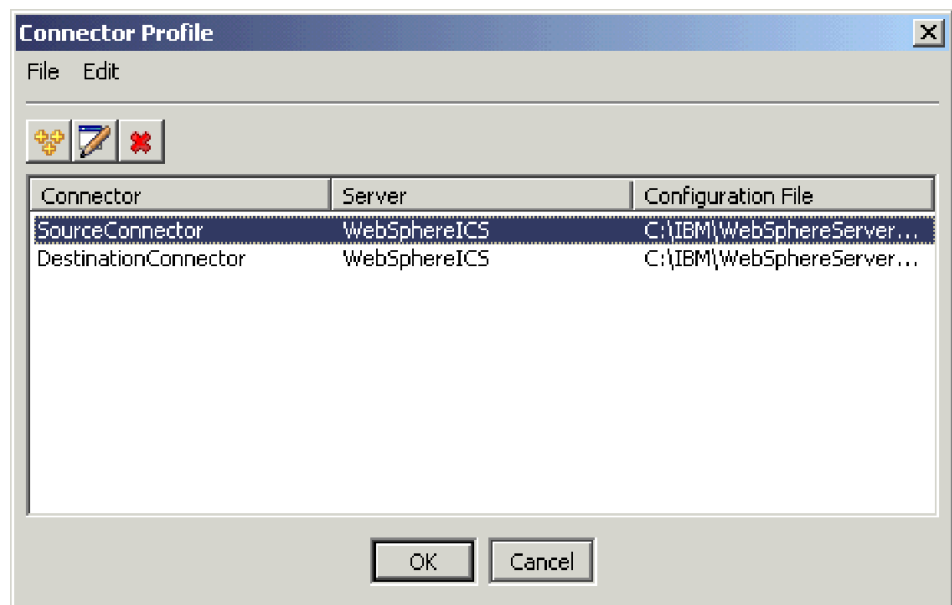


4. Click **File > Connect** in the "Test Connector" menu bar. This action connects the current instance of Test Connector with the SourceConnector profile loaded to the server.
5. Repeat steps 1 through 4 on page 6 to launch another instance of Test Connector. Specify the **DestinationConnector** profile instead of SourceConnector in step 3. The "Connector Profile" dialog is shown below with the DestinationConnector profile selected.
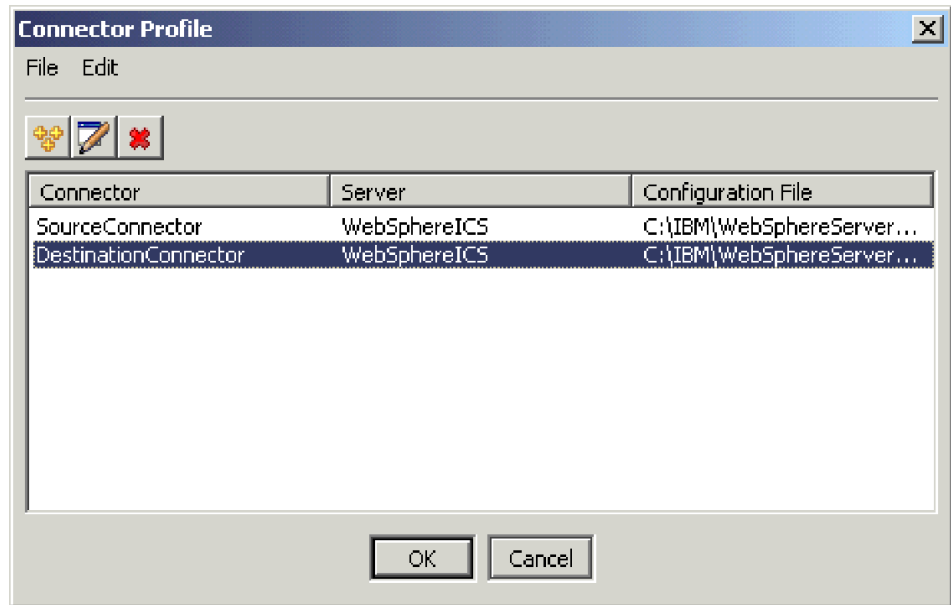
6. Click **File > Connect** in the "Test Connector" menu bar. This action connects the current instance of Test Connector with the DestinationConnector profile loaded to the server.

7. In the instance of Test Connector that has the SourceConnector profile loaded, click **Edit > Load BO** in the menu bar.

8. In the "Open" dialog, navigate to **\ProductDir \Samples\SystemTest**, and then open the **Customer.bo** folder. The "Open" dialog is shown below.



9. Click **Open** to open the Customer.bo file and display the "New Instance" dialog.

10. Type **Customer_0** in the "Enter Name" field, and then click **OK**. The "New Instance" dialog, with Customer_0 typed in the "Enter Name" field, is shown

below.



11. Note the values, for example **FirstName, String, Tom**, in the fields of the Customer business object, as shown below.

| Name | Type | Value | |
|------|------|-------|---|
| CustomerId | String | 1000324 | |
| FirstName | String | Tom | |
| LastName | String | Barrymore | |
| Status | String | Active | |
| CreatedOnD... | String | 10/09/2003 | |
| ObjectEventId | String | SourceConne... | |

12. Click **Request > Send** in the menu bar to send the business object.

13. Give focus to the instance of Test Connector that has the DestinationConnector profile loaded. If the "BO Request List" pane contains **Customer.Create**, as shown below, the Customer business object has been received.

14. Double-click the **Customer.create** event to view it as a response business object. The "Response BO" dialog is shown below.



15. **Optional:** Double-click in each of the fields to edit the data in the way that a destination application typically assigns its own unique values to events that it processes. Click **Ok** when you have finished editing the fields.

16. Click **Request > Reply > Success** in the menu bar to simulate the destination application successfully processing the business object and returning it to InterChange Server Express.

17. When you have finished sending and replying to events, click **File > Exit** in the Test Connector menu bar, and then click **Yes** when prompted to shut down Test Connector.

## Using the Adapter for JText to process text files

The Adapter for JText connector can convert business object data into text files, and text files into business object data, which allows it to exchange business objects between InterChange Server Express and file-based applications, such as mainframes. Although many applications manage their business data through application-programming interfaces, some do not. Almost all applications, however, are capable of processing text files, which makes the Adapter for JText a popular and powerful integration component.

The SystemTestObject collaboration object exchanges data using an instance of the Adapter for JText. This instance is named SystemTestConnector in this SystemTest sample. This sample does not represent a typical integration interface since the exchange of enterprise data occurs between separate applications. It does, however, provide an application-independent means of validating most of the types of components that are typically involved in an IBM WebSphere Business Integration Server Express server exchange.

The SystemTestConnector polls the data folder within the /ProductDir/Samples/SystemTest folder of the IBM WebSphere Business Integration Server Express installation. This installation folder contains the Employee.in folder, which contains a number of records for an Employee business entity.

The following data represents a single record of this type:
- BusinessObject = Employee
- Verb = Create
- AttributeCount = 10
- EmployeeId = 14963840
- FirstName = Frank
- LastName = Jones
- SocialSecurityNumber = 142-72-4050
- Salary = 15.00
- Hours = 40
- Comments = Hired for chip design initiative
- Revenue = 1000000
- PhoneNumber = 744-289-5848
-  ObjectEventId = 0123456789

This type of record is referred to as a name/value pair, delimited. Metadata names, such as EmployeeId, identify the data that they represent. Individual fields are identified by special characters such as paragraph returns. Individual records are identified by special characters such as semicolons.

The JText connector processes the Employee.in file, converting the records contained within it to business objects, and then sends these business objects to InterChange Server Express. The business objects are processed by a collaboration, which applies a small amount of business logic to the objects. The collaboration sends the objects back to SystemTestConnector, which converts each business object to a file in the data folder. SystemTestConnector uses the same data folder to poll for new events and to output the business objects it processes. SystemTestConnector recursively processes its own output, providing a consistent flow of data through the system.

The SystemTest collaboration template, upon which the collaboration objects are based, is designed to attempt an illegal Java number-formatting operation on a field in some of the business objects processed by the collaboration. This illegal operation generates failed flows so you can use Flow Manager to experiment with resolving failures in the system. For more information about Flow Manager, see the *IBM WebSphere Business Integration Server Express and Express Plus System Administration Guide*.

The following instructions use the Adapter for JText to process text files through a pair of interfaces in the system.

Note: For the purpose of these instructions, it is assumed that you have started InterChange Server Express, System Manager, registered an InterChange Server Express instance, and verified that the test connectors and collaboration objects are active.

1. Run the /ProductDir/Samples/SystemTest/start_SystemTest.sh shell file on the Linux InterChange server to start the JTextConnector and copy a file of sample data into the folder polled by the connector.

   The information displayed within the "SystemTest sample" console window scrolls rapidly as JTextConnector starts, and then polls and processes events. An

example of the logged information is shown below.

```
File   Edit   View   Terminal   Go   Help
[Time: 2004/07/09 19:39:46.522] [System: ConnectorAgent] [SS: SystemTestConnector] [Thread: WT=1 (#1209690911)] [T
ype: Trace] [Mesg: :class com.crossworlds.DataHandlers.text.namevalue :Exiting setAttrList(BusinessObjectInterface
) for business object Employee]
[Time: 2004/07/09 19:39:46.522] [System: ConnectorAgent] [SS: SystemTestConnector] [Thread: WT=1 (#1209690911)] [T
ype: Trace] [Mesg: :class com.crossworlds.DataHandlers.text.namevalue :Exiting serializeBO(BusinessObjectInterface
, boolean) for business object Employee main BO flag true]
[Time: 2004/07/09 19:39:46.522] [System: ConnectorAgent] [SS: SystemTestConnector] [Thread: WT=1 (#1209690911)] [T
ype: Trace] [Mesg: :class com.crossworlds.DataHandlers.text.namevalue :Exiting getStringFromBO(BusinessObjectInter
face) for business object Employee]
[Time: 2004/07/09 19:39:46.522] [System: ConnectorAgent] [SS: SystemTestConnector] [Thread: WT=1 (#1209690911)] [T
ype: Trace] [Mesg: :       JTextBOStringHandler::handleBOEvent() : Created the string= {  BusinessObject = Employee
        Verb = Create
        AttributeCount = 10
        EmployeeId = 14963840
        FirstName = Frank
        LastName = Jones
        SocialSecurityNumber = 142-72-4051
        Salary = 15.00
        Hours = 40
        Comments = Hired for chip design initiative.
        Revenue = 1000000
        PhoneNumber = 744-289-5848
        ObjectEventId = Fri Jul 09 19:39:22 CST 20041
} from  BO= {Employee } successfully]
[Time: 2004/07/09 19:39:46.528] [System: ConnectorAgent] [SS: SystemTestConnector] [Thread: WT=1 (#1209690911)] [T
ype: Trace] [Mesg: :
        FileRecordWriter :: Updating FileSeqNo.]
[Time: 2004/07/09 19:39:49.994] [System: ConnectorAgent] [SS: SystemTestConnector] [Thread: WT=1 (#1209690911)] [T
ype: Trace] [Mesg: :
        FileRecordWriter :: Updating OutputLog.]
[Time: 2004/07/09 19:39:49.994] [System: ConnectorAgent] [SS: SystemTestConnector] [Thread: WT=1 (#1209690911)] [T
ype: Trace] [Mesg: :
        JTextBOStringHandler:: Leaving handleBOEvent()]
[Time: 2004/07/09 19:39:49.994] [System: ConnectorAgent] [SS: SystemTestConnector] [Thread: WT=1 (#1209690911)] [T
ype: Trace] [Mesg: :JTExtBOHandler::doVerbFor() : Processing successful for BO = {Employee.Create}]
```

2. In the InterChange Server Component Management view in System Manager, right-click the **SystemTestObject collaboration object**, and then click **Statistics** in the menu bar to open the Statistics view.

   **Note:** The Statistics view shows information about the events being processed by a collaboration. The information in this view is very helpful when you are testing a business process interface.

3. If the System Manager window is not maximized, right-click the title bar of the System Manager window, and then click **Maximize** in the context menu to fully expand it.

4. The Statistics view, which you opened for the SystemTestObject collaboration object in System Manager in step 2, displays the counters for the total number of events processed, how many events were successful, and how many events failed. The interface is designed to occasionally fail an event so you can view

failed flows as well as successful ones. The Statistics view is shown below.
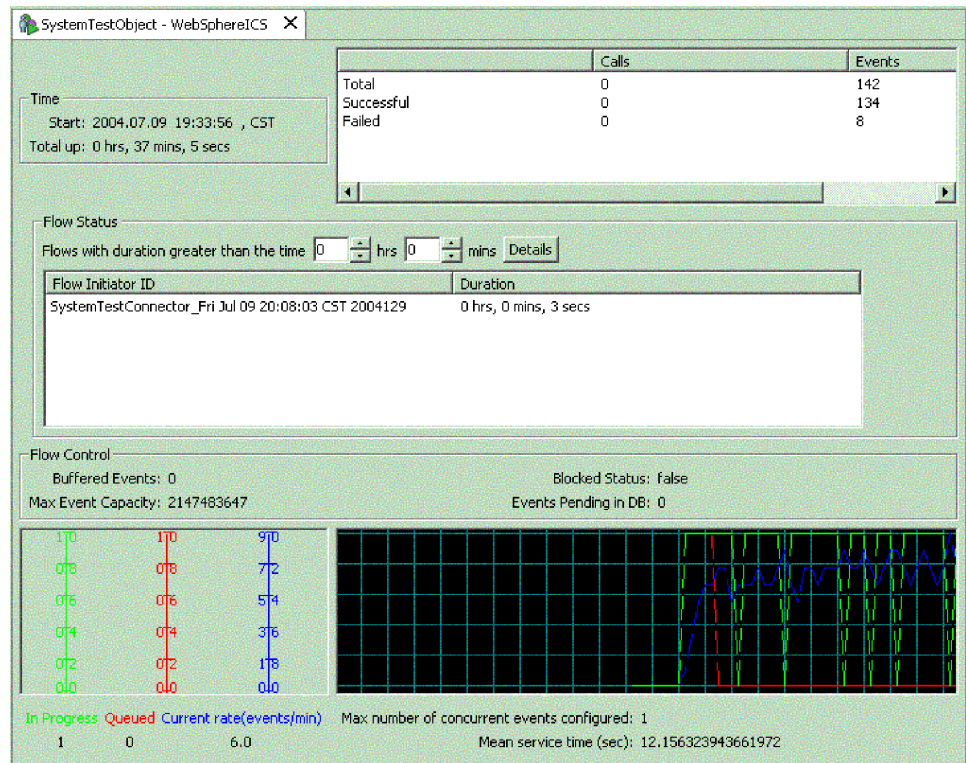


5. Navigate to and open the */ProductDir/Samples/SystemTest/data* folder, which is the default installation path for IBM WebSphere Business Integration Server Express on your machine, to view the files created by the connector as it processes the data.

6. After allowing the interface to run for several minutes, right-click **SystemTestConnector** in the InterChange Server Component Management view in System Manager, and then click **Shut Down SystemTestConnector**.

After you have completed these instructions, you have verified that InterChange Server Express starts and that the major components of the integration system can deploy, start, process business data, and be shut down. This indicates that the system is installed correctly and can support subsequent development, testing, and production

## Taking the next step

You must, however, *clean up* the business objects in your installation before using IBM WebSphere Business Integration Server Express. Go to Chapter 5, "Cleaning up the business objects," on page 33 and follow the instructions provided for importing the BIA_BO_BaseCollabBOs.jar package file into the WBIExpressLibrary integration component library, and then deploying the Customer and Employee business objects to the server.

# Chapter 5. Cleaning up the business objects

After successfully validating your system, you must "clean up" the business objects. To do this, import the BIA_BO_BaseCollabBOs.jar package file into the WBIExpressLibrary integration component library, and then deploy the Customer and Employee business objects to the server.

This chapter includes the following sections:
- "Importing the BIA_BO_BaseCollabBOs.jar package file"
- "Deploying the Customer and Employee business objects to the server" on page 34
- "Taking the next steps" on page 34

## Importing the BIA_BO_BaseCollabBOs.jar package file

Do the following to import the BIA_BO_BaseCollabBOs.jar file into the WBIExpressLibrary integration component library:

**Important:** If there are components with the same name as those in the package you are importing, System Manager overwrites the existing components without a warning.

1. In System Manager, right-click the **WBIExpressLibrary integration component library**, and then click **Importfrom Repository File** in the context menu

   System Manager displays the "Import Repository File" wizard.

2. At the "Import Repository File" screen, ensure that the "Integration Component Library Name" drop-down menu contains the name of the library into which you want to import the components.

   If you launched the "Import from Repository File" wizard from a library other than the one into which you want to import the components, you can change the destination this way instead of closing the wizard and launching it again.

3. **Windows platforms:** Click **Browse** next to the "InterChange server repository file" field, and then select the **BIA_BO_BaseCollabBOs.jar** file in the ProductDir\repository folder.

   **Linux platform:** Click **Browse** next to the "InterChange server repository file" field, and then select the **BIA_BO_BaseCollabBOs.jar** file in the ProductDir/repository folder.

   **OS/400 platform:**

   a. Map a drive to the OS/400 system.

   b. Right-click **My Computer** on your desktop, and then select **Map Network Drive**.

   c. From the "Map Network Drive" graphical user interface, select a drive letter, and then type the following in the folder field: **\\\\*os400Name*\\root** where os400Name is the name of the OS/400 system or its IP address.

   d. Click **Browse** next to the "InterChange server repository file" field, and then navigate to the mapped drive and select the **BIA_BO_BaseCollabBOs.jar** file in the \QIBM\ProdData\WBIServer43\product\repository\ directory.

4. Click **Finish**.

**Important:** Do not use the **File > Import** menu item in the Workbench to import a package file. Although the "Zip file" wizard works with archives with the .jar extension, and InterChange Server Express package files have a .jar extension, the "Zip file" wizard does not work properly with package files.

## Deploying the Customer and Employee business objects to the server

You can deploy components to an InterChange Server Express instance using drag-and-drop.

1. Make sure that InterChange Server Express is started and that System Manager is connected to it.
2. In System Manager, expand **Integration Component Libraries > WBIExpressLibrary > Business Objects**. Select the **Customer** business object.
3. Press and hold **Ctrl**.
4. Scroll down and select the **Employee** business object.
5. Drag-and-drop the selected business objects onto the WebSphereICS instance of InterChange Server in the InterChange Server Component Management view, to deploy them.

## Taking the next steps

After completing the instructions provided in this document, see the documents listed below to learn more about what to do next.

- For information about the IBM WebSphere Business Integration Server Express product and the steps necessary to implement a solution, see the System *Implementation Guide*.
- For information about installing the optional Adapter or Collaboration Capacity Packs, available only with the IBM WebSphere Business Integration Server Express Plus product, see the installation guide for your platform: *WebSphere Business Integration Server Express Installation Guide for Windows*, *WebSphere Business Integration Server Express Installation Guide for OS/400*, or *WebSphere Business Integration Server Express Installation Guide for Linux*.
- For information about performing the final configuration tasks for your implementation, including configuration of the adapters installed with IBM WebSphere Business Integration Server Express and the optional Adapter Capacity Pack, see the installation guide for your platform: *WebSphere Business Integration Server Express Installation Guide for Windows*, *WebSphere Business Integration Server Express Installation Guide for OS/400*, or *WebSphere Business Integration Server Express Installation Guide for Linux*.

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