

*IBM WebSphere Business Integration Connect  
Enterprise Edition and Advanced Edition*



# Installing Business Integration Connect

*Version 4.2.0*

**Note!**

Before using this information and the product it supports, be sure to read the general information under “Notices and Trademarks” on page 41.

First Edition (September 2003)

This edition applies to Version 4, Release 2, Modification 0, of IBM® WebSphere® Business Integration Connect Advanced Edition (5724-E75) and Enterprise Edition (5724-E87), and to all subsequent releases and modifications until otherwise indicated in new editions.

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# Table of Contents

About this book .....	5
Audience .....	5
Hub Admin .....	5
Operator Admin .....	6
Participant Admin .....	6
Typographic conventions and terms .....	6
Typographic conventions .....	6
Terms .....	6
Getting help .....	7
Online Help .....	7
Customer Service .....	7
Software Support: .....	7
Passport Advantage: .....	7
Company Web site .....	7
 Chapter 1. Before you begin .....	 9
Platform, hardware, and software requirements .....	9
Environment planning .....	11
Availability .....	11
Scalability .....	11
Data storage .....	12
Security .....	12
Topologies .....	13
Consolidated topology .....	13
Split topology .....	13
Distributed topology .....	14
Best practice design .....	15
 Chapter 2. Installing Business Integration Connect .....	 17
Verifying and configuring installed prerequisites .....	17
Configuring Linux .....	17
Configuring WebSphere MQ .....	18
Installing and configuring DB2 .....	19
Pre-installation checklist tables .....	20

Installing Business Integration Connect .....	23
Setting up the database tables .....	23
Installing the components using the install wizard .....	27
Installing the components using the command line .....	34
Performing a silent install .....	34
Generating an options file .....	35
Starting Business Integration Connect .....	35
Testing your installation .....	37
Troubleshooting .....	37
Setting up the FTP server .....	38
Uninstalling Business Integration Connect .....	38
 Chapter 3. Notices and Trademarks .....	 41
Notices .....	41
Programming interface information .....	43
Trademarks and service marks .....	43

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## Chapter 1. About this book

This book covers IBM® WebSphere® Business Integration Connect Advanced Edition version 4.2.0 and IBM WebSphere Business Integration Connect Enterprise Edition version 4.2.0, and includes the following information:

- A description of the prerequisites that you must have installed before you install Business Integration Connect.
- Information to help you plan for the install.
- Descriptions of several deployment configurations that you can use.
- Instructions to run Business Integration Connect's installation wizards.
- Instructions on how to start Business Integration Connect and log in.

After you have installed Business Integration Connect, consult the Getting Started guide for the steps that you should take to set up the community.

The last task that this book covers is uninstalling Business Integration Connect.

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## Audience

This guide is for the IT professionals responsible for installing Business Integration Connect, and assumes that you are familiar with the following:

- Linux
- DB2
- B2B concepts
- Business processes
- Security
- Environment planning

In the Business Integration Connect environment, there are four types of administrative users: Hub Admin and Operator Admin (the Community Operator's administrative users), Manager Admin (the Community Manager's administrative user), and Participant Admin (the Participant's administrative user). These users may participate in the installation and configuration of the product in the following ways:

### Hub Admin

- Perform environment planning to optimize scalability and load balancing.
- Ensure that prerequisites are installed.
- Install Business Integration Connect.
- Configure system parameters.

## Operator Admin

- Configure connections available to the hub-community.
- Manage access to the console by the Community Operator's employees.

## Participant Admin

- Configure system parameters.

For more information on these users, see the IBM WebSphere Business Integration Connect User Guide.

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## Typographic conventions and terms

### Typographic conventions

This document uses the following typographic conventions:

<b>bold</b>	Indicates a selection on a screen.
<a href="#">blue text</a>	Blue text, which is only visible when you view the manual online, indicates a cross-reference hyperlink. Click any blue text to jump to the object of the reference.
<i>italics</i>	Indicates a variable.

### Terms

**Business Process:** A predefined set of business transactions that represent the steps required to achieve a business objective.

**Community Console:** The Community Console is a Web based tool used to configure IBM WebSphere Business Integration Connect and to manage the flow of your company's business documents to and from your Community Manager or Participants.

**Digital Certificate:** A digital certificate is the electronic version of an ID card. It establishes your identity when you perform B2B transactions over the Internet. Digital certificates are obtained from a Certificate Authority.

**Document:** A collection of information adhering to an organizational convention. In this context, there are multiple documents in a process.

**Hub Community:** The environment comprised of the Community Manager, Community Operator, and Community Participants.

**Community Manager:** The company that purchased and distributed WebSphere Business Integration Connect to members in their hub-community. The Community Manager has one administrative user, the Manager Admin, who is responsible for the health and maintenance of the Community Manager's portion of the community.

**Community Operator:** The individual responsible for the configuration and overall health and maintenance of the system, hub-wide.

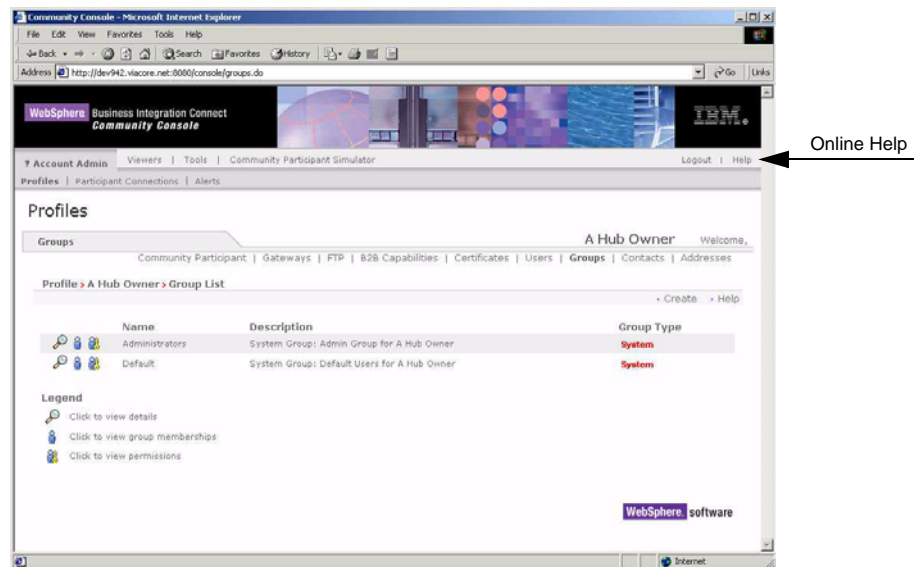
Community Participant: The Participant sends business transactions to and receives business transactions from the Community Manager. The Participant can access Community Console features that support their role in the community.

---

## Getting help

### Online Help

Online Help is available on the right side of each Community Console screen. Click to display Online Help.



**The Community Console**

### Customer Service

Software Support:

[www.ibm.com/software/support](http://www.ibm.com/software/support)

Passport Advantage®:

[www-3.ibm.com/software/howtobuy/passportadvantage/](http://www-3.ibm.com/software/howtobuy/passportadvantage/)

### Company Web site

[www.ibm.com/websphere/wbiconnect/](http://www.ibm.com/websphere/wbiconnect/)



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## Chapter 2. Before you begin

This chapter describes the platform, hardware, and software required to install and run the Advanced and Enterprise Editions of Business Integration Connect.

The Environment planning section identifies items that you should consider before you install, to ensure that you create an optimal installation.

Finally, this chapter includes information on several deployment configurations that you can use to install Business Integration Connect.

### Platform, hardware, and software requirements

The following tables identify products that must be installed before you install Business Integration Connect.

#### Server Requirements

Item	Version	Notes
Red Hat Enterprise Linux Advanced Server (Intel®)	2.1 with update 2 or later	Hardware recommendations: <ul style="list-style-type: none"><li>• 2GHz Intel® Xeon™ processor.</li><li>• Minimum 2GB RAM.</li><li>• Minimum 300MB available disk space for application.</li><li>• Additional disk space for document storage, 30 GB recommended.</li><li>• Additional servers for added capacity and redundancy.</li><li>• Multi-server installations require network attached shared storage.</li></ul>

The following table lists software that Business Integration Connect uses or may use. These applications can be anywhere on your network although it is recommended that DB2 and WebSphere MQ reside on dedicated servers.

*Other software used by Business Integration Connect*

Item	Version	Notes
IBM DB2® Universal Database Enterprise Server Edition	8.1 with fix pack 2 or later	Required to persist Business Integration Connect data. DB2 should be installed on a dedicated server.
WebSphere MQ with: <ul style="list-style-type: none"> <li>Java™ Message Service (JMS)</li> <li>MA0C MQSeries - Publish/Subscribe SupportPac</li> </ul>	5.3 with CSD03	Required to handle messaging between the components of Business Integration Connect. WebSphere MQ should be installed on a dedicated server.  To obtain CSD03, go to <a href="http://www-3.ibm.com/software/integration/mqfamily/support/summary/lin.html">www-3.ibm.com/software/integration/mqfamily/support/summary/lin.html</a> and click U486878(CSD04)
Simple Mail Transport Protocol (SMTP) based e-mail relay server		Required for e-mail alerts, SMTP message delivery, and outbound transport.
ProFTPD or other FTP server		Only required if you plan to use FTP. You can obtain ProFTPD from <a href="http://www.proftpd.org">www.proftpd.org</a> . For additional information on ProFTPD, see <a href="http://www.linuxquestions.org/questions/answers.php?action=viewarticle&amp;artid=17">www.linuxquestions.org/questions/answers.php?action=viewarticle&amp;artid=17</a>  Business Integration Connect includes Perl scripts to configure ProFTPD. If you use a different FTP server, you must modify the scripts accordingly, or configure the server manually.
Shared network storage such as Network Attached Storage (NAS)		Optional, for a multi-server environment.

The following table lists the software required by a client to access the Community Console.

*Requirements to use the Community Console*

Item	Version	Notes
One of the following browsers:  Netscape Navigator  Microsoft® Internet Explorer	6.0 or later  5.5 or later	Required to use the Community Console.
Screen resolution setting		1024 x 768 recommended

## Environment planning

This section lists some of the things you should consider before installing Business Integration Connect. The planning enables you to decide on the exact deployment topology that fits your requirements.

### Availability

System downtime can seriously affect your business productivity and profitability. When you create a high availability system, you are ensuring your hub-community that the system is always up and running and ready to receive documents. A typical high availability environment ensures that the system is working 99.9% with some systems achieving 99.999% of the time. Things that can decrease the level of availability include system failure, system overload, network congestion, and network attacks. To maximize availability, you need to provide system redundancy. You can accomplish this by having at least two implementations of each logical function (Community Console, Receiver, and Document Manager) on separate servers in your architecture. Therefore, if you place all three components on one server, you need a second server to provide redundancy. If you separate each component onto its own server, you need six servers in total to provide redundancy. Additionally, you should consider creating another set of servers in your disaster recovery location so that you can run the system from that location.

To create a highly available Business Integration Connect implementation, its supporting infrastructure (such as network, internet connection, even power coming into your facility) must also be highly available. The high availability requirement also applies to MQ and DB2. If either of these supporting software fails, your production environment will fail.

### Scalability

Business Integration Connect scales horizontally. That is, you increase its processing ability by adding instances of its components. The actual number of servers, instances of a particular component, or network capability that you will need depends on the following factors:

- **Size of community** - A large number of partners connecting to a hub means that more users will be accessing the hub. You may need to increase the number of Community Console instances and increase the capabilities of your database to support this.
- **Document volume** - A larger number of documents sent by Community Participants and Community Manager means that you may need to increase the number of Document Manager instances and increase the capabilities of WebSphere MQ.
- **Complex flows** - Process flows that are complex require more Document Manager instances to handle them.
- **Large files** - Large files require more network bandwidth and impact the shared file service compared to small files.
- **Document flow** - If the number of documents being received spikes as will occur when a Community Participant uses batch processing to send messages, you will need sufficient Receiver instances to handle the maximum number of messages in that spike. Note that Receivers are generally four to five times faster than Document Managers.

- **Latency** - Latency is a measurement of how much time it takes for a document to get from one point to another. Things that can increase latency include the means of transmission, the size of the document, and Document Manager processing. You can reduce latency by scaling up the number of Document Managers. However, you can also decide to accept increased latency for things like batch processes that occur at the end of the business day. For example, you know that you will receive batch processes between 3:00 p.m. and 5:00 p.m. You can either decide to handle all of that data quickly by implementing more Document Managers or you can decide that there will be an increase in latency during that time while your Document Managers work through the queued messages.

As these factors change, you can scale Business Integration Connect by adding multiple instances of its components. The Receiver, Community Console, and Document Manager instances can live anywhere independently. However, there are some things to consider when creating redundant Business Integration Connect components:

- When you create multiple Document Managers, all instances must communicate with the same WebSphere MQ queue manager and point to the same database instance.
- When you create multiple Community Consoles and Receivers, because these components accept connections from the internet, the network must have a load balancer.

Note that as you scale Business Integration Connect, you must also scale the supporting infrastructure such as WebSphere MQ and DB2.

Once you have configured your servers, it is important to monitor your system performance to determine when and if additional servers are required to meet demands.

## Data storage

Data storage is a key component in your topology as it is a Business Integration Connect prerequisite. How you address that shared storage requirement depends on your requirements:

- How long are you required to store data? Are there specific data retention requirements for your industry?
- Do you need highly available data storage?
- Do you need mission critical redundancy?

If your requirements are low in these areas, you can consider implementing your shared storage on the same server as one or more of the Business Integration Connect components. If not, it should be on a separate server from Business Integration Connect. When high availability is a requirement, consider a redundant NAS product because it can scale independently from the servers. Note that DB2 and WebSphere MQ do not have to be on NAS.

## Security

Business Integration Connect will work within a standard secure environment. However, you should consider the following things:

- Even though Business Integration Connect does not explicitly support proxy servers, it is possible to use an independent reverse proxy server on inbound internet connections. Business Integration Connect can use proxy servers to the Internet as long as those servers do not interfere with the SSL connection. This is because Business Integration Connect uses the initial SSL connection to obtain information critical for making a connection.
- Business Integration Connect is adversely impacted by anti-virus or firewall software that checks documents as they enter your system. To optimize performance, consider disabling this type of checking on Business Integration Connect servers.

The Community Console requires that sticky sessions be enabled if you are using a load balancer. Note that enabling sticky sessions in a small community that sends many documents may impact scaling by adding Receiver instances.

## Topologies

This section describes some of the topologies (deployment configurations) to consider before you install Business Integration Connect and its prerequisite software. The topology that you choose should be based the factors described in Environment planning. The topologies described in this section are consolidated topology, split topology, and distributed topology.

### Consolidated topology

This topology is the simplest one. It consists of a single server running all three Business Integration Connect components (Receiver, Community Console, and Document Manager). You might also put WebSphere MQ and DB2 on the server as well, although these products should be on separate dedicated servers.

### Split topology

The split topology consists of a front-end server containing the Receiver and Community Console components and a back-end server containing the Document Manager component. This topology is an entry level topology for a small production environment and maximizes your software investment. Note that WebSphere MQ and DB2 can be anywhere, including on these servers. A better implementation is to have them on dedicated servers.

In a split topology (front-end servers and back-end servers), all instances of three components need to communicate with the same shared file system. If high volume or high availability is not a concern, hosting the storage on the back-end server is an inexpensive solution. Back-end is preferable to front-end due to performance and security concerns. When this solution is used, the front-end server can use an NFS connection to share files with the back-end.

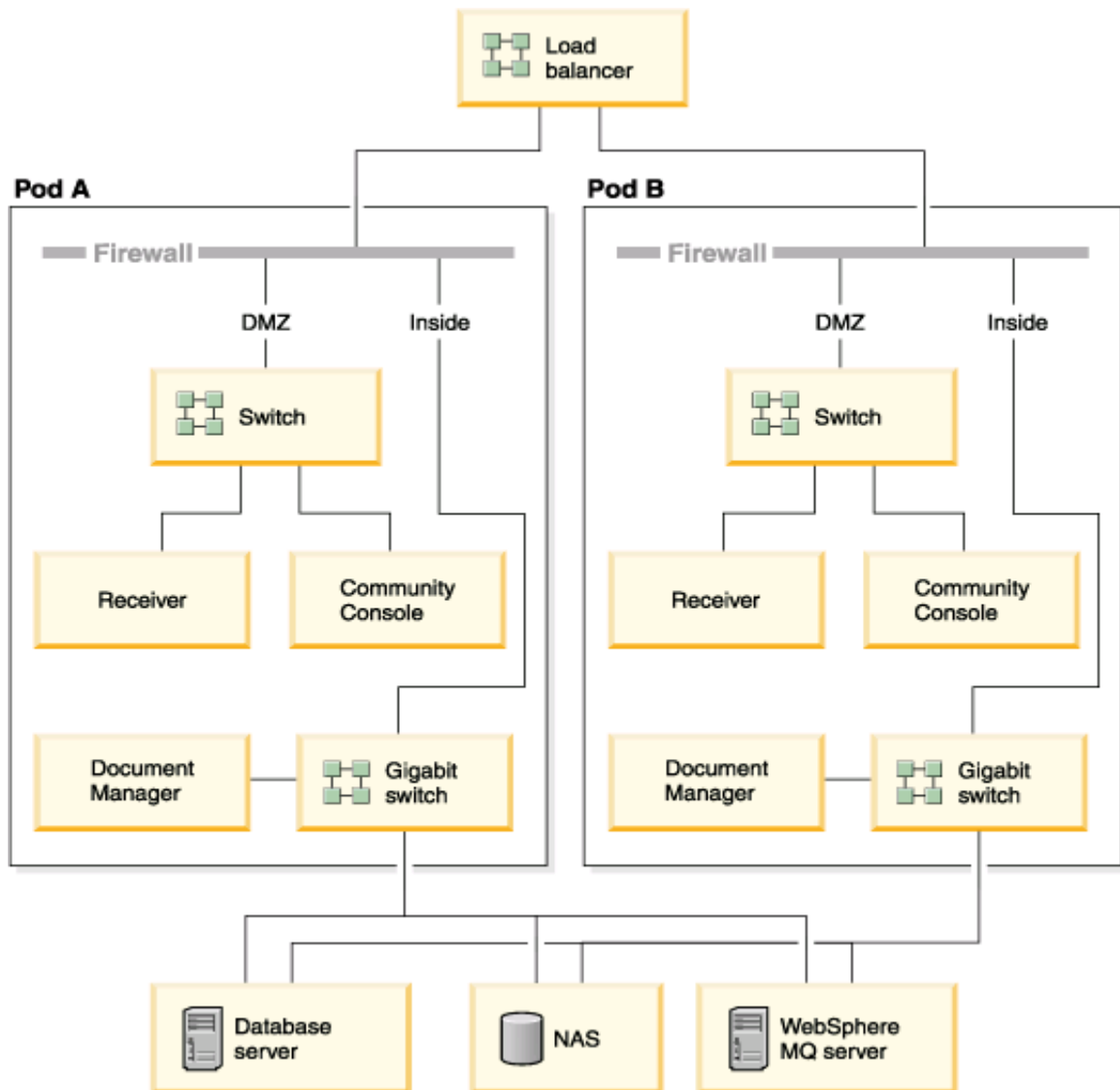
## Distributed topology

If you have a large installation and want a highly scaled and highly redundant environment, you will probably create a distributed topology. This topology consists of one or more dedicated servers for each Business Integration Connect component (Receiver, Community Console, and Document Manager). For example, you can have an environment that requires two Receiver servers for redundancy, four Community Console servers to support a large number of Community Console users, and six Document Managers for document processing. You can scale this topology by adding additional servers for the component that needs to handle a higher level of document processing (Document Manager), users (Community Consoles), or connections (Receivers) as needed.

In a distributed topology, an external NAS device is a good solution to shared storage. That will give the environment a high performance, redundant storage device that is independent of any of the other servers. All servers can make an NFS connection to the external device. DB2 and WebSphere MQ should be on dedicated servers and their data storage does not have to be on NAS devices.

## Best practice design

Once you have decided on a topology, you should consider how to implement the topology to provide redundancy and disaster recovery capabilities. The Pod-based design is a recommended design. In this design, you have a primary production pod. This pod contains all of the Business Integration Connect components required to handle a production load. There is a secondary production pod, which can also handle the production load, and a load balancer to switch between the two. The secondary production pod provides redundancy. The following diagram shows how you could implement the two pods:



Another pod capable of handling the production load could be located at your disaster recovery site. The front end components of all three pods should be identical. However, the back-end components for the disaster recovery pod must be separate from the production components. Therefore, a separate database server, WebSphere MQ server, and shared file system are required. Note that you would need to implement some form of data synchronization between the production and disaster recovery back-end components. Note that Business Integration Connect only supports a single active production environment at any given time. You can also add a test pod, which can be a minimum implementation such as the consolidated topology.

---

## Chapter 3. Installing Business Integration Connect

The following procedures describe how to install Business Integration Connect. There are three major steps:

- Verifying and configuring the prerequisites.
- Setting up the database tables.
- Installing the components.

---

### Verifying and configuring installed prerequisites

You must configure some prerequisites before you install Business Integration Connect.

- Linux and WebSphere MQ are configured after you install them.
- DB2 is configured as you install it.

There is a pre-installation checklist at the end of this section. This table lists the tasks that must be performed before you install Business Integration Connect. Use this checklist to make sure that the server is ready to install Business Integration Connect.

- **Information required by the Database Loader Installation wizard.** This table lists the values that you must enter when you run the Database Loader Installation wizard. When you are planning your install, you can record required installation information in this table. For example, the database instance name and tablespace information.
- **Information required by the Business Integration Connect Installation wizard.** This table lists the values that you must enter when you run the Business Integration Connect Installation wizard. When you are planning your install, you can record required installation information in this table such as the host name of the WebSphere MQ server and port numbers for the Community Console, Receiver, and Document Manager.

### Configuring Linux

Business Integration Connect requires a set of operating system users to connect with the database. The following procedure uses default names but you can substitute your own user and group names. Note that if you use your own group and user names, they cannot exceed eight characters.

If you are installing Business Integration Connect on multiple machines, the group's GID and the user's UID on this machine must match the group GIDs and user UIDs on all of the other machines.

To configure Linux:

1. Create the group to contain the Business Integration Connect users.  
`groupadd bcgroup`

Business Integration uses a user in this group to manage Business Integration Connect components.

2. Add the following user to bcggroup. Business Integration Connect uses this user to manage Business Integration Connect components. The installation wizard installs and runs software as this user. This is a normal user, not a super user:

```
useradd bcguser -g bcggroup  
passwd bcguser
```

3. Add the appropriate user for each component you are going to install on this server.

Community Console:

```
useradd bcgcon -g bcggroup  
passwd bcgcon
```

Document Manager:

```
useradd bcgdoc -g bcggroup  
passwd bcgdoc
```

Receiver:

```
useradd bcgreceiv -g bcggroup  
passwd bcgreceiv
```

4. Record the user names and passwords in the tables in [“Pre-installation checklist tables” on page 20](#).

## Configuring WebSphere MQ

The following procedure describes how you must configure WebSphere MQ after it is installed. See [“Platform, hardware, and software requirements” on page 9](#) for a list of support packs and updates that must be applied. For information on specific commands used in this procedure, see the WebSphere MQ documentation.

To configure WebSphere MQ:

1. Use the following command to change the user to mqm:

```
su - mqm
```

2. Create the queue manager:

```
crtmqm -q <hostname>.queue.manager
```

3. Update the channel parameters in the queue manager configuration file `/var/mqm/qmgrs/<queue_manager>/qm.ini`. Add the following lines to the bottom of the file:

Channels:

```
MaxChannels=1000
```

```
MaxActiveChannels=1000
```

Enter an empty line below `MaxActiveChannels=1000` and save the changes to the configuration file.

4. If the computer has more than one CPU, enter the following command:

```
setmqcap <number of CPUs>
```

5. Start the queue manager:

```
strmqm <hostname>.queue.manager
```

6. Start the listener:

```
runmqclsr -t tcp -p <port number> -m <hostname>.queue.manager &
```

7. Wait about 10 seconds and press Enter to return the command prompt.

8. Start the JMS Broker (the publish-subscribe broker):

```
strmqbrk -m <hostname>.queue.manager
```

9. Start the MQ command services:

```
strmqcsv <hostname>.queue.manager
```

10. Use the Tools/MQSeries/create\_wbqc\_queues.mqsc file to define the queues and channels for the queue manager:

```
runmqsc <hostname>.queue.manager <  
<install image>/Tools/MQSeries/create_wbqc_queues.mqsc
```

Where *<install image>* is the mount location of Business Integration Connect CD or the location of the unarchived Business Integration Connect installation files.

11. Use the /opt/mqm/java/bin/MQJMS\_PSQ.mqsc file to configure the JMS publish and subscribe queues:

```
runmqsc <hostname>.queue.manager <  
/opt/mqm/java/bin/MQJMS_PSQ.mqsc
```

12. Record the MQ host name, queue manager name, and listener port in “[Pre-installation checklist tables](#)” on page 20.

## Installing and configuring DB2

The Business Integration Connect database should reside on a dedicated server. If you are creating the server, use the following procedure to install and set up DB2:

1. Install DB2 by following the installation instructions for DB2 and using the DB2 Setup wizard. In the wizard, do the following:
  - When you come to the panel in which you select the type of installation, select a **Custom** install. In the following panel, add **Application Development Toolkit** to the default selections.
  - For the remaining panels, use the default values or your own values. Note the instance name, instance owner userid, and password, and record them in the **Information required by the Database Loader Installation wizard** table later in this section. For information on these options, see the installation guide for DB2.
2. When you have completed the DB2 installation, install the FixPack2 using the instructions in the FixPackReadme.txt.

3. If DB2 is not running, start it by running the following command:

`db2start`

If you are using an existing installation, do the following:

1. Verify that the DB2 Application Development Toolkit is installed. For information on how to install the toolkit, see the DB2 documentation.
2. Check for header files in `/opt/IBM/db2/V8.1/include` directory.
3. Verify that the correct g++ compiler and libs are installed. Refer to the DB2 Application Development Toolkit documentation for the required package names, versions, and so on.

Record the names and passwords in the tables in [“Pre-installation checklist tables” on page 20](#).

## Pre-installation checklist tables

The following table lists the tasks that must be performed before you install Business Integration Connect.

Task	✓
1. Group bcggroup and user bcguser exist on the Linux server.	
2. DB2 is installed and configured on a server.	
3. WebSphere MQ is installed and configured on a server.	
4. An SMTP server exists.	

When you have completed all of the above tasks, you are ready to install Business Integration Connect.

The following table identifies information that you must have before you start the DB Loader wizard. Consult the table as you run the DB Loader wizard.

*Information required before starting the Database Loader wizard*

Required Information	Value
Business Integration Connect user name	(bcguser is the default)
Business Integration Connect user password	
Business Integration Connect group name	(bcggroup is the default)
Community Console user name	(bcgcon is the default)
Community Console user password	
Document Manager user name	(bcgdoc is the default)
Document Manager user password	
Receiver user name	(bcgrecev is the default)
Receiver user password	

The following table identifies information that you must have before you start the Business Integration Connect installation wizard. Consult the table as you run the installation wizard.

*Information required before starting the Business Integration Connect installation wizard*

Required Information	Value
WebSphere MQ host name	
WebSphere MQ Queue Manager	
WebSphere MQ port for Listener	
Mount Point for Shared Location	
Database host name	
Database port	
Database owner	
Owner's password	
Database name	
Instance name	
Business Integration Connect user name	(bcguser is the default)
Business Integration Connect user password	
Business Integration Connect group name	(bcggroup is the default)
Community Console user name	(bcgcon is the default)
Community Console user password	
Receiver user name	(bcgrecev is the default)
Receiver user password	
Document Manager user name	(bcgdoc is the default)

*Information required before starting the Business Integration Connect installation wizard*

Required Information	Value
Document Manager user password	
SMTP server	

---

## Installing Business Integration Connect

When you have met all of the prerequisites noted in previous sections, you are ready to run the Database Loader and WebSphere Business Integration Connect installation wizards.

### Setting up the database tables

Business Integration Connect includes an installation wizard to set up the database tables. This wizard, Database Loader, gathers information to create and populate the tables for you. Alternatively, it can save the SQL files it uses to create the tables. You can then use the SQL files to create and populate the tables on your own.

Before you begin, verify that DB2 is installed, configured correctly, and running. For information, see [“Installing and configuring DB2” on page 19](#).

The following procedure describes how to configure the database using the DB Loader GUI. You can also install the DB Loader without using the GUI. See [“Installing the components using the command line” on page 34](#) for information.

To set up the database tables:

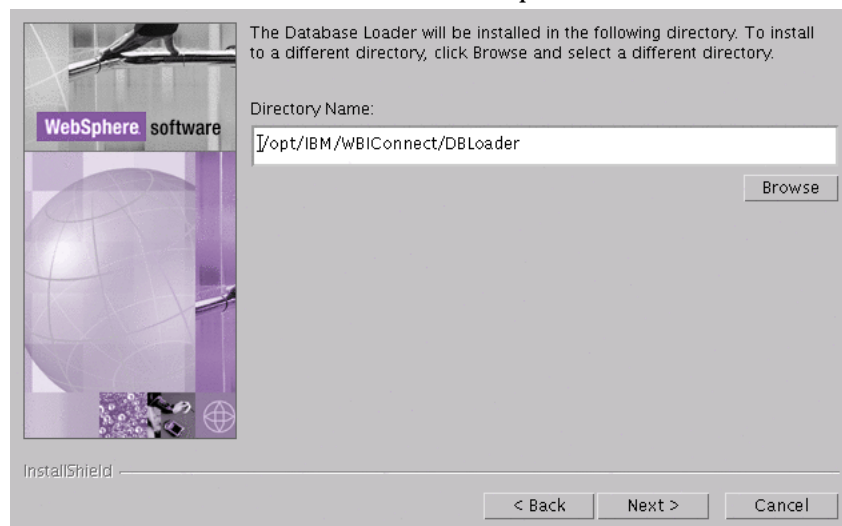
1. Log in as root.
2. In the DBLoader directory, run the setupLinux executable:

```
cd DBLoader
```

```
./setupLinux
```

The Database Loader wizard starts and displays the Welcome panel. Click **Next**.

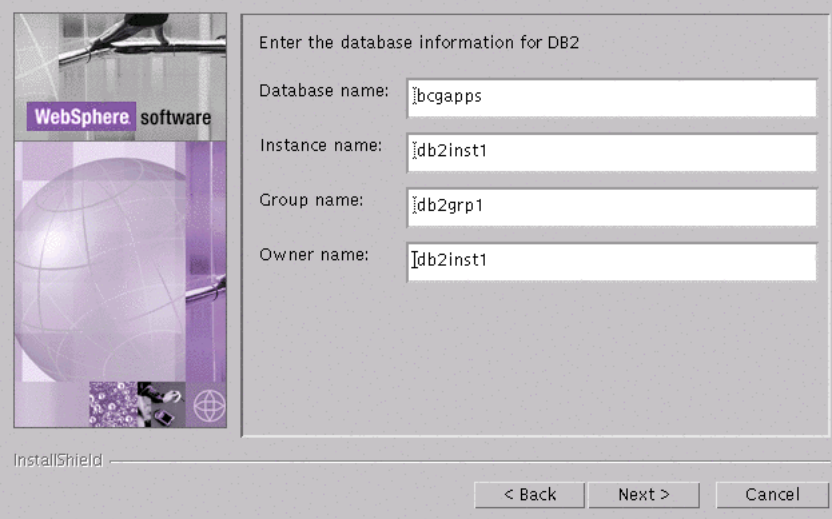
3. In the Software License Agreement panel, read the Software License Agreement. If you agree to the terms in the agreement, select **I accept the terms of the license agreement**. Click **Next**.
4. In the Directory Name panel, type the path and directory name of the directory that the Database Loader will use when it sets up the database. Click **Next**.



5. In the Database Type Selection panel, the database is preselected. Click **Next**.

6. In the Database Information panel, type the following DB2 database information:

- Database name
- Instance name
- Group name
- Owner name



Enter the database information for DB2

Database name: ibcgapps

Instance name: db2inst1

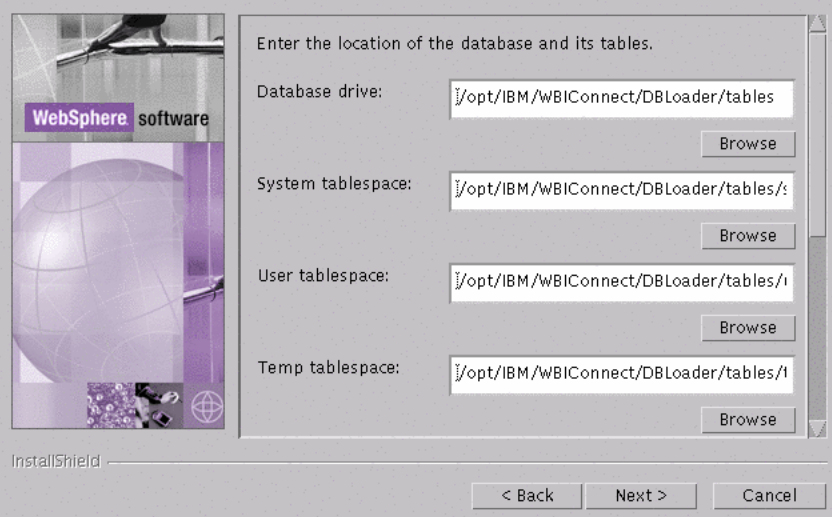
Group name: db2grp1

Owner name: db2inst1

< Back   Next >   Cancel

Click **Next**.

7. In the Database Location panel, type the location of the database and each one of its tablespaces on the DB2 server. The text boxes must contain the full path such as /opt/IBM/WBICConnect/DBLoader/tables.



Enter the location of the database and its tables.

Database drive: /opt/IBM/WBICConnect/DBLoader/tables   Browse

System tablespace: /opt/IBM/WBICConnect/DBLoader/tables/;   Browse

User tablespace: /opt/IBM/WBICConnect/DBLoader/tables/i   Browse

Temp tablespace: /opt/IBM/WBICConnect/DBLoader/tables/i   Browse

< Back   Next >   Cancel

Click **Next**.

8. In the Component Configuration panel, type the login information for the Business Integration Connect components and the location of the common shared files.



WebSphere software

Enter the name and password of the Community Console user.

User name:

Password:

Enter the name and password of the Document Manager user.

User name:

Password:

Enter the name and password of the Receiver user.

User name:

Password:

InstallShield

< Back   Next >   Cancel

In the User name and Password text box for the Community Console, Document Manager and Receiver, type the name and password of the user for that component. These users were created when the server was configured.

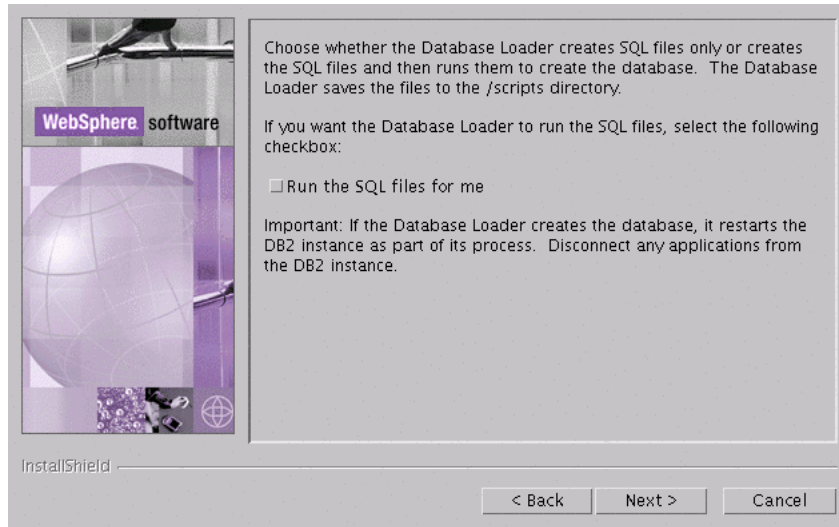
In the User group text box, type the name of the group that contains the Business Integration Connect users.

In the Mount point for shared information text box, type the location of the common shared files used by the main components of Business Integration Connect. Record the Mount point in the table in the beginning of the Business Integration Connect installation procedure. See [“Installing the components using the install wizard” on page 27](#).

Click **Next**.

9. The system displays the Summary panel. Review the information on the Summary panel, which identifies where the Database Loader will be installed. If this location is incorrect, click **Back** to return to previous panels. When the information on the summary panel is correct, click **Next**.

10. The wizard displays a panel where you can select whether the Database Loader just creates the SQL files or creates the SQL files and then runs them for you. The default behavior is to just create the SQL files.



If the Database Loader runs the SQL files, it does the following:

- Creates the tablespaces
- Creates the schema
- Creates the tables, views, sequences, procedures, and functions, and populates them with metadata
- Assigns permissions to the tables
- Compiles the stored procedures

Because the Database Loader restarts the DB2 instance as part of its routine, disconnect any applications that are using the DB2 instance where you are setting up the Business Integration Connect database.

If you want the Database Loader to run the files for you, check the **Run the SQL files for me** check box.

Click **Next**.

11. When the Database Loader enables the Finish button, click it.
12. Confirm that the database was created successfully by doing the following SQL query in a command line:
- a. Switch to the database owner (db2inst1 if the default was used):  
`su - db2inst1`
  - b. Enter the DB2 interactive mode:  
`db2`
  - c. Connect to the database as one of the Business Integration Connect component users:  
`connect to bcgapps user bcgcon using <password>`

Where *<password>* is the password for the bcgcon user;.

- d. Count the number of stored procedures:

```
Select count(*) from syscat.procedures where procschema='DB2INST1'
```

The command should return 358. If it does not, see [“Troubleshooting” on page 37](#).

- e. Repeat c and d for the bcgdoc user and the bcgrecl user. They should also return 358 stored procedures.
- f. To exit the DB2 interactive mode, type the following:  
  
quit

When you have set up the Business Integration Connect database, you are ready to install the Business Integration Connect components.

## Installing the components using the install wizard

Business Integration Connect has three main components: Community Console, Receiver, and Document Manager. There is also common content that all three components use. You can install the components and common content on a single server, each component on a separate server, or any combination thereof. The only restriction is that you must install one instance of each component on at least one server. See [“Environment planning” on page 11](#) and [“Topologies” on page 13](#) for information on how to plan the placement of the various components on different servers.

Before you begin, make sure that the machine where you are installing one or more Business Integration Connect components has the prerequisite software installed and configured properly. Consult the Requirements for all Business Integration Connect servers table in [“Platform, hardware, and software requirements” on page 9](#) for software prerequisites and [“Verifying and configuring installed prerequisites” on page 17](#) for information on how to configure that software. You must also have the Business Integration Connect database set up. For information on this, see [“Setting up the database tables” on page 23](#). Finally, DB2 and WebSphere MQ must be running.

The following procedure describes how to install the components using the InstallShield wizard GUI. You can also install the components without using the GUI. See [“Installing the components using the command line” on page 34](#) for information.

To install Business Integration Connect:

1. Log in as root.
2. In the hub directory, run the setupLinux executable.

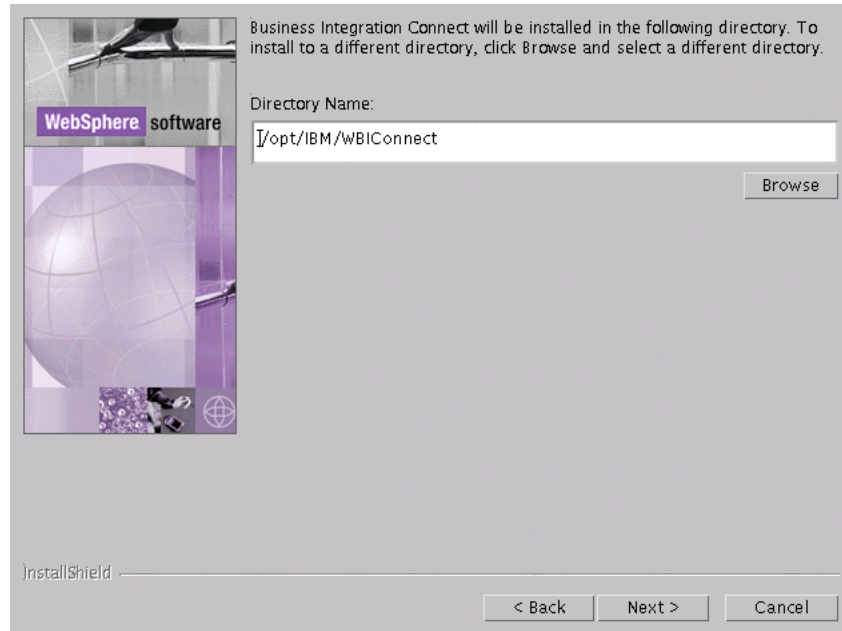
```
cd hub
```

```
./setupLinux
```

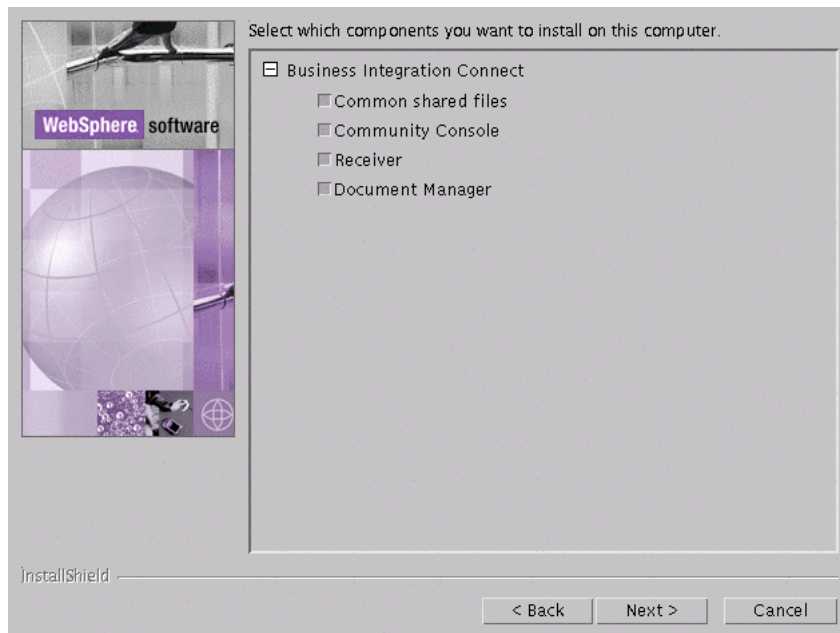
The wizard starts and displays the Welcome panel. Click **Next**.

3. In the Software License Agreement panel, read the license agreement. If you agree to its terms, click **I accept the terms of the license agreement**. Click **Next**.

4. In the Directory Name panel, type the path and directory name of the directory that the wizard uses when it installs Business Integration Connect. Click **Next**.




5. In the Component Selection panel, select the components you want to install on the server. You can select any number of components.



The rest of this procedure assumes that you are installing all of the components on this server. If you are not installing all of them, some of the panels described in the rest of this procedure will not appear. Click **Next**.

6. In the User Information panel, type the name, password, and user group of the Business Integration Connect user. The user and user group were created when the server was configured. See [“Configuring Linux” on page 17](#) for more information.



Enter the name, password, and group of the operating system user who will own the installed files and execute the server processes.

Note: to access the common shared files, the UID (user) and GID (group) on every computer must be the same.

User name


Password

Group name

InstallShield

< Back   Next >   Cancel

7. In the WebSphere MQ Server panel, type information about your WebSphere MQ server.



Enter information about the WebSphere MQ server being used by Business Integration Connect.

Host name

Queue Manager

Listener port

Enter the location of common information shared by the Business Integration Connect components.

Mount point for shared information:

InstallShield

< Back   Next >   Cancel

In the Host name text box, if WebSphere MQ is not on the current machine, replace localhost with the name of the system containing WebSphere MQ.

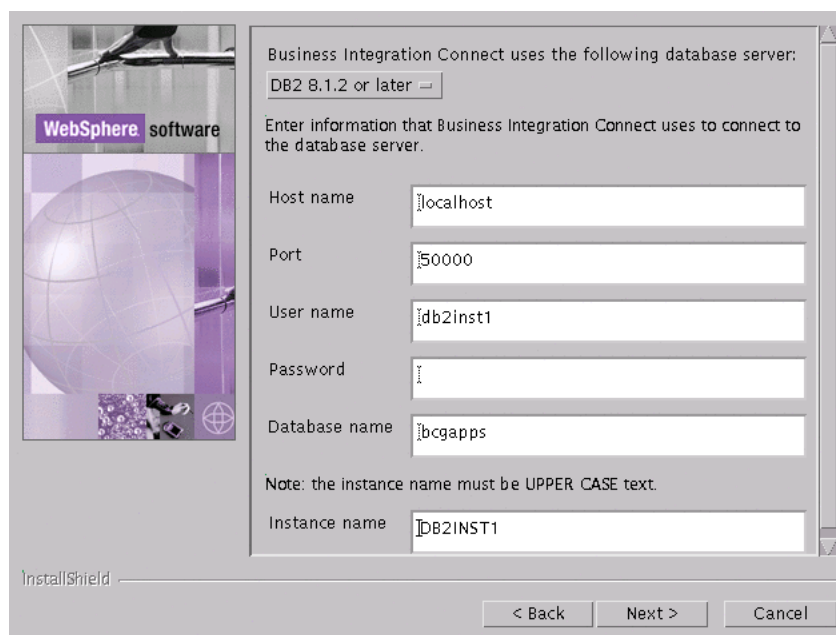
In the Queue Manager text box, replace the default name with the name that was used when configuring WebSphere MQ (Step 2 in [“Configuring WebSphere MQ” on page 18](#)).

In the Port text box, type the port that the listener is using (see [Step 6](#) in “[Configuring WebSphere MQ](#)” on page 18).

In the Mount point for shared information text box, type the location of the common shared components. This value **must** match the Mount point location used in the Database Loader installation.

Click **Next**.

8. In the Database information panel, type information about the DB2 database:



The screenshot shows a window titled "Business Integration Connect uses the following database server: DB2 8.1.2 or later". The window contains a sidebar with the WebSphere software logo and a globe icon. The main area has the text "Enter information that Business Integration Connect uses to connect to the database server." Below this are several text fields: "Host name" (localhost), "Port" (50000), "User name" (db2inst1), "Password" (empty), "Database name" (bcgapps), and "Instance name" (DB2INST1). A note states "Note: the instance name must be UPPER CASE text." At the bottom, there are buttons for "< Back", "Next >", and "Cancel". The "InstallShield" logo is visible in the bottom left corner.

In the Host name text field, if DB2 is not on the current system, replace localhost with the name of the system containing DB2.

In the Port text field, type the port that the DB2 instance is using. To find out which port the DB2 instance is using, examine the services file in the /etc directory on the database server or review the DB2 database manager configuration for the instance. The default port is 50000.

In the User name, Password, Database name, and Instance name text fields, type the owner name, owner's password, database name and the instance name respectively. These are the names used in the Database Loader installation to define the database. See “[Setting up the database tables](#)” on page 23. Note that for the instance name, the value you enter must be all uppercase characters.

Click **Next**.

9. If you selected to install the Community Console, configure it using the Community Console configuration panel.

WebSphere software

Enter the name and password that the Community Console uses to access the database.

User name

Password

Enter the ports used by the Community Console:

HTTP port

HTTPS port

Note: these ports must be unique and available for use on this computer.

InstallShield

< Back Next > Cancel

In the User name text box, type the user ID that the Community Console component uses to log in to the database.

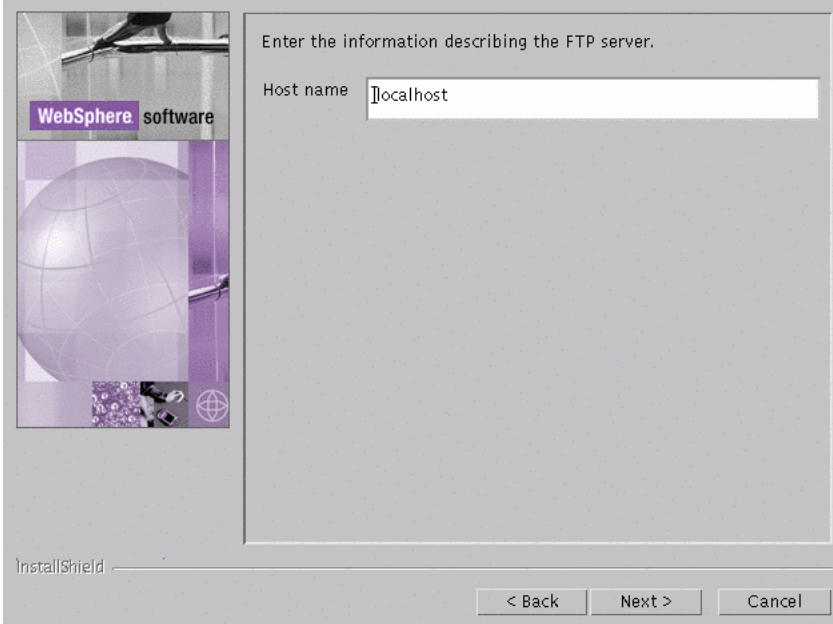
In the Password text box, type the password associated with the user name. Make sure that you enter the correct password because the Community Console will not function with an incorrect password.

In the HTTP port text box type the name of the port on which the component listens for messages. The Community Console, Receiver, and Document Manager must have unique port numbers and they must be available on this computer.

In the HTTPS port text box, enter the name of the secure port on which the component listens for messages. The Community Console, Receiver, and Document Manager must have unique port numbers and they must be available on this computer.

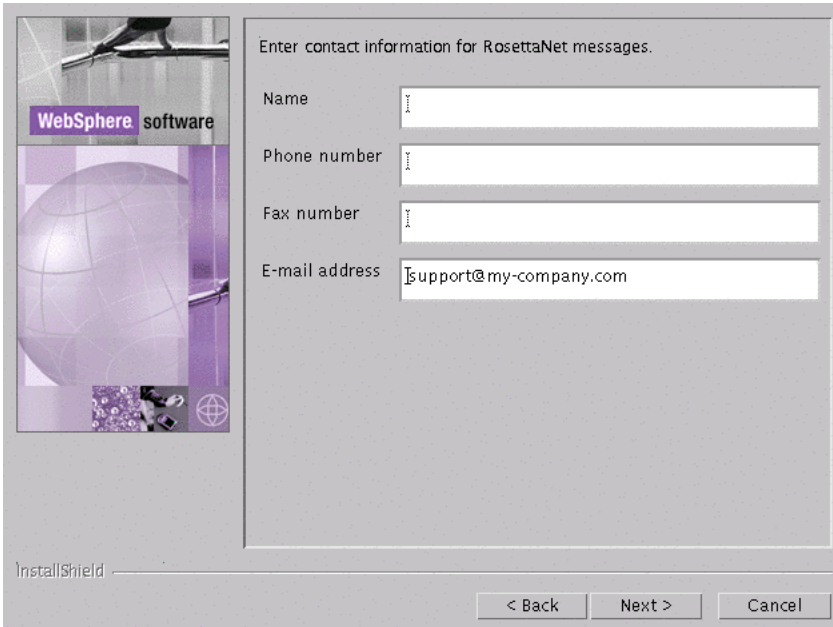
Click **Next**.

10. In the FTP Server panel, enter the name of the machine hosting the FTP server.



The screenshot shows the 'Enter the information describing the FTP server.' panel. On the left is a vertical sidebar with the 'WebSphere software' logo and a globe icon. The main area contains a 'Host name' label followed by a text box containing 'localhost'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'InstallShield' logo is visible in the bottom left corner of the window.

11. If you selected the Receiver or Document Manager components, configure them using their configuration panels. These panels have the same fields as the Community Console Configuration panel in step 9. Note that all three components (Community Console, Receiver, and Document Manager) must have different HTTP and HTTPS ports.
12. In the RosettaNet Configuration panel, type the Contact Information for RosettaNet messages. This information is required if you are using RosettaNet, and is recommended for all installations.



The screenshot shows the 'Enter contact information for RosettaNet messages.' panel. On the left is a vertical sidebar with the 'WebSphere software' logo and a globe icon. The main area contains four labels with corresponding text boxes: 'Name', 'Phone number', 'Fax number', and 'E-mail address'. The 'E-mail address' box contains 'support@my-company.com'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'InstallShield' logo is visible in the bottom left corner of the window.

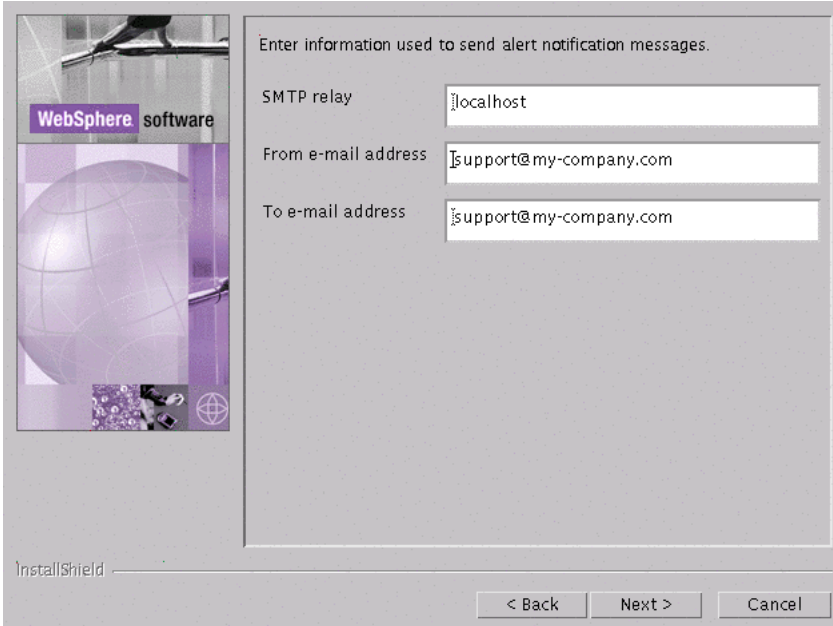
In the Name text box, type the name of the person that should be contacted for RosettaNet problems.

In the Phone number and Fax number text boxes, type the telephone and fax numbers used to contact the RosettaNet contact person.

In the E-mail address text box, type the e-mail address used to contact the RosettaNet contact person.

Click **Next**.

13. In the Alert Notification panel, configure Business Integration Connect so that it can send alerts by e-mail.

The screenshot shows a configuration window titled "Enter information used to send alert notification messages." On the left is a vertical sidebar with a "WebSphere software" logo and a globe icon. The main area contains three text input fields: "SMTP relay" with the value "localhost", "From e-mail address" with the value "support@my-company.com", and "To e-mail address" with the value "support@my-company.com". At the bottom left is a progress bar labeled "InstallShield". At the bottom right are three buttons: "< Back", "Next >", and "Cancel".

In the SMTP relay text box, type the location of the SMTP server.

In the From e-mail address text box, type the e-mail address Business Integration Connect uses to send e-mails.

In the To e-mail address text box, type the destination e-mail address that users responding to Alert Notifications use when they send a response e-mail. Click **Next**.

14. In the Summary panel, review the information on this panel, which identifies the components that will be installed. If any of this information is incorrect, click **Back** to return to previous panels. When all of the information on the summary panel is correct, click **Next**.
15. The Business Integration Connect Installer installs and configures the selected components. When it has completed this task, the installer enables the Finish button. Click **Finish**.

Repeat this procedure on each server where you want to install Business Integration Connect components and the common content. When you have installed all Business Integration Connect components, see [“Starting Business Integration Connect” on page 35](#).

## Installing the components using the command line

Business Integration Connect also provides a way to install the components using a command line. This feature requires an options file that provides values for all of the installation options. You can either modify the provided sample ISS files or perform an install using the GUI and record your choices to create a custom options file. The sample files for the DB Loader are in the DBLoader directory on the CD or in the unarchived install image while the Business Integration Connect sample files are in the hub directory on the CD or in the unarchived install image.

Each option in the file appears on a separate line. Each option is preceded by comments that describe the setting and present an example of the option. In the sample files, the option values are the default values presented in the GUI. Some settings such as passwords and hostnames require information about the local configuration.

You can also generate your own options file while running the install or uninstall program. You can then use this options file to duplicate the install or uninstall. For information, see [“Performing a silent install” on page 34](#).

To install the DB Loader or Business Integration Connect using the command line:

1. Log in as root.
2. Open a command line on the machine on which you want to install the code.
3. Navigate to the location of the installation executable.

```
cd DBLoader
```

or

```
cd hub
```

4. Enter the following command:

```
./setupLinux -options "<options file name>"
```

Where *<options file name>* identifies the file that contains the option values the installer will use.

With this command, the installer displays all of the panels that appear in a normal GUI installation and all of the fields in the panels contain the values listed in the options file.

### Performing a silent install

DB Loader and Business Integration Connect can install and uninstall without a GUI or user interaction. This is particularly useful when installing them on multiple systems using the same settings or when a graphical environment is not available. To install the DB Loader or Business Integration Connect silently:

1. Log in as root.
2. Open a command line on the machine on which you want to install the code.
3. Navigate to the location of the installation executable.

```
cd DBLoader
```

or

```
cd hub
```

4. Enter the following command:

```
./setupLinux -options "<options file name>" -silent
```

Where *<options file name>* identifies the file that contains the option values the installer will use.

The installer runs without any user interaction or GUI. When the installation is complete, the installer returns to the command prompt.

## Generating an options file

To generate an options file with settings specific to your installation:

1. Log in as root.
2. Open a command line on the machine on which you want to install the code.
3. Navigate to the location of the installation executable.

```
cd DBLoader
```

or

```
cd hub
```

4. Enter the following command:

```
./setupLinux -options-record "<options file name>"
```

Where *<options file name>* identifies the file to contain the options used in the installation.

The installer runs using the GUI. It installs the DB Loader or Business Integration Connect and places the given options file in the install directory (/opt/IBM/WBICConnect/DBLoader or /opt/IBM/WBICConnect/ if you used the default value). You can then edit this file with any text editor, or use it without changes to reinstall the product or create duplicate installs on other machines.

To generate just the options file without installing the product, replace the *-options-record* command with the *-options-template* command. This command creates the options file with all of the entries necessary to install the product but each of these entries must be modified with your specific installation settings.

---

## Starting Business Integration Connect

After you have installed the code for Business Integration Connect, the product is ready to run. Note that if you are going to use FTP as a transport protocol, you must perform some additional configuration. For more information, see [“Setting up the FTP server” on page 38](#).

To start Business Integration Connect:

1. Change to the general Business Integration Connect user:

```
su - bcguser
```

2. Position yourself in the Community Console script directory:

```
cd /opt/IBM/WBICConnect/console/was/bin
```

3. Start the Community Console using the following command:

```
./startServer.sh server1
```

4. Position yourself in the Receiver script directory:

```
cd /opt/IBM/WBICConnect/receiver/was/bin
```

5. Start the Receiver using the following command:

```
./startServer.sh server 1
```

6. Go to the Document Manager script directory:

```
cd /opt/IBM/WBICConnect/router/was/bin
```

7. Start the Document Manager using the following command:

```
./startServer.sh server 1
```

8. Open a Web browser and enter the following URL:

```
http://<hostname>.<domain>:8080/console
```

Where *<hostname>* and *<domain>* are the name and location of the computer hosting the Community Console component.

9. The Web browser displays the Welcome page. Log into Business Integration Connect using the following information:

- In the User Name field, type:

```
hubadmin
```

- In the Password field, type:

```
Pa55word
```

- In the Company Name field, type:

```
Operator
```

Click **Login**.

You have now logged into Business Integration Connect. See the [Getting Started](#) guide for information on what to do next or see “[Testing your installation](#)” on page 37 for a way to test your installation.

---

## Testing your installation

Use this procedure to test your installation when Business Integration Connect is running:

1. Create a user login event-based alert and set yourself up as the contact for the alert. For information about creating an alert and adding a contact to the alert, see "Managing alerts" in the Community Console User's Guide.
  - In the Alert Owner drop-down list, select **Hub Operator**.
  - In the Participant drop-down list, select **Hub Operator**.
  - In the Event Type drop-down list, select **Info**.
  - In the Event Name drop-down list, select **102002 User Login was successful**.
2. Log out and then login again as the Hub Admin user.
3. Check your e-mail for an alert message.

---

## Troubleshooting

If you encountered problems while installing the DB Loader, consult the DB Loader logs in /opt/IBM/WBICConnect/DBLoader directory for information on the problem. Once the problem is resolved, do the following to delete the created database:

1. Switch to the database owner by entering the following command and replacing *<database owner name>* with the name of the database owner (db2inst1 if the default was used):  

```
su - <database owner name>
```
2. Enter the DB2 interactive mode:  

```
db2
```
3. Delete the database by entering the following commands and replacing *<DB2 instance>* with the name of the database instance and *<Database name>* with the name of the database you are deleting:  

```
FORCE APPLICATIONS ALL  
ATTACH TO <DB2 instance>  
DROP DATABASE <Database name>  
TERMINATE
```
4. Once you have deleted the database, rerun the DB Loader wizard.

In the event that there are problems with installing the Business Integration Connect components, review the following installation logs:

/opt/IBM/WBICConnect/console/logs

/opt/IBM/WBICConnect/receiver/logs

/opt/IBM/WBICConnect/router/logs

You can also examine the runtime logs:

```
/opt/IBM/WBICConnect/console/was/logs/server1
```

```
/opt/IBM/WBICConnect/receiver/was/logs/server1
```

```
/opt/IBM/WBICConnect/router/was/logs/server1
```

---

## Setting up the FTP server

The recommended FTP server is ProFTPD. Business Integration Connect includes a set of Perl scripts that the Community Console uses to configure the FTP server. The Perl scripts are in the `../common/ftp/bin` directory. If you are using a different FTP server, you must modify these scripts accordingly.

To set up ProFTPD:

1. Make the following edits to the `con_createFTPAcct.pl` file:

Set the `$uid` variable to the UID of the `bcguser`.

Set the `$gid` variable to the GID of the `bcggroup` group.

For example:

```
$uid = "2002"; ## Replace with the UID of the bcguser.
```

```
$gid = "100"; ## Replace with the GID of the bcggroup group.
```

2. In all of the Perl scripts, there are variables that have `/common` in their value. Verify that these values are correct. For example, the `$passwd_file` variable in the `con_createFtpAcct.pl` file must have the correct path to the `ftp.passwd` file.

```
$passwd_file = "/common/ftp/conf/ftp.passwd"
```

---

## Uninstalling Business Integration Connect

Use this procedure to uninstall Business Integration Connect or the Database Loader:

1. If you want to reinstall the components you are uninstalling, save the options file used to install the components. See [“Installing the components using the command line” on page 34](#) for information on this file.

2. In the `_uninst` directory, run the uninstaller executable.

```
cd _uninst
```

```
./uninstaller
```

The uninstaller wizard starts and displays the Welcome panel. Click **Next**.

3. If you are uninstalling Business Integration Connect, in the Component Selection panel, select the components that you want to remove from this system. You can select one or more components.

Be careful about uninstalling the common shared files. If you do not reinstall the common shared files into the same location, many of the configurations in properties files and in the database will require changing. Contact IBM service for more information.

Note that Business Integration Connect requires at least one instance of each component. If you remove the only instance of a component, you must install that component on another system. For example, if you remove the only instance of Document Manager on your network, you must install Document Manager on another system.

Click **Next**. The Uninstaller displays the Summary panel.

4. The Summary panel lists the components that the uninstaller will remove. Review this information. If any of this information is incorrect, click **Back** to return to previous panels. When all of the information on the summary panel is correct, click **Next**.
5. The uninstaller removes the selected components. When it has removed all of the components, the uninstaller enables the Finish button. Click **Finish**.
6. Review the files that remain in the directory structure and then recursively remove the directory tree.



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