

IBM WebSphere Business Connection



Installation and Configuration Guide for Windows

Version 1.1.1

Note!

Before using this information and the product it supports, be sure to read the general information under “Notices” on page 49.

Fourth Edition (February 2003)

This edition applies to Version 1, Release 1, Modification 1, of *IBM® WebSphere® Business Connection* (5724-D26) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Installation and Configuration

This guide contains information and instructions for installing and testing IBM^(R) WebSphere^(R) Business Connection on a Windows^(R) 2000 server. The Business Connection family of offerings includes:

- IBM WebSphere Business Connection Enterprise Edition
- IBM WebSphere Business Connection
- IBM WebSphere Business Connection Express Edition

Use this book no matter which edition you are installing. Note, however, that the Express Edition, which includes a subset of the components installed with the other editions, differs in its installation instructions. The guide will indicate whether an instruction applies only to a specific edition.

About WebSphere Business Connection

All three of the Business Connection editions are installed on the standard IBM e-business platform, which consists of DB2^(R) and WebSphere Application Server. The Business Connection Express Edition adds the Web Services Gateway to that standard platform. The Business Connection and Business Connection Enterprise Edition add the Business Connection Technology components, such as Solution Management and Document Exchange, as shown in the following illustration. They also include CrossWorlds^(R) technology.

Business Connection Express Edition

Web Services Gateway

Business Connection

System Resource Administration
Solution Management

Services:

- Document Exchange
Partner Registration with Federated Partner Profile

CrossWorlds InterChange Server and Tooling

Trading Partner Interchange Solo

Web Services Gateway

Business Connection Enterprise Edition

System Resource Administration
Solution Management

Services:

- Document Exchange
Partner Registration with Federated Partner Profile

CrossWorlds InterChange Server and Tooling

Trading Partner Interchange Solo

WebSphere Data Interchange

Web Services Gateway

WebSphere Business Connection editions and the contents of each

How this document is organized

The remainder of this document is divided into five parts.

- In the “Part I - Before you begin” on page 3, you’ll find the hardware and software requirements for each of the Business Connection editions.
- In “Part II - Installing and configuring prerequisite software” on page 5, you’ll install the prerequisite programs (such as DB2). You will use this document in conjunction with the installation instructions that come with those programs.
- “Part III - Installing and configuring Business Connection” on page 15 describes how to install and configure the Business Connection Technology components. Installation and configuration are largely automated, although you will perform some manual configuration steps.
- “Part IV - Business Connection Security” on page 41 shows you how to set up security on your Business Connection system.
- “Part V - After installation” on page 47 describes how to remove an installation and how to start the system.

Part I - Before you begin

To install Business Connection and its prerequisite software, you should have experience with installing the Microsoft Windows 2000 operating system, DB2, WebSphere Application Server, and the SecureWay^(R) product family. If you are installing Business Connection or Business Connection Enterprise Edition, you should also have experience with the MQSeries^(R) product family and IBM CrossWorlds.

Also note that WebSphere Business Connection is intended to be run on a dedicated platform. Be aware that the security procedures described in this document affect *all* Web (and application) server content on the Business Connection platform.

Hardware requirements

To install and configure an edition of the Business Connection product, you will need one of the following minimum computer configurations:

For **WebSphere Business Connection Express Edition**, the following minimum hardware is recommended:

- 10 GB of disk space
- 512 MB RAM
- 633 MHz Pentium^(R) III CPU

For **WebSphere Business Connection**, the following minimum hardware is recommended:

- 20 GB of disk space
- 1 GB of RAM
- 633 MHz Pentium III CPU

For **WebSphere Business Connection Enterprise Edition**, the following minimum hardware is recommended:

- 40 GB of disk space
- 2 GB of RAM
- 1.26 GHz Pentium III CPU

Software requirements

The following table shows which software packages should be installed for each Business Connection edition. Before you begin the installation process, make sure you have the right level of software installed or available for installation.

Table 1. Software packages per solution

Software Package	Business Connection Express	Business Connection	Business Connection Enterprise
Microsoft ^(R) Windows 2000 Server (SP2)	X	X	X
Microsoft Internet Explorer Version 5.5	X	X	X

Table 1. Software packages per solution (continued)

Software Package	Business Connection Express	Business Connection	Business Connection Enterprise
IBM DB2 V7.2 with FixPak 6 (Business Connection can use the limited-use license included with the WebSphere Application Server)	X	X	X
IBM WebSphere Application Server 4.02 Advanced Edition	X	X	X
IBM HTTP Server 1.3.19.3 with eFix PQ65518 Important: This is an upgrade to the version of the HTTP Server that comes with WebSphere Application Server. Obtain a copy of the upgrade and install it by following the instructions in the section "Upgrading the HTTP Server" on page 18.	X	X	X
IBM MQSeries 5.2 Server		X	X
IBM MQSeries 5.2 Client		X	X
IBM CrossWorlds InterChange Server 4.1.1 + Administration Tools with TPI Connector (Business Connection includes a limited-use license)		X	X
IBM WebSphere Data Interchange (see http://www-3.ibm.com/software/ts/datainterchange) for information on installing WebSphere Data Interchange)			X
IBM SecureWay Directory Version 3.2.2 for Windows NT	X	X	X
IBM CrossWorlds TPI Solo (1 partner)		X	X
IBM WebSphere Enterprise Extensions 4.0 (JMS Connectors)	X	X	X
Sun JDK 1.3.1_03		X	X
CrossWorlds Visibroker		X	X
IBM WebSphere Business Connection (Business Connection Technology components)	X (Web Services Gateway only)	X	X

Note that the procedures in this guide assume you are performing an initial installation. The sections in this document are arranged in the order you must install the Business Connection components.

Installation Assistance

If you find that some element of the installation process does not work correctly or you have trouble configuring the systems for IBM WebSphere Business Connection, call 1-888-IBM-HELP (888-426-4357).

Part II - Installing and configuring prerequisite software

This section describes the software you need to install before you install the Business Connection edition.

Installing and configuring DB2

DB2 database software is the multimedia, Web-ready relational database management system that is installed on all editions of WebSphere Business Connection.

Note that here and throughout much of this document, the following table is used to indicate the editions of WebSphere Business Connection to which the section applies.

Applies to	Edition
Yes	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

The first step is to define and configure a db2admin user.

Defining a db2admin user

Define a db2admin user in the Administrator group as follows:

1. From Windows, click **Start > Settings > Control Panel > Administrative Tools > Computer Management > Local Users and Groups > Users**.
2. Click **Action > New User**.
3. In the **User name** field, type
db2admin
4. Fill in the **Password** and **Confirm password** fields.
5. Uncheck **User must change password at next logon**.
6. Check both **User cannot change password** and **Password never expires**.
7. Click **Create** and then **Close**.

Adding db2admin to the Administrator group

To add the db2admin user to the Administrator group:

1. Click on the **db2admin** user that was just created, and then right-click and select **Properties**.
2. Click the **Member Of** tab.
3. Click **Add**.
4. Highlight **Administrators**.
5. Click **Add**.
6. Click **OK**.
7. Click **OK**.

Installing DB2

The next step is to install DB2 Version 7.2 and then download and install FixPak6.

1. Install DB2 V7.2, using the following steps in conjunction with the DB2 installation document.
 - a. Select a **Typical** install.
 - b. Add a DB2 administrator and password. For example, set the user as **db2admin** and set the password of choice (as previously defined). It is extremely important that the password for the db2admin user be the same for the operating system definition and the DB2 installation.
 - c. When you are asked whether to install the OLAP Starter Kit, answer **No**.
2. Install FixPak 6:
 - a. Download FixPak 6 and its installation instructions from the following web site:
<http://www6.software.ibm.com/devcon/devcon/docs/db72pf6x.htm>
 - b. Install the FixPak according to the installation instructions.

Installing JDBC[™] support

The next step is to install the JDBC 2.0 support needed by IBM WebSphere Application Server and CrossWorlds InterChange Server. Do the following:

1. From a command prompt, stop the **DB2 JDBC Applet Server** Windows service as follows:
`net stop "DB2 JDBC Applet Server"`
2. In a command window, change to the `<db2_install_path>\java12` directory (the directory in which you installed DB2), and type the following command:
`usejdbc2.bat`
3. Check to see that two files were copied.
Note: If the output of USEJDBC2 indicates that any of the files failed to copy successfully, the JDBC2 update failed. If this occurs, stop all DB2 services and then repeat the above steps. If you see any **access denied** or **process cannot access...** errors and the JDBC Applet Server is indeed not running, some other (non-DB2) process has locked the db2java.zip file for some reason.
4. From a command prompt, start the DB2 JDBC Applet Server Windows service as follows:
`net start "db2 JDBC Applet Server"`
5. Check the contents of the `<db2_install_path>\java12\inuse` file. If JDBC 2.0 is being used, the file will contain:
`JDBC 2.0`

Creating databases

Before you install IBM WebSphere Application Server and CrossWorlds InterChange Server (ICS), you will create databases for the products. Note that if you are installing Business Connection Express Edition, you should skip the steps to install or configure a database for CrossWorlds ICS.

The following table shows information about these databases:

Prerequisite	Database Name	DB2 Parameters
WebSphere Application Server	WAS40	Db2_rr_to_rs = yes Maxagents = 50

Prerequisite	Database Name	DB2 Parameters
CrossWorlds ICS	Cwrepos	Applheapsz = 2048 Maxappls = 50

To create and configure the databases, you will enter a series of commands. All of these commands are entered from a DB2 command window.

1. Create a database for WebSphere Application Server and, for Business Connection and Business Connection Enterprise Editions, CrossWorlds ICS.

Enter the following commands:

```
db2cmd
db2 create db was40 alias was40
db2 create db cwrepos alias cwrepos
```

Note: If you are installing Business Connection Express Edition, do *not* enter the third command, which creates the CrossWorlds ICS database.

2. Configure the instance by entering the following two commands:

```
db2 update db manager config using maxagents 50
db2set db2_rr_to_rs=yes
```

3. If you are installing on Business Connection or Business Connection Enterprise Editions, enter the following commands to configure the database for Crossworlds ICS:

```
db2 update db config for cwrepos using applheapsz 2048
db2 update db config for cwrepos using maxappls 50
```

4. Stop and start the database manager by entering the following three commands:

```
db2 force applications all
db2stop
db2start
```

Configuring DB2 for JTA

Next, you specify Java Transaction Service (JTS) as the distributed transaction manager to use with DB2. The JTS transaction manager supports the Java Transaction API (JTA).

To configure DB2 for JTA:

1. Open the DB2 Control Center.
2. Expand the **Instances** tree and highlight **DB2**.
3. Right-click **DB2**, click **Multisite Update**, and then click **Configure**.
4. In the **Configure Wizard**, select **Use TP Monitor Named below** and click **JTS**.
5. Click **Finish**.

Setting the maximum concurrent databases

The default for the Maximum number of concurrently active databases in DB2 is 8. To use DB2 with the Business Connection components, you must change this value to 16. Do the following:

1. Open the DB2 Control Center.
2. Expand the **Instances** tree and highlight **DB2**.
3. Right-click **DB2**, and then click **Configure**.
4. From the **Environment** tab, change the number under **Maximum number of concurrently active databases** from 8 to 16.

5. Click **OK**.

Verifying DB2 installation and configuration

You can verify that DB2 was installed and configured correctly by doing one of the following:

- Use First Steps to create the sample database that comes with DB2
- Let the WebSphere Application Server “verify the install” when it creates its tables in the WebSphere Application Server database

___ DB2 is installed and verified.

Installing and configuring WebSphere Application Server

WebSphere Application Server Advanced Edition 4.0.2 provides the software platform for all editions of WebSphere Business Connection.

Applies to	Edition
Yes	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

Installing WebSphere Application Server 4.0.2 involves installing FixPak2 to a WebSphere Application Server 4.0.1 installation and then applying an eFix and enhancement. You apply the FixPak as described in this section. In a later section (“Applying updates to WebSphere Application Server” on page 17), you’ll apply the eFix and enhancement.

For those installations using two computers to divide the tasks, both computers need to install WebSphere Application Server.

For Business Connection and Business Connection Enterprise Editions, note the following: When installing WebSphere Application Server on the CrossWorlds computer, use the WebSphere Application Server database created by the previous WebSphere Application Server installation on the WebSphere Application Server computer, and select remote database during installation.

1. Set the DB2 JDBC drivers to JDBC 2.0 if you have not already done so. (See “Installing JDBCTM support” on page 6.)
2. Create a database for WebSphere Application Server if it has not already been done. (See “Creating databases” on page 6.)
3. To start the setup program, enter:
setup.exe
4. Select a **Typical** install.
5. Type a user name and password, and click **Next**.
6. Enter the directory for WebSphere Application Server.
7. If the IBM HTTP Server is not already installed on your computer, enter the location where the IBM HTTP server is to be installed.
8. Select **DB2** for the database and fill in any DB2 options.
9. Let the installation program reboot the system.
10. Install FixPak2 by doing the following:
 - a. Download FixPak2:

- 1) From your browser, go to:
<http://www.ibm.com/support/us/>
- 2) Click **Search the technical support database** field, and enter:
WebSphere Application Server
- 3) From the list that is displayed, select: **WebSphere Application Server Version 4.0 FixPak 2**
- 4) Download the FixPack to your local drive by following the instructions.
- b. Make sure IBM WebSphere Administrative Services and IBM HTTP Services are NOT running.
- c. Enter
`install.bat`
- d. Enter the directory where WebSphere Application Server is installed.
- e. Select **Yes** to upgrade the HTTP Server, and enter the directory where the HTTP Server is installed.
- f. At the **Install Connector Architecture** field, select **Yes**.

Verifying the installation

To verify that the WebSphere Application Server installation is correct:

1. Check the installation log for any errors. The installation log is located in the `<WAS_HOME>\logs` directory.
2. Start WebSphere Application Server. When the server starts the first time, it creates and loads the tables in the DB2 database.
3. For Business Connection and Business Connection Enterprise Editions, make sure WebSphere Application Server is working with the samples before installing WebSphere Application Server on the CrossWorlds computer.

— WebSphere Application Server is installed and verified.

Installing and configuring MQSeries Server and MQSeries Client

Applies to	Edition
No	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

Note: If you are installing Business Connection Express Edition, skip the following section and go to “Installing IBM SecureWay Directory Version 3.2.2 for Windows” on page 13.

This section describes how to install and configure MQSeries. Perform the following steps:

Installing MQSeries

To install both the MQSeries Server and Client, follow the installation instructions and:

1. Select a **Custom** install.
2. Select the **Server**.
3. Select the **Client**.

Note about configuring MQSeries: Do not configure MQSeries at this time. CrossWorlds ICS will install a batch file to configure the Queue Manager and its queues for you.

Installing the MQSeries JMS support

MQSeries JMS support is supplied as a supportPac (ma88) and is available as a Web download. The installation instructions for the supportPac are contained in the MQSeries Using Java guide, which is also available from the MQSeries Web site:

1. From a browser, enter:
`http://www.ibm.com/software/ts/mqseries/txppacs/ma88.html`
2. Download the supportPac and the guide.
3. Follow the instructions in the guide to install the ma88 supportPac.
Note: The supportPac needs to be installed on all offerings **except** WebSphere Business Connection Express Edition.

— MQSeries (including the ma88 supportPac) is installed and verified.

Installing the Sun JDK

Applies to	Edition
No	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

For information on the Java Development Kit (JDK), refer to the web site **www.sun.com**.

To install the JDK, follow the installation instructions and:

1. Uncheck **Java Sources** and **Demos**.
2. Take all the defaults and click **Finish**.

— The JDK is installed and verified.

Installing CrossWorlds VisiBroker

Applies to	Edition
No	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

VisiBroker is on the CrossWorlds InterChange Server CD. Make sure you are using CrossWorlds InterChange Server 4.1.1.

Install VisiBroker as follows:

1. From a command prompt, change to the following directory:
`Cw_cd\ThirdParty\CrossWorldsVisiBroker`
2. Enter:

```
run setupwin32.exe
```

3. During the installation, take all the defaults.

After you install CrossWorlds VisiBroker, set the service to start automatically, as follows:

1. From Windows, click **Start > Settings > Control Panel > Administrative Tools > Services**.
2. Select **CW VisiBroker Smart Agent**, and then right-click and select **Properties**.
3. On the **General** tab, change the **Start type** field to **Automatic**.
4. Click **OK**.

— CrossWorlds VisiBroker is installed and verified.

Installing and configuring CrossWorlds InterChange Server

Applies to	Edition
No	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

Before you install CrossWorlds InterChange Server 4.1.1, make sure you have installed DB2, MQSeries, and CrossWorlds VisiBroker.

Installing the InterChange Server

1. Set the DB2 JDBC drivers to JDBC 2.0 if you haven't already done so. (See "Installing JDBCTM support" on page 6.)
2. Create the database for ICS if it hasn't already been done. (See "Creating databases" on page 6.)
3. Run the setup.
 - a. Select only the following Connectors:
 - JDBC
 - JMS
 - TPI
 - Web Services (SOAP)
 - b. In the **ICS Name** field, put the name you want to give the Server. The convention is *cw_hostname*.
 - c. Change the values in the InterChange Server Configuration panel, as follows:
 - 1) In the **Database Driver** field, select: **DB2**
 - 2) In the **Database** fields, enter:
cwrepos
 - 3) In the **Login** fields, enter:
db2admin
 - 4) In the **Password** fields, enter: *<your_password>*
 - d. For Serverless Trading Agent, select **No**.
4. The final step is to replace the CrossWorlds db2java.zip file with your DB2 version of db2java.zip. Copy `\sqllib\java\db2java.zip` to `\crossworlds\lib\`.

Configuring InterChange Server

1. Define and configure an MQSeries Services Queue Manager.
From Windows, click **Start > Programs > IBM CrossWorlds > MQSeries > Configure Queue Manager**. The configuration then starts.
2. Add an MQ Listener:
 - a. Click **Start > Programs > IBM MQSeries V5.2.1 > MQSeries Services**.
 - b. Expand services until you see the new queue (cw*.queue.manager). If it is not started, start it now. Select it, then right-click **New > Listener**.
 - c. Under the **Parameter** tab, type **1414** for the port, and select **OK**.
 - d. Start ICS. Click **Start > Programs > IBM Crossworlds > Server and Tools > InterChange Server**.
3. Register the new server in the CrossWorlds System Manager:

Note: Before continuing, ensure you have the MSVCP60.DLL in the system path. This Microsoft file is available with Adobe Acrobat Reader and other programs.

 - a. Start CrossWorlds System Manager. Click **Start > Programs > IBM CrossWorlds > Server and Tools > CrossWorlds System Manager**.
 - b. Right-click on **CrossWorlds System > Register New Server**.
 - c. Enter the name used at installation (cw_hostname), and then click **OK**.
 - d. Double-click on the new server name.
 - e. Enter the default **User Name** as **admin** and the **Password** to **null**, and click **Connect**.
4. Verify that log and trace messages are sent to files:
 - a. From the CrossWorlds System Manager with the server connected, click **Server > Configuration**.
 - b. Click the **Trace/Log Files** tab.
 - c. Check **To File** for both Logging and Tracing.
 - d. If needed, change the file name for both Logging and Tracing.
 - e. Click **OK** to save the changes.
5. Load the ICS Repository (the cwrepos database) by clicking **Start > Programs > IBM CrossWorlds > Server and Tools > Load Repository**.
Enter the default user ID as **admin** and the default password as **null**.

Verifying the installation

If the installation finished without any errors, the installation is valid.

Installing the FixPacks

The final step is to download and apply two FixPacks, as follows:

1. Stop any CrossWorlds programs that are running.
2. From your browser, go to:
<http://www.ibm.com/support/us/>
3. Click **Search the technical support database** and enter:
CrossWorlds Web Services Connector 1.0.1

to locate the FixPack for CrossWorlds Web services.
4. Download the FixPack and apply it according to its ReadMe instructions.
5. From your browser, go to:
<http://www.ibm.com/support/us/>

6. Click **Search the technical support database** and enter:

CrossWorlds 4.1.1.1

to locate the FixPack for the CrossWorlds ICS.

7. Download the CrossWorlds ICS 4.1.1.1 FixPack and apply it according to its ReadMe instructions.

— CrossWorlds (including the FixPacks) is installed and verified.

Installing CrossWorlds TPI

Applies to	Edition
No	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

Installing TPI

- If you are installing TPI from a zip file:
 1. Extract the zip file. It should create the directory : \crossworlds_upgrade_files
 2. Create a virtual drive. At the command prompt, type:
Subst t: c:\crossworlds_upgrade_files
 3. Copy the License number from the registration_numbers_solo text file in the C:\crossworlds_upgrade_files directory. You will need this later.
 4. From the t: drive, change the directory to \autorun\.
 5. Run **autoptn.exe**, and then select **Install**.
 6. Accept the defaults.
 7. Paste the License number when requested.
 8. After completing the installation, reboot your computer.
- If you are installing TPI from a CD, simply insert your CD and it should start automatically.

Verifying the installation

You verify the installation by starting the TPI server. Click **Start > Programs > CrossWorlds TPI > Start Server**.

If the Server Display window is displayed, the TPI application is installed.

— The CrossWorlds TPI Server is installed and verified.

Installing IBM SecureWay Directory Version 3.2.2 for Windows

Applies to	Edition
Yes	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

1. From the CD, run **Setup.exe**.

2. Verify installed applications. Make sure the install process finds DB2, Gskit, and IBM HTTP Server. Click **Next**.
 3. Choose **Express** install and select **Client and Server** to be installed.
 4. On the Administration Configuration panel, select the administrator name.
 - a. For Administrator distinguished Name, use **cn=root** (the default).
 - b. For Administrator Password, type a password.
 5. For the WebServer to be Configured, select **IBM HTTP Server**
 6. Select the location of the configuration file: httpd.conf (If you installed IBM HTTP Server anywhere other than the default, use **Browse** to change it.)
 7. Reboot the system when prompted.

After you log in to Windows, the directory will be configured.
 8. From the Windows services panel, change the startup type to **Automatic** for the IBM SecureWay Directory Server V3.2.2.
 9. Start the Directory Server from the Services panel.
- The SecureWay Directory Server is installed and verified.

Part III - Installing and configuring Business Connection

This section shows you how to install and configure the Business Connection components. Make sure you have installed all prerequisite programs for the edition of Business Connection you are installing.

The software that should be on your system

For Business Connection Express, make sure you've installed:

- DB2
- WebSphere Application Server
- SecureWay Directory Server

For Business Connection and Business Connection Enterprise Edition, make sure you've installed:

- DB2
- WebSphere Application Server
- MQSeries (including the ma88 supportPac)
- The Sun JDK
- CrossWorlds VisiBroker
- CrossWorlds (including the FixPack)
- The CrossWorlds TPI Server (if your configuration includes TPI)
- SecureWay Directory Server

For Business Connection Enterprise Edition only, if you are using WebSphere Data Interchange in your configuration, make sure you have installed it. See <http://www-3.ibm.com/software/ts/datainterchange> for information on WebSphere Data Interchange.

The software you will be installing

If you are installing on Business Connection Express Edition, you will install and configure only the Web Services Gateway.

If you are installing on Business Connection or Business Connection Enterprise Edition, you will install and configure the following components:

- Web Services Gateway
- Solution Management
- Security
- System Resource Administration
- Document Exchange
- Registration and Provisioning

In addition to the components listed above, the following files are installed during WebSphere Business Connection installation. Except as noted for Message Warehouse, these components do not require any configuration.

- Business Connection common code, which is in a JAR file named **bctcocommon.jar**. This JAR file contains common classes that can be used by other Business Connection services, such as the exception class that all Business Connection components use.
- Business Connection WebSphere support code, which is in a JAR file named **bctwswas.jar**. This JAR file contains the tracing support code used by some of the Business Connection modules that run in WebSphere Application Server (for example, the Routing Filter, Authentication Filter, MessageWarehouse, and ExceptionHandler components).
- Business Connection Web Services Gateway support code, which is contained in an EAR file named **bctwswsgwsupport.ear**. This EAR file contains the Message Warehouse and Exception Handler components.
 - The Message Warehouse is a wrapper for the Solution Manager client and is used for audit logging.
 - The Exception Handling is called by the Web Services Gateway when an internal exception occurs.
The Message Warehouse component requires configuration of the Solution Manager Logging Client before it can be used.
- Business Connection Web Services Gateway filter code, which includes the following files:
 - The SOAP Routing Filter provides for a selection from several potential target destinations for the same Web services when using a SOAP channel. This filter is in the **bctwswsgwroutingfiltersoap.ear** file.
 - The SOAP/LFT Routing Filter provides for a selection from several potential target destinations for the same Web service when using a SOAP channel and LFT channel for the same service. This filter is in the **bctwswsgwroutingfilterlft.ear** file.
 - The Authentication Filter is used in the Web Services Gateway and provides for obtaining security credentials. This filter is in the **bctwswsgwauthenticationfiltersoap.ear** file.

Starting the Business Connection installation program

If you are installing Business Connection from a CD, note that the CD contains the following files, which are installable images (packaged as self-extracting zip files) for various editions of Business Connection:

WBC Tec 1.1.1 Win 2000 for WBC and WBC Enterprise Editions eImage	C48MSNA.exe
WBC Tec 1.1.1 Win 2000 for WBC Express Edition eImage	C48MTNA.exe
WBC Tec 1.1.1 Sol/AIX for WBC Express Edition eImage	C48MUNA.tar
WBC Tec 1.1.1 Sol/AIX for WBC Edition eImage	C48MVNA.tar
WBC Tec 1.1.1 AIX for WBC Enterprise Edition eImage	C48MWNA.tar

You are entitled to use the version for which you have purchased a license.

To begin the installation of the Business Connection components, do one of the following:

- If you are installing WebSphere Business Connection Express Edition:

Applies to	Edition
Yes	Business Connection Express Edition
No	Business Connection
No	Business Connection Enterprise Edition

1. If you are installing from a CD, insert the CD into your CD drive.
 2. Run the self-extracting zip file:
C48MTNA.exe
 3. Extract the image to a temporary directory, and follow the directions displayed on the screen.
 4. From the temporary directory, run **setupwin32.exe**.
 5. When prompted, provide the path where you want to install WebSphere Business Connection Express Edition.
 6. After the setup program has completed, go to “Applying updates to WebSphere Application Server”.
Note: At the end of installation, you might see a screen directing you to a Web site to obtain a corrected license agreement. When you find the license agreement, you can use it to replace the one that was created during installation. This message does not indicate a problem with the installation itself.
- If you are installing WebSphere Business Connection or Business Connection Enterprise Edition:

Applies to	Edition
No	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

1. If you are installing from a CD, insert the CD into your CD drive.
2. Run the self-extracting zip file:
C48MSNA.exe
3. Extract the image to a temporary directory, and follow the directions displayed on the screen.
4. From the temporary directory, run **setupwin32.exe**
5. After the setup program has completed, continue with “Applying updates to WebSphere Application Server”.

Applying updates to WebSphere Application Server

In this section, you will apply two eFixes to WebSphere Application Server to enable it to run with all editions of the Business Connection (including the Express Edition). The first eFix was installed by the setupwin32.exe program; you simply apply it in the correct directory. The second eFix must be downloaded from an IBM Web site.

Next, you will upgrade the version of HTTP Server that comes with WebSphere Application Server. Finally, you will install an enhancement to WebSphere Application Server.

Applies to	Edition
Yes	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

Applying eFixes

To apply the eFixes

1. Stop any Web servers (such as the IBM HTTP Server and the WebSphere Administrative Server) that are running.
2. From a command window, do one of the following:
 - If you are installing Business Connection Express Edition, go to `<WSGW_HOME>\WAS_eFix_PQ61654`
 - If you are installing Business Connection or Business Connection Enterprise Edition, go to `<BCT_HOME>\WAS_eFix_PQ61654`
3. Enter:
`<WAS_HOME>\java\bin\java -jar PQ61654_eFix_AEServer_AEsServer.jar -target <WAS_HOME>`

Note: Here and throughout this document, make sure you add the path (as shown above) when you use the java command to install an eFix.

4. Download the second eFix:
 - a. From your browser, go to:
`http://www-1.ibm.com/support/docview.wss?uid=swg24001692`
 - b. Download eFix PQ60772 (for 4.0.2) to your local drive and install the eFix by following the Readme instructions for 4.0.2.

Upgrading the HTTP Server

Perform the following instructions to upgrade to a later version of the IBM HTTP Server:

1. Stop the IBM WebSphere Administrative Server Service if it is already running, and set the **Startup** mode to **Manual**.
2. Stop the IBM HTTP Administration Service.
3. Stop the IBM HTTP Server Service.
4. Uninstall the IBM HTTP Server using the Windows **Add/Remove Programs** utility.

Note: Do not manually remove any remaining files or directories after the uninstall program is completed. They contain configuration information that must be preserved.
5. Reboot the system.
6. Download IBM HTTP Server 1.3.19.3 as follows:
 - a. From your browser, go to:
`http://www6.software.ibm.com/dl/websphere/http-p`
 - b. Download IBM HTTP Server 1.3.19.3 (for Windows NT) and install the upgrade by following the prompts. Make sure you install the upgrade in the same directory in which the HTTP Server was installed.
7. Click **OK** if prompted about overwriting or preserving existing files.
8. If there are any installation error messages, you must uninstall IBM HTTP Server, reboot the system, and install IBM HTTP Server again. If the installation is successful, reboot the system, as directed by the prompt.
9. If in step 1 you set the WebSphere Administrative Server Startup to **Manual**, you may now restore it to its original value.
10. Download eFix PQ65518 as follows:
 - a. From your browser, go to:
`http://www-1.ibm.com/support/docview.wss?uid=swg24001764`

- b. Download eFix PQ65518 and install the eFix following the Readme instructions.
11. Start the IBM HTTP Administration Server Service.
12. Start the IBM HTTP Server Service.
13. Start the Web Sphere Administrative Server Service.

Applying the JMS support

To install the enhancement for JMS support:

1. Locate the EE41.zip file as follows:
 - If you are installing Business Connection Express Edition, the file is located in the `<WSGW_HOME>\WAS_JMS_Support` directory.
 - If you are installing Business Connection or Business Connection Enterprise Edition, the file is located in the `<BCT_HOME>\WAS_JMS_Support` directory.
2. Unzip EE41.zip into any directory (for example, `c:\jms`)
3. From a command window, change the directory to `c:\jms`
4. Enter:

```
setup setup.iss -s
```
5. Verify that the **ResultCode** value in the `setup.log` file equals 0. This file is located in the directory in which you unzipped the EE41.zip file (in step 2). If you have any problems, you can add the `-d` option for debug.
6. To verify that you have the correct level of WebSphere Application Server, do the following:
 - a. Display the WebSphere Administrative Console.
 - b. Click **Help > About**.
 - c. Make sure that the version listed is **Advanced Edition for Multiplatforms with Enterprise Edition Services**, as shown in the following illustration:



WebSphere Application Server "About" screen

If your screen shows only "Advanced Edition for Multiplatforms" (without **with Enterprise Edition Services**), the correct level is not installed. To reinstall, stop the WebSphere Application Server and rerun the procedure.

___ The updates to WebSphere are installed and verified.

Configuring the Web Services Gateway

Applies to	Edition
Yes	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

After the setup program has completed and you have applied the updates to WebSphere Application Server, the next step is to configure the Web Services Gateway. For all editions of Business Connection (including the Business Connection Express Edition), follow these steps for each computer in your configuration.

1. Close the WebSphere Administrative Console if it is open.
2. Open a command window.

3. Make sure that `<BCT_HOME>` was set during installation by entering the following at a command prompt:
`set bct`
4. Change to the following directory:
`<BCT_HOME>\<Web_Services_Gateway_directory_name>\install`
5. Enter the following command:
`configure.bat`
6. When prompted for the DB2 path, specify where you installed DB2.
Note: If your DB2 path name contains a space, do *not* include the space in the path name. For example, if the DB2 path on your system is `d:\program files\sqllib`, enter the shortened form, as follows:
`d:\progra~1\sqllib`

You will also be asked for the **db2userid** and the **db2password** that you defined in “Installing DB2” on page 6.

7. If you are installing Business Connection or Business Connection Enterprise Edition, you are prompted for the MQSeries Java path. Enter the path (for example, `c:\MQSeries\Java`).
8. At this point, two command windows are open—the original window (from which you started `configure.bat`) and a DB2 window, in which DB2 commands run. Wait until the DB2 window closes. Then, when you are prompted to do so (from the original window), press any key to continue.
9. Check your `<WAS_HOME>\lib` directory to make sure that the following files are *not* installed in the directory.
 - `uddi4j.jar`
 - `wsif.jar`
 - `wsdl4j.jar`

These files should have been removed automatically by the installation program.

- If none of the files is in the `WAS_HOME\lib` directory, skip ahead to step 10.
 - If one or more of these files *are* in the `<WAS_HOME>\lib` directory, move them as follows:
 - a. Stop the HTTP server.
 - b. If it is open, close the WebSphere Administrative Console.
 - c. Stop the WebSphere Admin Server.
 - d. Move the files from the `<WAS_HOME>\lib` to the `<WAS_HOME>\WSGW_BACKUP\lib` directory.
 - e. Start the HTTP server.
 - f. Start the WebSphere Admin Server.
10. Go to **Start > Programs > WebSphere > Application Server V 4.0 AE > Start Administrator's Console**.
 11. From the **General** tab, make sure the Web Services Gateway Application Server has the Working Directory set to `<WAS_HOME>\bin` and the Module Visibility set to **Application**. From the **File** tab, make sure the logs are directed to an existing directory.
 12. If it is not started, start the Web Services Gateway Application Server.

Web Services Gateway channels

Applies to	Edition
Yes	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

Channels are entry points to the Web Services Gateway and carry requests and responses between Web services and the Web Services Gateway. A request to the Web Services Gateway arrives through a channel, is translated into a WSIF message, is passed through any filters that are registered for the requested service, and finally is sent on to the service implementation. Responses follow the same path in reverse.

The channels that are part of WebSphere Business Connection are:

- ApacheAxis Channel1
- ApacheAxis Channel2
- ApacheSOAP Channel1
- ApacheSOAP Channel2
- LFT Channel1
- LFT Channel2

Two versions of each type of channel are supplied so that, for each channel type, you can set up separate channels for inbound and outbound requests. This provides a simple mechanism for giving different access rights to users from outside your organization from the rights you give to users within your organization:

- To ensure that users outside your organization can only access those internal services that you choose to publish externally, you deploy those services on the public channel.
- To give users inside your organization access to the full range of internal and external services, you deploy those services on the private channel.

Complete the following steps to deploy the channels, filters, LFT sample, and Document Exchange services. Note that the filters and Document Exchange services apply only to Business Connection and Business Connection Enterprise Edition.

1. Make sure that the Web Services Gateway application server is started.
2. From a command window, change to the directory
`<BCT_HOME>\WSGW\install`
3. Enter the following command to deploy the channels and filters. Note that the keyword **HOSTNAME** must be in *uppercase*.
`runCWGenUtility_WSGWConfig.bat -director WSGWConfigInitial.xml
HOSTNAME=<fully-qualified hostname>`

This command configures all the channels and filters that were installed by the setup program. The filters apply only to Business Connection and Business Connection Enterprise Edition.

4. Next, enter one of the following commands. Note that the keyword **BCT_HOME** must be in *uppercase*.

- If you are installing WebSphere Business Connection Express Edition, enter the following:

```
runCWGenUtility_WSGWConfig.bat -director WSGWConfigSampleService_win.xml
BCT_HOME=<BCT_HOME>
```
- If you are installing WebSphere Business Connection or Business Connection Enterprise Edition, enter the following:

```
runCWGenUtility_WSGWConfig.bat -director WSGWConfigSampleService.xml
BCT_HOME=<BCT_HOME>
```

This command configures three services—the two LFT sample scenarios and a service used by the Document Exchange component. Document Exchange applies only to Business Connection and Business Connection Enterprise Edition.

5. To modify the WSDL URI for exported definitions, do the following:
 - a. Display the Web Services Gateway administration console by opening a Web browser and entering:

```
http://<HOSTNAME>/wsgw/admin
```
 - b. Click on the **Configure Gateway** link.
 - c. Check to see whether the **WSDL URI for exported definitions** field contains a fully qualified host name. If it does not, modify the name so that it is fully qualified.
 - d. Click **Apply Changes**.

If you are going to use LFT (Large File Transfer support), refer to the Using the Web Services Gateway document, which contains sample procedures you can use to verify your LFT installation. Before you run the LFT samples, make sure your PATH system environment variable includes **<WAS_HOME>\java\bin**.

Note: Business Connection Express Edition users have finished the installation and configuration of Business Connection Express Edition. For information on administering the Web Services Gateway, see Using the Web Services Gateway.

Security

Applies to	Edition
No	Business Connection Express Edition
Yes	Business Connection
Yes	Business Connection Enterprise Edition

The WebSphere Business Connection uses various products to provide security services. These services include authentication, authorization, and encryption to protect the following:

- Access to the WebSphere Administration Console
- Access to the Web Services Gateway Administration pages
- Access to the Business Connection System Resources Administration pages
- Access to the Registration and Provisioning pages
- Access to the SOAP and AXIS channels

This section applies to configuration of the WebSphere Business Connection machine only. Specific instructions for the various artifacts are covered later in this document.

Configuring SecureWay Directory

The first step in securing your Business Connection system is to configure the LDAP directory. An ldif file is provided with Business Connection that contains a set of WebSphere and Business Connection administrators. This file is described later in this section.

1. First, create the necessary suffixes:
 - a. To open the Web-based administration facility of SecureWay Directory, open a Web browser and go to:
`http://<hostname>/ldap`

If a pop-up windows appears stating that the Java Plug-in 1.3.1. 02 cannot be located because "a value in the registry key HKEY LOCAL MACHINE\SOFTWARE\JavaSoft\Java Plug-in\1.3.1 03 is not found or is no longer valid," perform the following steps:

- 1) From the Internet Explorer browser, select **Tools > Internet Options**.
 - 2) Click the **Advanced** tab and scroll down until you see the Java (Sun) settings.
 - 3) Uncheck the box **Use Java 2 v1.3.1 03**, and then click **OK**.
 - 4) Reload the page, and the LDAP Administration page will appear.
- b. Log in as **cn=root**.
 - c. On the **Settings > Suffixes** page, add the **o=Root Organization** suffix and then select **Update**.
 - d. Add the suffix **dc=allegro**, and then select **Update**.
 - e. Restart the SecureWay Directory service.
2. Start a command window and change the directory to `<BCT_HOME>\properties`
 3. Run the following command to load the LDAP data:
`ldif2db -i wbc.ldif`
 4. Change the directory to `<WBCUI_HOME>\ldapschema`, where WBCUI_HOME is the directory where the user interface for WebSphere Business Connection was installed (for example, c:\allegro)
 5. Run the following command to load the LDAP data:
`ldif2db -i ldapdata.ldif`
 6. To verify that the data is loaded, go to **Start > Programs > IBM SecureWay Directory > Directory Management Tool**.
 7. Expand the **o=Root Organization** tree to verify that the data is displayed.
 8. Expand the **dc=allegro** tree to verify that the data is displayed.

At this point, the data is stored in the SecureWay Directory. It contains the WebSphere Administrator user ID, which is used to start the WebSphere Administrative Console. It is defined as **uid=spadmin,dc=Users,dc=allegro**, and its password is **spadmin**

The password should be changed to prevent unauthorized access to this data. Use the Directory Management Tool to change the password.

Configuring WebSphere Security

The next step is to configure security for the WebSphere Application Server. Global security will be enabled later in the section "Other configurations" on page 36.

1. From the **WebSphere Administrator's Console**, go to **Console > Security Center**.
2. Click the **Authentication** tab, and select the **Lightweight Third Party Authentication** radio button.
3. Make sure **Enable Single Sign On** is checked, and then enter the domain in which the WebSphere Application Server is running (for example, bocaraton.ibm.com), as shown in the following sample:

The screenshot shows the 'Security Center' window with the 'Authentication' tab selected. The 'Authentication Mechanism' is set to 'Lightweight Third Party Authentication (LTPA)'. Under 'LTPA Settings', 'Token Expiration' is 120 minutes, 'Enable Single Sign On (SSO)' is checked, and the 'Domain' is 'bocaraton.ibm.com'. Below this, 'LDAP' is selected as the mechanism, and 'LDAP Settings' are configured: 'Security Server ID' is 'spadmin', 'Security Server Password' is masked, 'Host' is 'bcm12', 'Port' is '389', 'Base Distinguished Name' is 'dc=alle', 'Bind Distinguished Name' is 'cn=root', and 'Bind Password' is masked. The 'Directory Type' is 'SecureWay'. Buttons for 'Generate Keys...', 'Import Key...', 'Export Key...', 'Advanced...', and 'SSL Configuration' are visible.

Security Center Authentication tab with LDAP settings

This page shows the settings required for using LDAP as the authentication mechanism. Click **Help** if you need information about the fields on this tab.

4. On the LDAP Settings, enter the following:

Field Name	Value
Security Server ID	spadmin
Security Server Password	spadmin
Host	<hostname of the Directory server>
Port	389
Base Distinguished Name	dc=allegro
Bind Distinguished Name	cn=root
Bind Password	<Directory password>
Directory Type	SecureWay

5. Click **OK**.
6. When a prompt appears requesting the LTPA password, enter a password.

7. Close the WebSphere Admin Console.

Configuring Business Connection components

Special Note:

The remaining sections of this document apply only to Business Connection and Business Connection Enterprise Edition. Stop here if you are installing and configuring Business Connection Express Edition.
--

This section describes the steps you take to configure the following Business Connection components:

- Solution Manager
- System Resource Administration
- Document Exchange
- Registration and Provisioning

To configure these components, you will run a series of batch files that take as a parameter the name of an XML file containing configuration settings. The batch file is named BCTConfigure.bat.

Note: The system will aid in the completion of the entries, but they should be verified by the installer for accuracy and completeness.

When you run the batch file, you will see the Configuration Wizard screens, which already contain prefilled information. For example, the location of the MQSeries program might already be filled in, if the configuration program can determine this information.

If you have installed the prerequisite software, your BCTConfigure.bat file should already have some of the environment variables set up.

The information that appears on the Configuration Wizard screens is derived from the system environment variables, if they are set. If no value can be found, the configuration program leaves the field blank, and you can enter a value.

Running the Configuration Wizard

Important: Before you begin the configuration tasks, be aware that the following can occur while you are running one of the configuration programs (BCTConfigure.bat):

- The WebSphere Administrative Server fails to start while you are configuring it.
- The configuration stops when you start WebSphere Administrative Server.
- The configuration program fails. If the program fails, be sure to check the log files.

To recover from any of these occurrences, do the following:

1. Restart WebSphere Administrative Server from the Windows services panel.
2. Re-run the BCTConfigure.bat program that had the failure.

If these steps do not work, reboot the computer and rerun the BCTConfigure.bat program that had the failure.

Preparing to run the Configuration Wizard

Wherever you see variable statements, such as `<BCT_HOME>`, replace that string with your actual value. You might want to make a note of the settings you use for:

- `<WAS_HOME>` - the directory where IBM WebSphere has been installed (for example, `c:\websphere\appserver`)
 - `<BCT_HOME>` - the directory where IBM WebSphere Business Connection has been installed (for example, `c:\wbc`)
 - `<WBCUI_HOME>` - the directory where IBM WebSphere Business Connection User Interface has been installed (for example, `c:\allegro`)
 - `<CW_HOME>` - the directory where CrossWorlds has been installed (for example, `c:\crossworlds`)
 - `<CWTPI_HOME>` - the directory where CrossWorlds TPI Server has been installed (for example, `c:\crossworldsTPI`)
 - `<LDAP_HOME>` - the directory where IBM SecureWay resides (for example, `c:\program files\ibm\ldap`)
 - `<MQ_JAVA_INSTALL_PATH>` - the directory where IBM MQSeries classes for Java and Java Message Service have been installed (for example, `c:\mqseries\java`)
 - `<yournode>` - the actual name of your system (for example, `wbc4you`)
 - `<hostname>` - the actual address of your system (for example, `wbc4you.bocaraton.ibm.com`). Note: a fully qualified name is required.
 - `<DB2_HOME>` - the directory where IBM DB2 has been installed (for example, `c:\sqllib`)
1. Before you begin, update the PATH System environment variable to include `<BCT_HOME>\bin;<JAVA_HOME>\bin;<MQ_JAVA_INSTALL_PATH>\lib` if it is not already there (for example, `c:\WBC\bin;c:\jdk1.3.1_03\bin;c:\MQSeries\java\lib`).
 2. Be aware that the BCTConfigure.bat file includes the `-v` attribute, which causes the configuration program to stop at each step so that you can look at log files. If you do not want to view the log files at each step, open the BCTConfigure.bat file for edit and remove the `-v` attribute.

Configuring WebSphere Business Connection for WebSphere Application Server

In this section, you will configure WebSphere Business Connection components by providing information (or accepting the information that is already provided) on the BCT_Install_Wizard screens.

The total length of the entries on the BCT_Install_Wizard screens is limited. Therefore, if you have directories that include spaces (such as **program files**), it is recommended that you use the DOS short name of the file (in this example, **progra~1**).

To configure the WebSphere Business Connection components, follow these steps:

1. Make sure that the MQSeries Queue Manager and the WebSphere Application Server are running.
2. Open a command prompt and change the directory to:
`<BCT_HOME>\bin`
3. Start the batch file with the parameter shown:
`BCTConfigure.bat bct_was.xml`

The BCT Install Wizard screen (with sample data) is what you will see:

The screenshot shows the BCT_Install_WIZARD window with the following configuration fields and values:

Field Name	Value
WAS_HOME	C:\WebSphere\AppServer
MQ_HOME	C:\MQSeries
MQ_JAVA_INSTALL_PATH	C:\MQSeries\Java
CW Queue Manager's Name	cw_bcm13.queue.manager
CHECK QUEUE MANAGERS	CHECK
DB2_HOME	C:\SQLLIB
BCT_HOME	C:\WBC
HTTP_SERVER_HOME	
KEYSTORE_PASS	
TRUSTSTORE_PASS	

Buttons: Submit, Cancel

WebSphere Business Connection Installation Wizard

The configuration program fills in the values that it can determine.

4. If the fields are not filled in, or if the information is not correct, enter the appropriate values for the locations and names. Note that you should **not** enter a slash at the end of a path.

Change (or enter) information **only if** the prefilled information is incorrect or the field is blank.

Here are some examples of these values you might need to change as you go through the configuration. The sample values are intended to show you the format in which the information should be entered. In the samples, the host name is WBCSYSTEM1 and the connection-specific DNS Suffix is wbc.yourcompany.com. Substitute the actual values for your own system when you complete the screens.

Given the values of WBCSYSTEM1 and wbc.yourcompany.com, the system installation would default to the values shown in the table. Remember: use the values for *your* system.

Field	Sample value (Substitute the actual values for your system)	Description
WAS_HOME	c:\WebSphere\appserver	The drive and folder where WebSphere Application Server is installed.
MQ_HOME	c:\MQSeries	The drive and folder where MQ Series is installed.
MQ_JAVA_INSTALL_PATH	c:\MQSeries\Java	The drive and folder where the Java classes for MQSeries (MA88) are installed.
CW Queue Manager's Name	cw_WBCSYSTEM1.queue.manager (Use your actual value in place of WBCSYSTEM1.)	The name of the MQ Queue Manager where WebSphere Business Connection has all its queues. You can find this information by opening the MQSeries Explorer.
DB2_HOME	c:\SQLLIB	The drive and folder where DB2 is installed.
BCT_HOME	c:\wbc	The name of the directory where WebSphere Business Connection is installed. This information was entered when you started the installation ("Starting the Business Connection installation program" on page 16).
HTTP_SERVER_HOME	c:\IBM HTTP Server	The drive and folder where the HTTP server was installed.
KEYSTORE_PASS	password	The password of the keystore to be used for enabling SSL on the SOAP connector. The password must be at least 6 characters.
TRUSTSTORE_PASS	password	The password of the truststore to be used for enabling SSL on the SOAP connector. The password must be at least 6 characters.

Before you click OK, you can test to make sure that the queue managers listed are correct. Click **Check**. If the name is valid, you will see a message indicating the name and status (for example, Running). If the name is not correct, you will see a message stating that the queue manager is not valid or is unknown.
Click **OK**.

- Next, you configure the System Resource Administration component. Click **System Resource Admin** and fill in (or accept the prefilled) values for the fields.

Field	Sample value (Substitute the actual values for your system)	Description
CW Server Domain	WBCSYSTEM1.wbc.yourcompany.com	The fully qualified host name of your system.

Field	Sample value (Substitute the actual values for your system)	Description
ICS Server	cw_ WBCSYSTEM1	The ICS Server name. You can find this information by using the CrossWorlds System Management console.
ICS Username	admin	The ICS user name.
ICS Password	null	The ICS user's password.
WSGW Node name	WBCSYSTEM1	The WebSphere Application Server node where Web Services Gateway is installed. This information is available from the WebSphere Advanced Administrative Console.

Click **OK**.

6. To configure the Document Exchange component, click **Document Exchange** and fill in (or accept the prefilled) values for the fields.

Field	Sample value (Substitute the actual values for your system)	Description
DB2 Username	db2admin	The DB2 user with sufficient authority to create databases and tables.
DB2 Password	db2admin	The password for the DB2 user.
ICS Server	cw_ WBCSYSTEM1	The ICS Server name. You can find this information by using the CrossWorlds System Management console.
ICS Username	admin	The ICS user name.
ICS Password	null	The ICS user's password.
CW_HOME	c:\crossworlds	The drive and folder where CrossWorlds is installed.
WSGW Node Name	WBCSYSTEM1	The WebSphere Application Server node where Web Services Gateway is installed. This information is available in the WebSphere Advanced Administrative Console.

Before you click **OK**, you can test to make sure that the DB connection is correct. Click **Test**. If it is correct, you will see a message indicating the connection was successful. If it is not correct, you will see a message stating that the connection was unsuccessful.

Click **OK**.

7. Finally, to configure the Registration and Provisioning component, click **Registration and Provisioning** and fill in (or accept the prefilled) values for the fields.

Field	Sample value (Substitute the actual values for your system)	Description
BCT Node	WBCSYSTEM1	The WebSphere Application Server node where Business Connection is installed. This information is available from the WebSphere Advanced Administrative Console.
BCT Domain	wbc.yourcompany.com	The connection-specific DNS Suffix. You can find this information on Windows 2000 by running the ipconfig command from a command window.
BCT_TCPIP	9.99.99.99	Your IP address. You can find this information on Windows 2000 by running the ipconfig command from a command window.
LDAP Home	c:\ldap	The drive and folder where SecureWay Directory (LDAP) is installed.
LDAP Admin Name	cn=root	The LDAP administrator's user name.
LDAP HOST	WBCSYSTEM1	The name of the system where LDAP is installed.
LDAP_PW	admin	The LDAP password.
WBCUI Install Drive	c	The drive letter where the WebSphere Business Connection user infrastructure is installed.
CWTPI Home	c:\crossworldsTPI	The drive and folder where CrossWorlds TPI is installed.

Before you click OK, you can test to make sure that the LDAP connection is correct. Click **Test**. If it is correct, you will see a message indicating the connection was successful. If it is not correct, you will see a message stating that the connection was unsuccessful.
Click **OK**.

8. Click **Submit**.

Note: If you click Submit before completing the fields for all the components, the configuration program will prompt you. For example, if you clicked Submit before completing the information for System Resource Administration, the System Resource Administration screen would be displayed, and you would have to fill out the fields (or accept the prefilled values), click OK, and then click Submit on the BCT Install Wizard page.

9. Check the logs for any exceptions or error conditions. If there is nothing in the log, the configuration completed successfully.

If you receive the following errors:

SQL0240N <database name> is an undefined name.
SQSSTATE=42704

SQL1224N A database agent could not be started to service a request, or was terminated as a result of a database system shutdown or a force command.
SQLSTATE=55032

```
DB21034E The command was processed as an SQL statement because it was not a
valid Command Line Processor command. During SQL processing it returned:
SQL0900N The application state is in error. A database connection does not
exist.
SQLSTATE=08003
```

but the program continues with the output shown below, then the above errors should be ignored:

```
Database Connection Information
Database server = DB2/NT 7.2.4
SQL authorization ID = ADMINIST...
Local database alias = BCMLOG
```

10. From a DB2 command window, connect to the BCMLOG database by entering the following command:
DB2 connect to bcmlog
11. Change to the bnd subdirectory by entering:
cd sqllib\bnd
12. Bind the database by entering the following commands from the bnd directory while connected to the database:
DB2 bind @db2ubind.lst blocking all grant public
DB2 bind @db2cli.lst blocking all grant public
13. Set up security for the WebSphere Control Program as follows:
 - a. If your user ID or password for WebSphere is anything other than **spadmin**,
 - 1) Edit the **sas.wscp.props** file (located in the <WAS_HOME>\properties directory), and update the following properties:
com.ibm.CORBA.loginUserid=*Websphere login ID*
com.ibm.CORBA.loginPassword=*Websphere login password*
 - 2) Save the file and exit.
 - b. Open a command window and change to directory <WAS_HOME>\properties.
 - c. Enter the following command:
<WAS_HOME>\bin\PropFilePasswordEncoder.bat sas.wscp.props -SAS
14. Deploy HostingEAR.ear:

Note: When you install the HostingEAR.ear file, a window will appear asking you to deny access to all unprotected methods. Click **No**.

 - a. Start the WebSphere Application Server Administrative Console, if it is not already started.
 - b. Click on **Console**, select **Wizards**, click **Install Enterprise Application**.
 - c. From <BCT_HOME>\lib, select **HostingEAR.ear**, and click **Next**.
 - d. Click **Next** until you arrive at the **Selecting Virtual Hosts for Web Modules**.
 - e. Highlight all the Web Modules, click **Select Virtual Host**, choose **allegro_host**, click **Next**.
 - f. Highlight all the modules, click on **Select Server** and select the Default Server. Then click **OK**.
 - g. Click **Next**.
 - h. Click **Finish** to deploy the EAR file.
 - i. Select **No** on the pop-up window.
15. Deploy HostingUIEAR.ear:

- a. Start the WebSphere Application Server Administrative Console, if it is not already started.
 - b. Click on **Console**, select **Wizards**, click **Install Enterprise Application**.
 - c. From `<BCT_HOME>\lib`, select **HostingUIEAR.ear**, and click **Next**.
 - d. Click **Next** until you arrive at the **Selecting Virtual Hosts for Web Modules**.
 - e. Highlight all the Web Modules, click **Select Virtual Host**, choose **allegro_host**, click **Next**.
 - f. Highlight all the modules, click on **Select Server** and select the Default Server. Then click **OK**.
 - g. Click **Next**.
 - h. Click **Finish** to deploy the EAR file.
 - i. Select **No** on the pop-up window.
16. Configure WebSphere Application Server Default Server:
- a. Expand **WebSphere Administrative Domain, Nodes, <yournode>, Application Servers, Default Server**.
 - b. In the right panel, click **General**.
 - c. In the **Module Visibility Field**, select **Application**.
 - d. Click on **File**, change stdout.txt and stderr.out to:
`<BCT_HOME>\logs\wbcuiout.txt` and `<BCT_HOME>\logs\wbcuierr.txt` respectively.
 - e. Click the **JVM Settings** tab.
 - f. In the **Classpaths** field, click **Add**, and type:
`<WBCUI_HOME>;<WBCUI_HOME>\config;<BCT_HOME>\properties;<DB2_HOME>\cc\xml4j.jar`
 - g. If you are not using the Secure Socket Layer (SSL), do the following:
 - 1) Click the **Services** tab, select **Web Container Service**, and click **Edit Properties**.
 - 2) Select **Transport** in the **Web Container Service** window, change the port number of HTTP transports from 9080 to **8080**, and click **OK**.
 - h. Click **Apply**.
17. From the `<BCT_HOME>\bin` directory, start the batch file:
`BCT_RP_INSTALL_ALL_2`

Configuring WebSphere Business Connection components for CrossWorlds

The following commands create the CrossWorlds objects required for WebSphere Business Connection 1.1.1. The commands might also overwrite some existing CrossWorlds objects. Specifically, if you are also using the CrossWorlds InterChange Server for other (non-WebSphere Business Connection) applications, the data handler meta-objects in `<BCT_HOME>\CW\CW_TL\bcttc.cw.out` might overwrite existing customized data handler meta-objects. Be sure to make a backup copy of the CrossWorlds repository before running the commands. You might need to modify the newly installed data handler meta-objects to restore the customizations required for the other applications.

Make sure that the CrossWorlds InterChange Server is running.

1. Start the batch file with the parameter shown:
`BCTConfigure bct_cw.xml`

This batch file creates the MQseries queues and the connector agents. Check the `<BCT_HOME>\logs\bctde_configureMQ.log` and `<BCT_HOME>\logs\bctde_createConnAgent.log` for any errors.

Be aware that one of the actions of the BCTConfigure.bat program is to update a file called start_server.bat, which is in the `<CrossWorlds_Home>\bin` directory. One of the changes it makes is to include two virtual drives (**x:** and **y:**) in the file. If drives **x** and **y** are already being used on your system, you will need to open the start_server.bat file for edit, locate the **x** and **y** drive names and replace them with drive names that are not being used on your system.

2. Restart the CrossWorlds InterChange Server.
3. Run the following batch files under `<BCT_HOME>\bin` from a command prompt to load the CrossWorlds repository:

```
bctde_loadRepository.bat  
bctrp_loadRepository.bat  
bcttl_loadRepository.bat
```

Note: You might see a message that states:

Failed to load NativeMap class: xxxxxx

where xxxxxx is a map name. If you see the message, ignore it and continue.

4. Restart the CrossWorlds Interchange Server.
5. From the CrossWorlds System Manager, do the following:
 - a. Configure BCTDocTransferReceiveconnector:
 - 1) Right-click the connector name and select **Edit Definitions**.
 - 2) When the Connector Designer is displayed, click the **Application Config Properties** tab.
 - 3) Enter the information for **ApplicationUserName** and **ApplicationPassword**, and save the changes. For example, if your DB2 User ID is **db2admin** and your DB2 password is **db2**, these are the values you enter.
 - 4) Click **File > Save to Server** to save and exit.
 - b. Configure BCTDocTransferSendconnector:
 - 1) Right-click the connector name and select **Edit Definitions**.
 - 2) When the Connector Designer is displayed, click the **Application Config Properties** tab.
 - 3) Enter the information for **ApplicationUserName** and **ApplicationPassword**, and save the changes. For example, if your DB2 User ID is **db2admin** and your DB2 password is **db2**, these are the values you enter.
 - 4) Click **File > Save to Server** to save and exit.
 - c. Configure the Email connector:
 - 1) Right-click the connector **EmailConnector** and select **Edit Definitions**.
 - 2) Select the **Application Config Properties** tab
 - 3) In the Value column for SMTP_MailHost, enter your SMTP Server.
 - 4) Ensure DebugMode is set to **false**
 - 5) Ensure DataHandlerConfigMO is blank.
 - 6) Click **File > Save to server** to save and exit.
 - d. Configure the TPI connector:
 - 1) Right-click the connector and select **Edit Definitions**.

- 2) Select the **Application Config Properties** tab.
- 3) If you see a dialog box prompting you for a Yes/No answer, specify **Yes**.
- 4) Select the `TradingPartnerConfigurationFile` property and in the **Value** field, enter
`<BCT_HOME>\bin\tpicfg.in`

where `<BCT_HOME>` is the actual directory of the WebSphere Business Connection.

- 5) Click **File > Save to server** to save and exit.
6. Update the collaboration properties, as follows:
 - a. From the CrossWorlds System Manager, right-click on the collaboration object **SAI_to_BCTDEReceiveConnector_BCT_DocumentTransferInbound**, select **Properties**, and on the right side of the window, select the **Properties** tab.
 - 1) Set the `BCT_LOG` value to **Yes** for logging in to the Solution Manager.
 - 2) Set the `BCT_FILE_DOWNLOAD_DIR` to the directory where the Web Services Gateway downloads the file. To determine the directory, open the Web Services Gateway application, open **JVM Settings**, and look at the **System Properties lft-directory** entry.
 - 3) Click **OK** to save.
 - b. Right-click on the collaboration object **BCTDESendConnector_to_BCTDESOAPConnector_BCT_DocumentTransferOutbound**, select **Properties**, and on the right side of the window, select the **Properties** tab.
 - 1) Set the `BCT_LOG` value to **Yes** for logging in to the Solution Manager.
 - 2) Set the `BCT_SOAP_SERVER_URL` to the outbound Web Services Gateway SOAP server URL. The default is:
`http://<localhost>/wsgwsoap1/soaprpcrouter`.
 - 3) Click **OK** to save.
7. Create a shortcut to start the `start_SOAP.bat` script in the `BCTFedSOAP` directory, as follows:
 - a. Click **Start > Programs > IBM CrossWorlds > Connectors**
 - b. While holding down the right button, drag the SOAP Connector icon to the desktop.
 - c. Select **Copy Here**.
 - d. Rename the new icon **BCTFedSoap Connector**
 - e. Right-click the new icon and select **Properties**.
 - f. On the **Shortcut** tab, change the **Target** field to replace references to the SOAP connector to **BCTFedSOAP**. The following example shows how the new field should look. The replaced references are highlighted.
`<CW_HOME>\connectors\BCTFedSOAP\start_SOAP.bat BCTFedSOAP <ICS name>
 -c<CW_HOME>\connectors\BCTFedSOAP\SOAPAgentConfig.cfg`
 - g. Click **OK**.

This shortcut has to be run every time you start the InterChange Server.

8. Create a shortcut to start the `start_SOAP.bat` script in the `BCTCMSSOAP` directory, as follows:
 - a. Click on **Start -> Programs -> IBM CrossWorlds -> Connectors**
 - b. While holding down the right button, drag the SOAP Connector icon to the desktop.

- c. Select **Copy Here**.
- d. Rename the new icon **BCTCMSSoap Connector**
- e. Right-click the new icon and select **Properties**.
- f. On the **Shortcut** tab, change the **Target** field to replace references to the SOAP connector to **BCTCMSSOAP**. The following example shows how the new field should look. The replaced references are highlighted.


```
<CW_HOME>\connectors\BCTCMSSOAP\start_SOAP.bat BCTCMSSOAP <ICS name>
-c<CW_HOME>\connectors\BCTCMSSOAP\SOAPAgentConfig.cfg
```
- g. Click **OK**.

This shortcut has to be run every time you start the InterChange Server.

9. Restart the CrossWorlds Interchange Server.

Other configurations

Complete the following procedures to finish the configuration:

1. Enable WebSphere Administrative Server security:
 - a. From the **WebSphere Administrator's Console**, go to **Console > Security Center**.
 - b. The security center menu is displayed. From the **General** tab, check the box for **Enable Security**.
 - c. Stop and start the WebSphere Admin Server so that the changes will take effect.
2. Encode and encrypt passwords.
 - a. Encoding the LDAP password is optional. If you want to encode the password, do the following:
 - 1) Start a Windows command prompt.
 - 2) Change to the `<BCT_HOME>\bin` directory
 - 3) Enter:


```
WBCEncodePassword password
```

where *password* is your LDAP password.
 - 4) Open the following file for edit:


```
<WBCUI_HOME>\config\LDAPConfig.properties
```
 - 5) Locate the line **LDAPRootpassword=<admin password>**
 - 6) Change the value to the encoded LDAP password you generated in an earlier step.
 - 7) Save and close the file.
 - b. Encrypt the DB2 and LDAP passwords:
 - 1) From the Windows command prompt, change to the `<BCT_HOME>\wms\bin` directory.
 - 2) Enter:


```
wms_encrypt password
```

where *password* is your DB2 password.
 - 3) The **ASCII encrypted string value** is the one needed. Make a note of it.
 - 4) Enter


```
wms_encrypt password
```

where *password* is your LDAP password.
 - 5) The **ASCII encrypted string value** is the one needed. Make a note of it.

- 6) Open the following file for edit:
`<WAS_HOME>\installedApps\WebSphere_Member_Services.ear\classes\xml\wms.xml`
 - 7) Change: @PASSWORD@ to the encrypted DB2 password (which you made a note of in an earlier step).
 - 8) Change: @ADMIN_PW@ to the LDAP admin encrypted password. Use the value you made note of in an earlier step.
 - 9) Save and close the file.
3. Change the system font to use small fonts:
 - a. Position the mouse cursor on the screen and right-click.
 - b. Click **Properties**.
 - c. In the Display Properties screen, click **Settings** and then click **Advanced**.
 - d. In the Display box, click **Small Fonts**.
 - e. Click **OK**.
 - f. Click **OK**.
 4. Configure the CrossWorlds TPI Server to set the HTTP port to 5081:
 - a. Start the TPI CrossWorlds Server Administrator Console.
 - 1) Select **Start > Programs > CrossWorldsTPI > Administrator**.
 - 2) At the Login pop-up, click on **OK**.
 - b. Select **Tools**, and then select **Preferences**.
 - c. In the **Preference** window, select **Ports**.
 - d. Under the API heading, in the **HTTP port** field, enter 5081
 - e. Click **OK**.

Securing WebSphere Business Connection enterprise applications

To secure WebSphere Business Connection applications and map roles to groups to secure the applications, perform the following steps:

1. Open a command prompt and change the directory to:
`<BCT_HOME>\bin`
2. Start the following batch file with the parameter shown:
`BCTConfigure.bat bct_was_map_roles.xml`
3. Right-click the node name in the WebSphere Administrative Console and click **Regen WebSphere plugin**.
4. Restart the **WebSphere Administrative Server** and the **WebSphere Administrative Console**.

Verifying the installation and configuration

Before verifying the installation and configuration of WebSphere Business Connection, make sure that the following prerequisite programs are running:

- MQSeries service
- MQSeries Queue Manager
- MQSeries Listener
- CrossWorlds Visibroker smart agent
- WebSphere Application Server service
- WebSphere Application Server Administrative Console

- CrossWorlds InterChange Server
 - CrossWorlds System Manager
 - CrossWorlds TPI Server
 - SecureWay Directory Service
1. Verify LDAP by performing the following steps from SecureWay Directory Service:
 - a. Start the Directory Management Tool
 - b. Make sure you see:


```
o=Root Organization
dc=allegro
```
 2. Verify Web Services Gateway:
 - a. From the WebSphere Application Server Administrative Console, start the WSGW Application Server.
 - b. Start the Web Services Gateway Admin console by entering the following from a browser:


```
http://<hostname>/wsgw/admin
```

Use **spadmin** for the UserID and password.
 - c. Select **List** under **Channels**.
 - d. Make sure you have definitions for ApacheSOAPChannel1 and ApacheSOAPChannel2.
 3. Verify CrossWorlds artifacts
 - a. From the CrossWorlds System Manager, start the following collaboration objects if they are not running already:


```
SAI_to_BCTDEReceiveConnector_BCT_DocumentTransferInbound
BCTDESendConnector_to_BCTDESAPConnector_BCT_DocumentTransferOutbound
RegSync
RegSyncEmail
```

A green icon next to the object signifies that it has started. If the collaborations are not running, click **Start**.
 - b. From the CrossWorlds System Manager, start the following connectors if they are not running already:


```
BCTDocTransferSendConnector
BCTDocTransferReceiveConnector
BCTDocTransferSOAPConnector
BCTCMSSOAPConnector
BCTFedSOAPConnector
EMailConnector
```

A green icon next to the connector signifies that it has started. If a connector is not running, click **Start**.
 - c. Under Maps, confirm that the following maps are started:


```
BCT_SOAP_CMS_upgrade_to_BCTPartnerProfileGB0
BCT_SOAP_FederationService_add_to_BCTPartnerProfileGB0
BCTPartnerProfileGB0_to_BCT_SOAP_CMS_upgrade
BCTPartnerProfileGB0_to_BCT_SOAP_FederationService_add
XML_BCTPartnerProfileInput_to_BCTPartnerProfileGB0
```

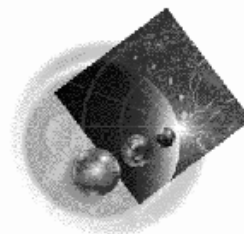
A green icon next to the map signifies that it has started. If a map is not running, click **Start**.
 - d. Next you will run a series of batch files. As you run each batch file, check to see whether any errors appear in the command window.

- 1) Open a command prompt and enter the following:
`cd <CROSSWORLDS>\connectors\BCTDocTransferSend`
 - 2) Run the following batch file:
`bctde_conn_run_send.bat`
 - 3) Open another command prompt and enter the following:
`cd <CROSSWORLDS>\connectors\BCTDocTransferReceive`
 - 4) Run the following batch file:
`bctde_conn_run_receive.bat`
 - 5) Open another command prompt and do the following:
`cd <CROSSWORLDS>\connectors\BCTDocTransferSOAP`
 - 6) Run the following batch file:
`bctde_conn_run_SOAP.bat`
4. Verify WebSphere Application Server artifacts:
 - a. Start the **BCT_DE** server.
 - b. Start the **WebSphere Member Services** server.
 - c. Start the **BCT_RP_Web** server.
 - d. Start the **BCT_RP_TC** server.
 - e. Start the **Default** Server.
 - f. Start the **BCT_RP** server.
 - g. Start the **BCT_SRA** server.
 - h. Start the **BCT_SRA_CW** server.
 - i. Start **BCTExceptionLog**.
 - j. Start **BCTAuditLog**.
 - k. Start **BCTBusinessLog**.
 5. Verify the WebSphere Business Connection administrative console:
 - a. Using Microsoft Internet Explorer version 5.5 or above, enter the following URL to bring up the Business Connection Administrative console in a new browser session:
`http://<fully qualified hostname>/WBC/index.jsp`
 - b. When you are prompted to enter a user ID, enter:
`spadmin`

For the password, enter the password that you set in “Configuring WebSphere Security” on page 24. If you did not reset the password, use **spadmin**.

If the Welcome screen is displayed, the System Resource Administration configuration on WebSphere was successful.

Welcome to Business Connection Admin Console



6. Open the WebSphere Administrative Console and stop all application servers, including your node.
7. Reboot your system.

You have now successfully verified the installation and configuration of WebSphere Business Connection.

Before using the Registration and Provisioning component

Before you can begin using the Registration and Provisioning component to register with partners, complete the sections that apply to you.

Follow these steps if you will be using a CrossWorlds TPI Server:

1. Create the directory `<BCT_HOME>\partners\<your company name>\serv\tpiserver`, if one does not already exist.
2. Create a company profile in CrossWorlds TPI Server. (Refer to the CrossWorlds TPI Server Admin doc).
3. Export the company profile (as a partner profile using XML format) to the `<BCT_HOME>\partners\<your company name>\serv\tpiserver` directory.
Note: The name of the file must be: *your company name.xml*. This same name (*your company name*) must be used when using the WebSphere Business Connection to register your company with your partners.

Follow these steps to use Document Exchange:

When you configured Document Exchange earlier in this installation procedure, you deployed a WSDL file named `BCT_DocumentTransfer_Create.wsdl` in Web Services Gateway. Before you begin the process of registering with a trading partner and actually exchanging documents, you will be providing your WSDL to your trading partner.

1. From the command window, go to the following directory:
`<BCT_HOME>\wsdl`.
2. Open the `BCTDE_ServiceDefinition.xml` file for edit.
3. In the `lft:address` location line, replace **localhost** with the host name.
4. Save the changes.
5. Create the directory `<BCT_HOME>\partners\<your company name>\serv\de`.
Note that `<your company name>` must be the same name you will use to register your company.
6. Copy the `BCTDE_ServiceDefinition.xml` file and the `BCTDE_ServiceInterface.xml` file to the directory
`<BCT_HOME>\partners\<your_company_name>\serv\de`.

When you register with a trading partner, these XML files will be copied to the partner's computer, just as the partner's XML files will be transferred to your computer. This process is described in *Administering the System*.

Part IV - Business Connection Security

This section describes the steps you can take to install security at various points in your Business Connection system.

Important:

The WebSphere Business Connection offerings are intended to be run on a dedicated platform. Be aware that the security procedures described in this section affect <i>all</i> Web- and application-server content on the WebSphere Business Connection platform.
--

If your configuration includes a TPI server, refer to the TPI documentation for information on setting up security for the server.

Configuring SSL connections for CrossWorlds and Web Services Gateway

This part of the document describes how SSL connections will be established to provide data encryption between the CrossWorlds SOAP connector and the Web Services Gateway.

SSL configuration of the IBM HTTP Server

The Web Service Gateway machines use the IBM HTTP Server to receive HTTPS requests. To set up SSL configuration, perform these steps on both Web Service Gateway machines.

1. Create the key database and a Web-server certificate. The program ikeyman is used to create these objects.
 - a. Start ikeyman by clicking **Start > Programs > IBM HTTP Server > Start Key Management Utility**.
 - b. To create the key database:
 - 1) Click **Key Database File > New**.
 - 2) Enter the file name and location:
`<BCT_HOME>\properties\key.kdb`
 - 3) Accept the default of **CMS Key database file** for **Key database type**.
 - 4) Click **OK**.
 - 5) You are then prompted to enter the key database password. Make sure to check the **Stash the password to a file**.
 - 6) Click **OK**.
 - c. To create a certificate, you have two choices—create a self-signed certificate, or request a certification from a certification agency (for example, Verisign).
 - To create a self-signed certificate:
 - 1) Click **Create > New Self-Signed Certificate**.
 - 2) Enter the host name of your machine (without the domain) as the key label and your company as the organization.
 - 3) Click **OK** to create the certificate.
 - To request a new certificate:
 - 1) Click **Create > New Certificate Request**.

- 2) Fill out the key label and common name with the computer name.
- 3) Click **OK**.
- 4) When the certificate from Verisign is received, save it to an .arm file and import it into **ikeyman**.
- d. Click **Extract Certificate**.
- e. In the **Location** field, enter:


```
<CROSSWORLDS>\lib\security\<hostname>cert.arm
```

Note that there is no space between the *<hostname>* and **cert.arm**.
- f. Close the ikeyman program.
2. From the *<BCT_HOME>\bin* directory, set up and enable the SSL configuration by starting the following batch file with the parameter shown:


```
BCTConfigure.bat bct_ssl_http_server.xml
```
3. WebSphere needs to be modified so it recognizes the requests coming from the HTTP Server to the secured port 443. From the WebSphere console:
 - a. Select **Virtual Hosts**.
 - b. Add to the host Aliases of default_host:


```
*:443
```
 - c. Click **Apply**.
4. Restart the HTTP Server.
5. Stop all application servers.
6. Restart the WebSphere Administrative Server.
7. Next the Web Server Plugin must be regenerated. Select the node for the computer, right-click and select **Regen Webserver Plugin**.
8. Start the following application servers:
 - **BCT_SRA**
 - **Default server**
 - **WebSphere Member Services**
9. Verify that an SSL connection on port 443 can be established to the HTTP Server and WebSphere by accessing the Business Connection Admin Console. From a browser, enter:


```
https://<fully qualified hostname>/WBC/index.jsp
```

The HTTP Server certificate will be presented to the browser. Accept this and the Admin Console will be displayed (assuming the System Resource Administration application server is running).

10. Verify that an SSL connection on port 8080 can be established to the HTTP Server and WebSphere by accessing the Business Connection Admin Console. From a browser, enter:


```
https://<fully qualified hostname>:8080/hostingUI/UIServlet/BCTEnrollmentView
```

The HTTP Server certificate will be presented to the browser. Accept this and the registration page will be displayed.

HTTPS Configuration from Document Exchange SOAP Connector to HTTP Server

The following steps are used to configure HTTPS from the Document Exchange SOAP connector to the IBM HTTP Server. It is assumed that CrossWorlds and the IBM HTTP Server are installed on the same machine.

1. Open a command prompt and change the directory to:
`<BCT_HOME>\bin`
2. Start the following batch file with the parameter shown:
`BCTConfigure.bat bct_create_keystore.xml`
3. Modify the URL that contains the HTTP statement.
 For example, the Document Exchange collaboration object `BCTDESendConnector_to_BCTDESOAPConnector_BCT_DocumentTransferOutbound` contains a parameter named `BCT_SOAP_SERVER_URL`. You can modify this object using the CrossWorlds System Manager as follows:
 - a. Start the InterChange Server (if it is not already running).
 - b. Start the CrossWorlds System Manager (if it is not already running).
 - c. Expand the collaboration object.
 - d. Right-click on the object and select **Properties**.
 - e. Click the **Properties** tab and change the `BCT_SOAP_SERVER_URL` parameter from **http** to **https**.
 - f. Change **localhost** to the host name.
 - g. Click **OK**.
 - h. Restart the collaboration object.

Providing security for the Document Exchange Web service

This section describes how to apply security to the Document Exchange Web service. For more information on Web-service security, refer to the Administering the System document.

Creating a <webservice>.ear file

The first step is to generate the facade EJB using the `WSGWAAuthGen.bat` script. The script is located in the `<WSGW_HOME>\scripts\auth` folder. The script takes two arguments.

- The URL defining the location of the gateway installation
- The name of the Web service deployed in the gateway

To run the script:

1. Start the Web Services Gateway application server.
2. Open a command prompt and change the directory to:
`<BCT_HOME>\wsgw\scripts\auth`
3. Enter the `WSGWAAuthGen` command as shown below:
`WSGWAAuthGen http://<WSGW_Hostname>/wsgw BCT_DocumentTransfer_Create`

Note that the URL should include the root context and that the deployed service is case-sensitive.

Upon successful execution of this script, a `<webservice>.ear` file named `BCT_DocumentTransfer_Create.ear` is created in the `<BCT_HOME>\wsgw\bin\scripts\auth` folder and also a subfolder called `<ejb>`. This directory is temporary and may be deleted. The EAR file will be used to implement security on the Web Services Gateway for Document Exchange.

Assigning roles

To complete the steps of assigning roles and protecting methods, use the Application Assembly Tool (AAT) that comes with WebSphere. The following instructions are specific to AAT. The process discussed involves making changes to the file `wsgwauth.ear`, which can be found in the `<WSGW_HOME>\bin` directory. In order to protect the installation copy of this file, make a copy of it.

1. Launch the Application Assembly Tool from the WebSphere task menu.
2. Cancel the **Welcome to Application Assembly Tool**.
3. Select **File > Open** and use the **Browse** button to select the `<BCT_HOME>\wsgw\bin\wsgwauth.ear` file.
4. Import the `BCT_DocumentTransfer_Create.ear` file into the `wsgwauth.ear` using the following instructions:
 - a. Click on the **EJB Modules** folder in the left-hand pane.
 - b. Right-click and select **Import**.
 - c. Use the file dialog to select the generated ear file `<WSGW_HOME>\scripts\auth\<BCT_DocumentTransfer_Create.ear>`.
 - d. A dialog box is presented offering a choice of **Select Modules to Import**. Select the Document Exchange Web service (`BCT_DocumentTransfer_Create`) and click **OK**.
 - e. When the **Confirm Values** dialog box is presented, click **OK**.
5. Expand the EJB Modules folder in the left-hand pane to see the name of the Web service (`BCT_DocumentTransfer_Create`) just imported. The name is displayed in the **File Name** field (as `BCT_DocumentTransfer_Create.jar`) and **Display** field (as `BCT_DocumentTransfer_Create`).
6. Now that you have imported the EAR file, you can begin to define roles and assign roles to methods.
 - a. Expand the Document Exchange EJB module and highlight the **Security Roles** option.
 - b. Right-click and select **New** to define a security role.
 - c. Enter **AuthenticatedUsers** for the role name. Click **OK** to save.
 - d. To assign defined roles to Web-service methods, select **Method Permissions** in the left-hand pane under the Document Exchange EJB. Right-click and select **New**.
 - e. Enter **ProtectedMethods** as the method permission name.
 - f. In the **Methods** pane, click **Add** for methods.
 - g. Expand the tree down to the Remote branch and select the method `m_BCT_DocumentTransfer()`.
 - h. Click **OK** to save the changes.
 - i. In the **Roles** pane, click **Add**.
 - j. Select a previously defined role from the list (for example, **AuthenticatedUsers**). Click **OK** to save.
 - k. Click **OK**.
7. The next stage is to ensure the Authorization EJB is able to reference the new EJB just imported. To do this:
 - a. Expand **EJB Module > BCT_DocumentTransfer_Create**, and then expand **Session Beans**. Select the `BCT_DocumentTransfer_Create` service. Next, select the **Bindings** tab on the right side pane, and copy the JNDI name into the clipboard. You will use this name in step d below.

- b. Expand the **WSGW Authorization** EJB module, and then expand **Session Beans > Authorization** and click on **EJB References**. Right-click and select **New**.
 - c. Enter **WSGWReference** as the name for the reference and use the **Link** pulldown field to select the newly imported Document Exchange service. All the other fields in the pane will be populated automatically.
 - d. Click on the **Bindings** tab and enter the JNDI name that was copied in step a. This should be in the form of **websphere/WSGW/Security/BCT_DocumentTransfer_Create**. Click **OK** to save.
 - e. Select **File > Save** to save a modified copy of the wsgwauth.ear file.
 - f. Close the Application Assembly Tool.
8. Deploy the wsgwauth.ear file by highlighting **Enterprise Applications** on the WebSphere Administrative Console. Right-click and select **Install Enterprise Application**.
9. Select **Browse** and find the wsgwauth.ear file in the <WSGW_HOME>\bin folder. Click **Next** to continue.
 Next you will see the following message:
 The application contains method permissions. Do you wish to deny access to unprotected methods?
 Select **No**.
10. On the **Mapping Users to Roles** page, highlight **AuthenticatedUsers** and click **Select**.
 Check only the **Select users/groups** and then enter * in the **Searchfield** and click **Search**. A list of users and groups is displayed.
 Select the **cn=CSR,dc=SecurityRole,dc=allegro** group from the **Available Users/Groups**, and click **Add** to add the group to the **Select Users/Groups**. Finally, click **OK**.
11. Click **Next** until you reach the Binding Enterprise Beans to JNDI Names screen. Click **Next** and the following message appears:
 Duplicate EJB JNDI Name message will appear.
 Click **No** to proceed.
12. Click **Next** until you reach the Selecting Application Servers screen. Highlight both modules and then click **Select Server**. Select the WSGW application server, and click **OK**.
13. Click **Next**, and then click **Finish**.
 At the completion of the installation wizard, you will be requested to generate application code. Select **Yes** when this option appears, and then click **OK** to deploy the code. Do not change any of the default values.
14. Restart the **WSGW** application server from the WebSphere Administrative Console.

Part V - After installation

This section describes tasks that you perform after installation. It describes two procedures you should run after installation as well as how to remove a Business Connection installation and how to start and stop a Business Connection system. It also points you to information about using the system.

Removing files

As part of installation, various passwords are set or generated, and some of these passwords are visible in the files used during installation. This procedure removes all the files that might contain passwords.

When you are certain you have successfully completed installation and configuration, follow these steps to remove files that contain passwords.

1. From a command window, change the directory to `<BCT_HOME>\bin`.
2. Enter the following:
`delPasswordFiles.bat`
3. From the `<BCT_HOME>\logs` directory, manually remove the file `BCT_RP_REPLACE_WBCUI_DATA_FIRST.xml.log`.

Running the BCTVPDUpdate program

If you receive an update to Business Connection, you will receive installation instructions along with the update. When you apply an update (as opposed to installing another version), you enter the following after installation:

`BCTVPDUpdate.bat`

Viewing version information

To view the current installation information, you can run the following command at any time:

`BCTVPDVersion.bat`

Note that the `BCTVPDVersion` program applies only to Business Connection and Business Connection Enterprise Edition. To determine your current installation information for Business Connection Express Edition, open a browser and enter the following:

`http://<fully qualified hostname>/wsgw/version.txt`

Starting up and shutting down

To start and stop the applications or their individual components, you can use the WebSphere Administrator's Console. Alternatively, entire Application Servers (not components) may be controlled via the WebSphere Business Connection System Management console.

Note that if you have security enabled, stop all servers before stopping the WebSphere Application Server. Otherwise, problems will occur the next time you try to start it.

Removing WebSphere Business Connection

To uninstall any version of Business Connection, select **Start> Settings > Control Panel > Add/Remove Programs**.

Some files might not be removed. If this is the case, manually remove files related to Business Connection.

Where to next?

After you install and configure your Business Connection edition, you can register with trading partners, set up document exchange, and run logging and tracing operations. These tasks are described in the Administering the System document.

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