IBM

IBM Global Data Synchronization for
WebSphere Product Center V 1.2

WebSphere Business Integration Connect, MQ configuration Guide

Note: Before using this information and the product it supports, read the information in
        "Notices" on page 29.

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About this document

Audience

This document is for consultants, developers, and system administrators, who plan, install, deploy, and administer WebSphere Business Integration Connect for IBM Global Data Synchronization for WebSphere Product Center.

Related documentation

The following related IBM Global Data Synchronization for WebSphere Product Center 1.2 documentation is also available:

- User Guide

- Installation and Configuration Guide

- Customization Guide

Typographic conventions

This document uses the following conventions:

- `Courier New font` – Indicates commands, directory names, user names, path names, and file names.

- Note - Indicates important or clarifying information including exceptions, interdependencies, and special situations.

- Tip - Indicates a helpful action that will simplify or streamline the current procedure.

- bold font - Indicates buttons, tabs, menus, and keyboard key names. For example, the **Save** button.

- Italics font - Indicates screen names. For example, the *Login* screen.

Terms and Acronyms

Term/Acronym	Description
GDS	For convenience, the product name IBM Global data synchronization for WebSphere Product Center is sometimes written in a shortened form as GDS. All instances of the acronym GDS in this document and related documentation stand for the product name IBM Global Data Synchronization for WebSphere Product center

Ch 1   Setup Diagram

DMZ

GDS
pool

WBIC

Data

Data pool

WBIC Server

GDS

Inbound Q

JMS Target

Manager

Community
Participant

HTTP
Target

Data
pool

Outbound Q

JMS Gateway

HTTP
Gateway
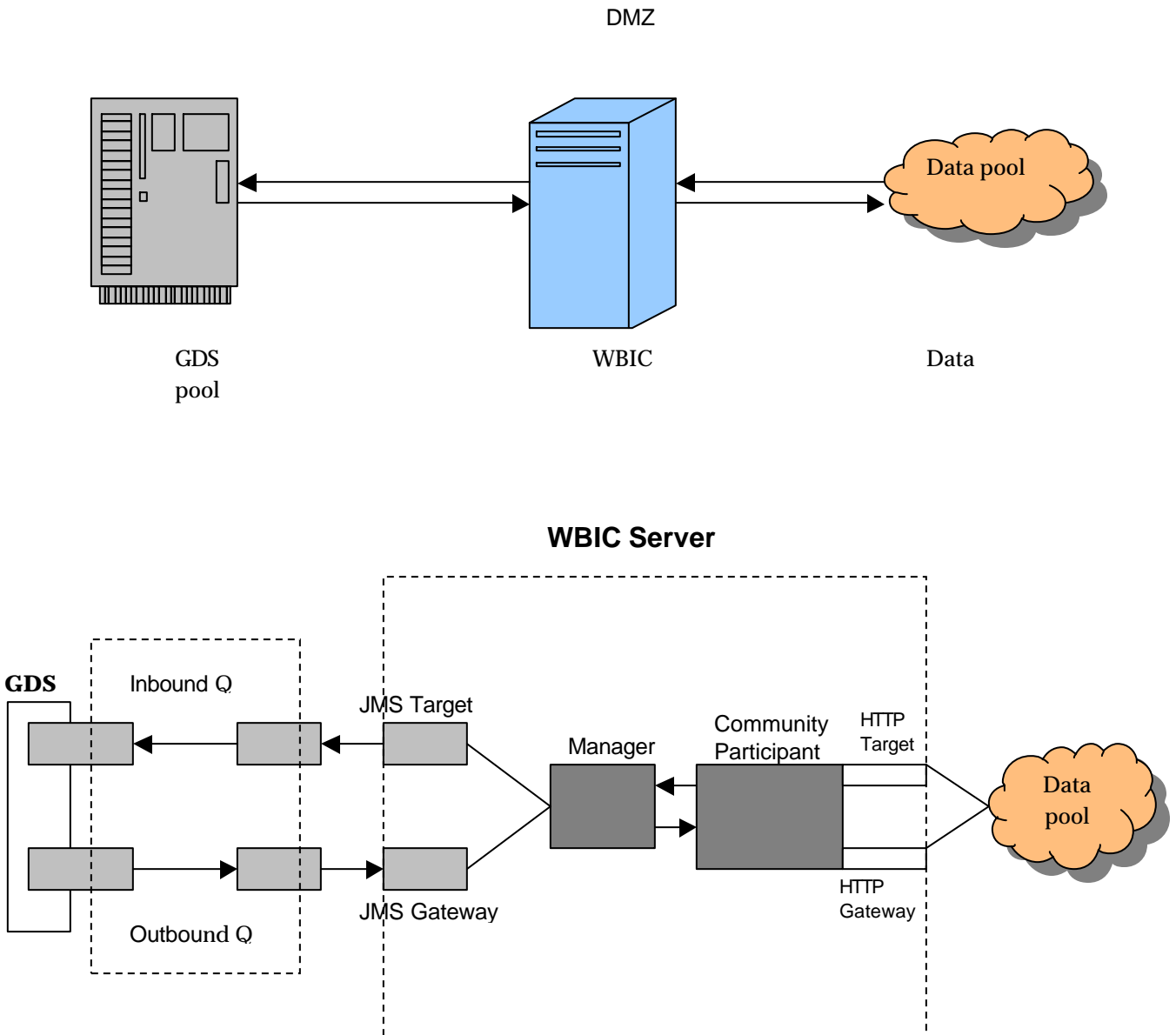
Hardware/Software Requirements

Hardware Requirement

IBM Intellistation Zpro / 2GB RAM / 40 HB HDD / 2WAY

Software Requirement

The software Datapool connection is:

- WebSphere Business Integration Connect 4.2.2 Enterprise Fix Pack 4
- WebSphere MQ Version 5.3
- Oracle 9i
- Operating System - Windows 2000 Professional with Service Pack 4.

Ch 2　Installation steps

Install Oracle

Install the required version of Oracle. Refer to the following to find help on Oracle installation.

http://download-west.oracle.com/docs/html/A95494_01/toc.htm

While installing Oracle, in the **database identification stage**, type "wbic" in the fields **Global DB Name** and **SID**.

Install MQ Server

Complete the MQ server installation.

Setup ClassPath

The following steps describes as to how to set up a classpath.

Go to <MQ Installed DIR>Java\lib　and check for jar files.

- com.ibm.mq.jar
- com.ibm.mqbind.jar
- com.ibm.mqjms.jar
- connector.jar
- fscontext.jar
- jms.jar
- jndi.jar
- jta.jar
- ldap.jar
- postcard.jar
- providerutil.jar

Add the following jar files to the system CLASSPATH.

```
1.  <MQ Installed DIR>\Java\lib\providerutil.jar;

2.  <MQ Installed DIR>\Java\lib\com.ibm.mqjms.jar;

3.  <MQ Installed DIR>\Java\lib\ldap.jar;

4.  <MQ Installed DIR>\Java\lib\jta.jar;
```

5. <MQ Installed DIR>\Java\lib\jndi.jar;

6. <MQ Installed DIR>\Java\lib\jms.jar;

7. <MQ Installed DIR>\Java\lib\connector.jar;

8. <MQ Installed DIR>\Java\lib\fscontext.jar;

9. <MQ Installed DIR>\Java\lib\com.ibm.mq.jar;

Creation of .bindings file

To create a .bindings file, follow the following steps:

1. On the server machine, create a directory and label it
   C:\JNDI-Directory

> **Note:** If this directory already exists, delete any earlier versions of the .bindings
>   files from it.

2. On the server machine, navigate to <MQ Installed DIR>\Java\bin and add
   the following changes in the JMSAdmin.config file.

Change the following configuration in **JMSAdmin.config** file
a. INITIAL_CONTEXT_FACTORY
b. PROVIDER_URL

Example
INITIAL_CONTEXT_FACTORY=com.sun.jndi.fscontext RefFSContextFactory
PROVIDER_URL=file:/C:/JNDI-Directory
On server machine, navigate to following directory <MQ Installed
DIR>\Java\bin to
Execute the file JMSAdmin.bat .

```
Command Prompt

C:\Program Files\IBM\WebSphere MQ\MSI\Program Files\IBM\WebSphere MQ\Java\bin>JMSAdmin.bat_
```

```
Command Prompt - JMSAdmin.bat

5648-C60, 5724-B41, 5655-F10 (c) Copyright IBM Corp. 2002. All Rights Reserved.
Starting Websphere MQ classes for Java(tm) Message Service Administration

InitCtx> _
```

If an exception occurs then check if the classpath is set for the jar files that are
mentioned in "Setup Classpath"

Execute the following two commands :
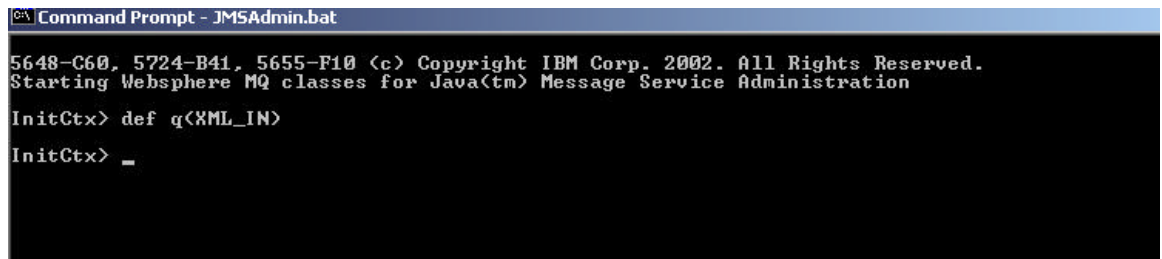
- `def q( < mention queue name> )`
  Example:

  def q(XML_IN)
  def q(XML_OUT)
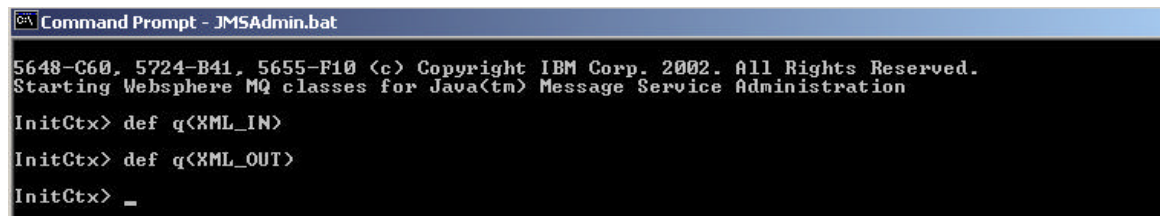
- `def qcf( < mention queue factory name > )`
  ```
  transport(CLIENT)
  channel(< mention Server Connection Channel name >)
  host( < mention server ip address >)
  port(< mention port number>)
  qmgr(< mention queue manager name >)
  ```

  Example:
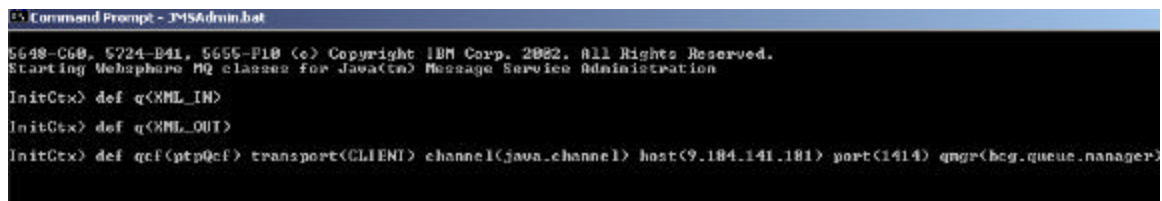
  ```
  def qcf(ptpQcf) [Note: Queue factory name mentioned in gds.properties]
  transport(CLIENT)
  channel(java.channel)
  host(9.184.141.181)
  port(1414)
  qmgr(bcg.queue.manager)
  ```


Note: If you get a message saying unable to bind object message, check whether
/JNDI-Directory exist or not.

> If there is already an earlier version of .bindings file existing in the folder, delete it and then execute the above command.

3. After running these commands this creates a .bindings file in the C:\JNDI-Directory. Copy that binding file from C:/JNDI-Directory folder and paste to the required destination <GDS Installed DIR>/etc/default.
Example: For GDS, paste this binding file to $TOP/etc/default directory if it Linux client

Ch 3   IBM Global Data Synchronization for WebSphere Product Center Configuration

In IBM global Data synchronization for WebSpher eProduct Center there are

Configuration changes in gds.properties file:

Open $Top/etc/default/gds/properties file and set the value of the variable **SEND_TO JMS to TRUE.**

Go to $TOP/etc/messaging/xml/Choose demand/supply, then go to the uccnet/transora/wwrev6 folder with respect to your requirement and set the values for the parameters **<inBoundQueueName>, <outBoundQueueName>and<queueConnectionFactory>** in the file **properties.xml**.

For Example:

For Inbound message:

```
<inBound>
    <transport>
    <jms>
            <inBoundQueueName>XML_OUT</inBoundQueueName>
  <initialContextFactory>com.sun.jndi.fscontext.RefFSContextFactor
  y</initialContextFactory>
            <queueConnectionFactory>ptpQcf</queueConnectionFactory>
    </jms>
    </transport>>
    …
    …
    </inBound>
```

Similarly for Outbound message:

```
<outBound>
<transport>
    <jms>
```

```
        <outBoundQueueName>XML_IN[I3]</outBoundQueueName >
<initialContextFactory>com.sun.jndi.fscontext.RefFSContextFactory</i
nitialContextFactory>
    <queueConnectionFactory>ptpQcf[I4]</queueConnectionFactory>
    </jms>
</transport>
<outBound>
```

In the above example:
XML_OUT: this will be the queue name for inbound message
XML_IN: this will be the queue name for outbound message.
ptpQcf: this will the queue factory name.

To Start/Stop JMSReceiver :

> **To start JMSReceiver**, go to $TOP/bin directory and execute :
> gdsmsg.sh start

> **To abort the JMSReceiver**, go to $TOP/bin directory and execute
> gdsmsg.sh abort

> **To check the status of the JMSReceiver**, go to $TOP/bin directory and
> execute
> gdsmsg.sh status

Ch 4   WebSphere Business Integration Connect 4.2.2.4 Installation

The following steps explain how to install and configure WebSphere Business Integration Connect.

1. In Windows, create four users having the same username and passwords viz.,

    *   bcgcon (for console),

    *   bcgrecv (for receiver),

    *   bcgdoc (for document manager)

    *   bcguser

2. Create a group called bcggroup with the above users as part of the group.

Install DataBaseLoader

Run setup file and start the installation of the database loader.

In the **administrator password** field Enter the password as **sys** if the database is Oracle (For Oracle)

In the **Oracle SID** field, enter the Oracle SID as WBIC as shown in the following screen.
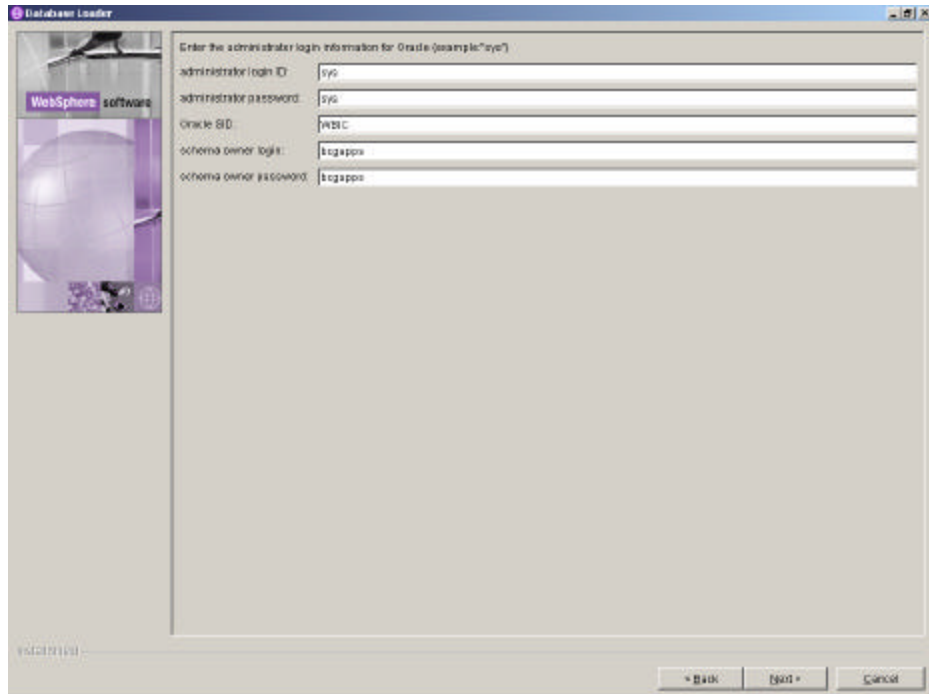
Hub Installation

Run the setup file for hub installation.

In the **password** field, Enter the password for the user **bcguser** for example bcguser123.

Select **Install as Windows Service** and Click **Next**. The window to select the database server for Business Integration Connect is displayed.

In the **Owner Name** field, enter database user name as bcgapps

In the **Owner Password** field, enter the password.
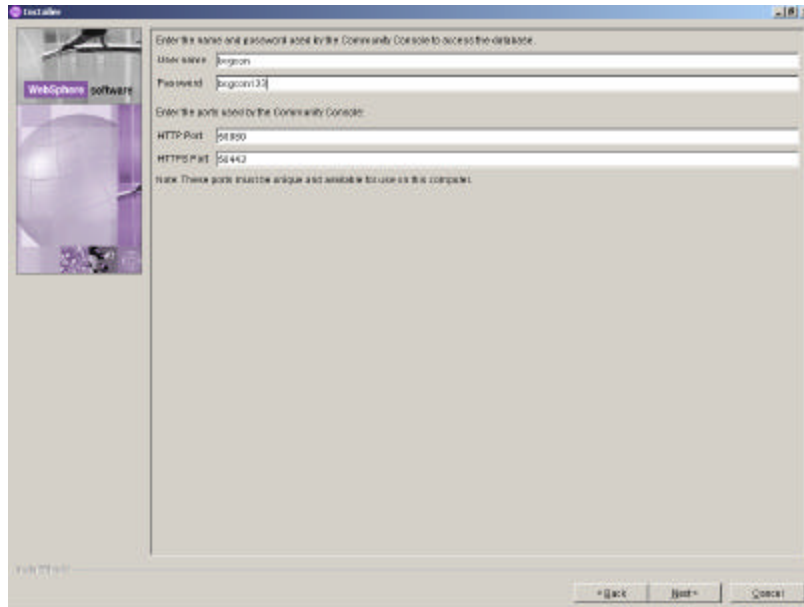
In the screen to enter user name and password used by the community console:

In the **User name** field, enter the user name as bcgcon.

In the **Password** field, enter the password.
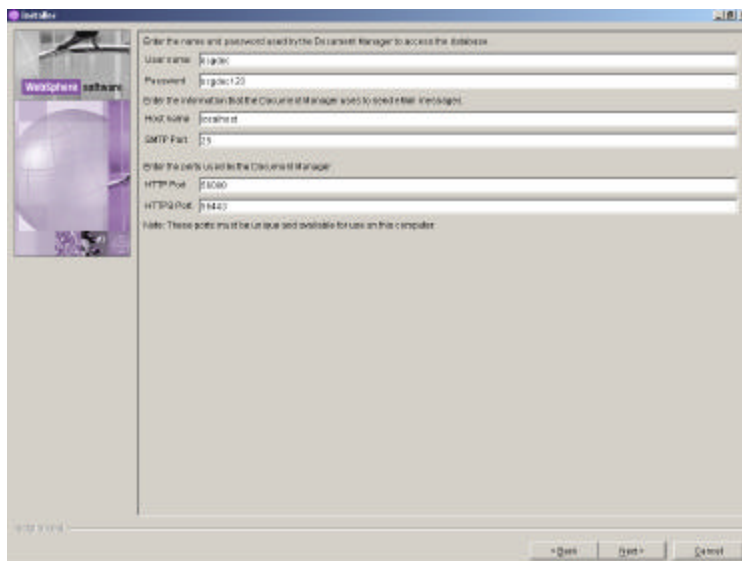
Ensure relevant information in the rest of the fields and click **Next**. The screen to enter the user name and password used by the receiver to access the database is displayed.
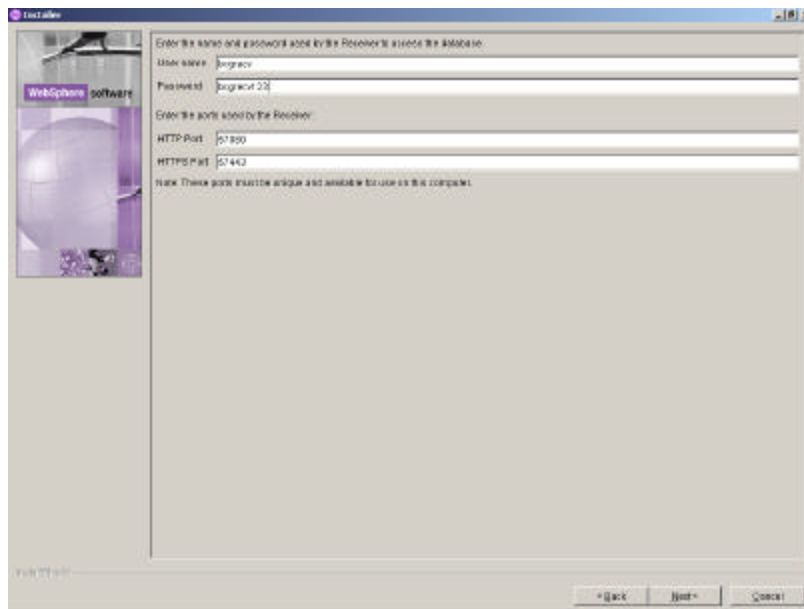
In the **User name** field enter the user name as bcgrecv.

In the **password** field, enter the password.

Ensure relevant information in the other fields and click **Next**. The screen to enter the user name and password used by the Document Manager to access the database is displayed.

In the **User Name** field enter the user name as bcgdoc.

In the **password** field, enter the respective password.

Ensure relevant values in the rest of the fields and click **Next**. The screen to enter the contact information is displayed.

Ensure relevant information is entered and click **Next**. The screen to enter the contact information used to send notifications is displayed.
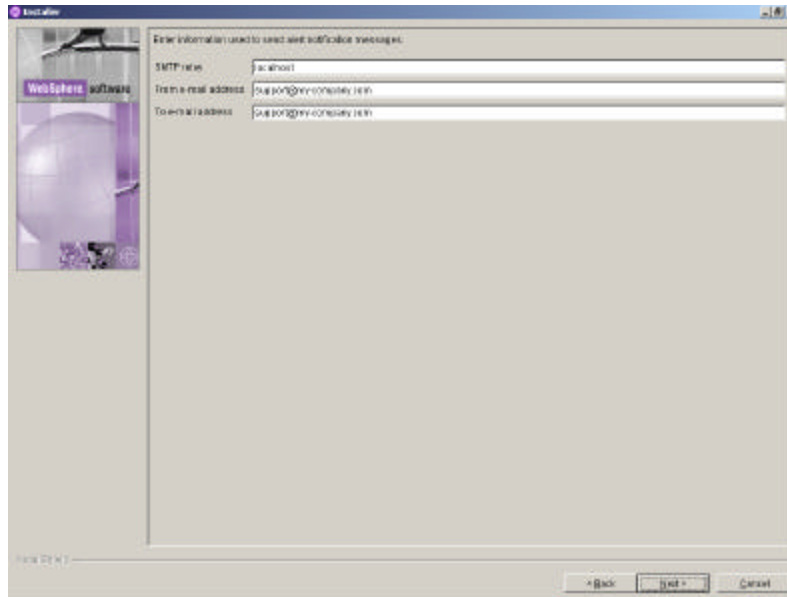
Enter that relevant information is provided and click **Next**. The screen providing the summary of the installation is displayed. Click **Next**. The installation process is initiated. Once the installation is complete, a successful installation notification is displayed.

This completes all the processes required for the installation of IBM WebSphere Business Integration Connect – Enterprise edition for the IBM Global Data Synchronization for WebSphere Product Center.

WebSphere Business Integration Connect, MQ Installation Guide

Ch 5   WebSphere Business Integration Connect 4.2.2.4 Configuration

The following configuration needs to be done for WBIC box.

- [Community Participants](#)

- [Targets](#)

- [Gateways](#)

- [Interactions](#)

- [B2B Capabilities](#)

- [Participant Connections](#)

- [Security Configuration](#)

Community Participants

To define Partner One (IBMGDS)

1. Go to Community Console and select **Account Admin**. By default, the Community Participant view is displayed.

2. Click Create and define the following properties:
    - Participant Login Name: IBMGDS

    - Participant Name: Partner One

    - Participant Type: Community Manager

3. Click **New** under Business ID.

4. Select **Type** as DUNS+4 and add an Identifier value as the Global Location Number(GLN).

5. Click **Save**.

To define Partner Two (Datapool)

1. Got to Community Console and select **Account Admin .** The **Community Participant** display is the default view.

2. Click **Create** and define the following properties:

    - Participant Login Name: <datapool name>

    - Participant Name: Partner Two

    - Participant Type: Community Participant

3. Click **New** under Business ID.

4. Select **Type** as **DUNS+4** and add an **Identifier** value of Datapool specific Global Location Number(GLN).

5. Click **Save**.

Targets

To create a target for the receipt of HTTP:

1. Select **Hub Admin** from the main menu and then **Targets** from the horizontal navigation bar.

2. Click **Create**.
3. Define the following properties for the new target:
   - Target Name: HttpTarget

   - Transport: HTTP/S

   - Gateway Type: Production

   - URI: /bcgreceiver/submit (specific to WBIC receiver)

4. Click **Save**.

To create a target for the receipt of files on the local file system:

1. Select **Hub Admin** from the main menu and then **Targets** from the horizontal navigation bar.

2. Click **Create**.

3. Define the following properties:

   - Target Name: FileTarget

   - Transport: File Directory

   - Default Gateway Type: Production

   - Document Root Path: \temp\FileTarget

Note: This will create a FileTarget directory within the C:\temp directory. Be sure a C:\temp directory exists on your local file system in case you are using this Document Root Path.

Gateways

To create a gateway for Partner One:

1. Select **Account Admin** from the main menu and **Community Participant** from the horizontal navigation bar.

2. Click **Search**.

3. Select **Partner One (IBMGDS)** by clicking the icon.

4. Click **Gateways** from the horizontal navigation bar.

5. Select **Create** and provide the following details:
   - Gateway Name: IBMGDSGateway
   - Transport: File Directory
   - Target URI: file://C:\FileGateway

6. Click **Save**.

Next, set this newly created gateway as the default gateway for Partner One. To do this, follow the steps mentioned below:

1. Click **List** to view all gateways configured for Partner One.

2. Click **View Default Gateways**.

3. From the Production Gateway Type drop down menu, select **IBMGDSGateway**.

4. Click **Save**.

Create a gateway for Partner Two

1. Select **Account Admin** from the main menu and **Community Participant** from the horizontal navigation bar.

2. Click **Search**, and select **Partner Two(Datapool)** by clicking the icon.

3. Select **Gateways** from the horizontal navigation bar.

4. Click **Create** and enter the following details:

   - Gateway Name: <Datapool Gateway Name> (Example: TransoraGateway)

   - Transport: HTTP/1.1

- Target URI: http://IP_MACHINE_B:80/input/AS2 (IP pointing to datapool)

- User Name: IBMGDS

- Password: IBMGDS

5. Click **Save**.

The next step is to define a default gateway for this participant. To define a default gateway:

1. Click List followed by View Default Gateways.

2. From the **Production Gateway Type** drop down menu, select <Datapool Gateway Name> (for example: **Transora Gateway**.)

3. Click **Save**.

Interactions

Create two new interactions.

1. Select **Hub Admin** from the main menu and **Document Flow Definition** from the horizontal navigation bar.

2. Select **Manage Interactions** and then **Create Interaction**.

3. From the Source column select **Package: None, Protocol: XML, Document Flow: All**.

4. From the Target column select **Package: AS, Protocol: XML, Document Flow: All**.

5. Set **Action** to Pass Through and click **Save**.

The following steps explain creating a custom XML interaction "Protocol:XML" :

Creating a CustomXML protocol definition format

The following steps describe how to create a custom XML protocol definition format

1. Click **Hub Admin** > **Document Flow Definitions** > **Create Document Flow Definition**.
2. For **Document flow type**, select **Protocol**.
3. For **Code**, enter the value for the type of object you selected in the previous step. For example, you might want to enter XML.
4. For **Name**, enter an identifier for the document flow definition. For example, for a custom XML protocol, you could enter Custom_XML. This field is required.
5. For **Version**, enter **1.0**.

6. Enter an optional description of the protocol.
7. Set **Document Level** to **No**, because you are defining a protocol, rather than a document flow (which you will define in the next section).
8. Set **Status** to **Enabled**.
9. Set **Visibility** for this protocol. You will probably want it to be visible to all participants.
10. Select the packages in which this new protocol will be wrapped. For example, if you want this protocol to be associated with all three packages, select **Package: AS**, **Package: None**, and **Package: Backend Integration**.
11. Click **Save**.

Next, use the Create Document Flow Definition page again to create a document flow.

Creating a document definition flow

1. Click **Hub Admin > Document Flow Definitions > Create Document Flow Definition.**
2. For **Document flow type**, select **Document Flow**.
3. For **Code**, enter the value for the type of object (document flow) you selected in the previous step.
4. For **Name**, enter an identifier for the document flow definition. For example, you could enter XML_Tester as a name for the document flow. This field is required.
5. For **Version**, enter **1.0**.
6. Enter an optional description of the protocol.
7. Set **Document Level** to **Yes** (because you are defining a document level).
8. Set **Status** to **Enabled**.
9. Set **Visibility** for this flow. You will probably want it to be visible to all participants.
10. Click the folder icon to expand each package you selected in the previous procedure. Expand the folder and select the name of the protocol you created in the previous section (for example, Protocol: CustomXML.).
11. Click **Save**.

The following is an example of what the AS Package portion of the Manage Document Flow Definitions page would look like if you created a protocol of CustomXML, associated the protocol with AS, None, and Backend Integration packaging, and created a document flow of XML_Tester:

Creating an XML format

After you create a custom XML protocol (and associate it with a package or set of packages) and create an associated document flow, you are ready to create the XML format. To create an XML format, use the following procedure.

1. Click **Hub Admin > Hub Configuration > XML Formats**.
2. Click **Create XML Format**.

3. For **Routing Format**, select the document flow definition with which this format will be associated.
4. For **File Type**, select **XML**. **Note**: XML is the only option available for file type.
5. For **Identifier Type**, select the element used to identify the incoming document type. The choices are **DTD, Name Space,** or **Root Tag**.
6. For each field for which a choice of types is offered, select either **Element Path**, which is the path to the value in the document, or **Constant**, which is the actual value in the document. Then provide a value.
    a. For Source/Target Business ID, enter the xml path of the business ID. This field is required.

7. Click **Save.**

Create a second interaction.

1. Click **Create Interaction**.
2. From the **Source** column select Package: AS, Protocol: XML, Document Flow: All.
3. From the **Target** column select Package: None, Protocol: XML, Document Flow: All.
4. Set **Action to Pass Through** and click **Save**.

Interactions

B2B Capabilities

Follow the steps mentioned below to define B2B Capabilities for both Partner One (IBMGDS) and Partner Two (Transora).

Set the B2B Capabilities for Partner One (IBMGDS).

1. From the **Account Admin** main menu, select **Community Participant** from the horizontal navigation bar and click **Search**.
2. Select **IBMGDS** by clicking the icon.
3. Select **B2B Capabilities** from the horizontal navigation bar.
4. Select **Set Source** and **Set Target** for the following: Package: AS Protocol: XML Document Flow: ALL
5. In addition select **Set Source** and **Set Target** for: Package: None Protocol: XML Document Flow: ALL

Set the B2B Capabilities for Partner Two (Transora).

1. Select **Account Admin** from the main menu and **Community Participant** from the horizontal navigation bar.
2. Click **Search**.
3. Select Partner Two by clicking the icon.
4. Click on **B2B Capabilities** from the horizontal navigation bar.
5. Select the same set of B2B Capabilities for IBMGDS also.

Participant Connections

Define the participant connection between Partner One (IBMGDS) and Partner Two (Transora):

1. Select **Account Admin** from the main menu and **Participant Connections** from the horizontal navigation bar.
2. From the **Source** drop down, select **IBMGDS**.
3. From the **Target** drop down, select **Transora**.
4. Click **Search**.
5. Click **Activate** for the connection with the following detail:
   Source:

   - Package: None (N\A)

   - Protocol: XML (ALL)

   - Document Flow: ALL (ALL)

   Target:

   - Package: AS (N\A)

   - Protocol: XML (ALL)

   - Document Flow: ALL (ALL)

Next, you define the participant connection between IBMGDS and Transora. This is an almost identical process to above apart from the configuration of AS2 attributes.

To define the participant connection between Partner Two and Partner One:

1. Select **Account Admin** from the main menu and **Participant Connections** from the horizontal navigation bar.
2. From the **Source** drop down, select **Partner two (Transora)**
3. From the **Target** drop down, select **IBMGDS**.
4. Click **Search**.
5. Click **Activate** for the connection with the following details:
   Source:

   - Package: AS (N\A)

   - Protocol: XML (ALL)

   - Document Flow: ALL (ALL)

   Target:

   - Package: None (N\A)

   - Protocol: XML (ALL)

   - Document Flow: ALL (ALL)

6. Click on the **Attributes** button next to Package: AS (N\A) box for Transora.
7. Edit the Package: AS (N\A) attributes by scrolling down the screen and clicking the icon beside Package: AS (N/A).
8. Enter a valid email-id in the **AS MDN E-Mail Address (AS1)** field. This can be any valid e-mail address and will not be used in other test scenarios.
9. Enter a value AS MDN HTTP URL (AS2) field This should be entered as follows: **http://IP_MACHINE_A:57080/bcgreceiver/submit (IP pointing to datapool)**
10. Click **Save**.

Security configuration

This section covers three areas of security in WebSphere Business Integration Connect:

- [Create Certificate](#)

- [Load Certificate](#)

Create Certificate

WebSphere Business Integration Connect provides a graphical tool, the IBM Key Management Tool (**ikeyman**) for managing keys and certificates.

To create a certificate:

1. Run the ikeyman application by opening the ikeyman.bat file from `<installed path>\IBM\WBIConnect\receiver\bin`
2. Open the receiver's default keystore, receiver.jks.

3. From the menu bar select **Key Database File Open**. On a default installation
    receiver.jks resides in: `<installed`
    `path>\IBM\WBIConnect\common\security\keystore directory.`
4. When prompted, enter the default password for receiver.jks. This password
    is WebAS.
5. Create a new self-signed certificate. Creating a self-signed personal certificate
    creates a public key within the server key store file.
    To create a new self-signed certificate:

    a. Click the **New Self-Signed…** button.
    b. Give the certificate a **Key Label** that is used to uniquely identify the
        certificate within the key store. Use the label selfSignedCert.
    c. Enter the server's **Common Name**. This is the primary, universal
        identity for the certificate. It should uniquely identify the principal that it
        represents.
    d. Enter the name of your **Organization**.
    e. Accept all other defaults and click **OK**.

Load Certificate

Load certificate from Partner Two (ie datapool, eg : **partnerTwoSSL.der or .cer)**
into the Hub Operator's profile as a Root Certificate. A Root Certificate is a
certificate issued from a Certifying Authority (CA) used when establishing a
certificate chain. As Express is effectively the CA in this scenario, the
downloaded certificate is loaded as a root certificate to allow Enterprise to
recognize and trust the sender.

To load the public certificate into Enterprise Edition:

1. From the main menu select **Account Admin** followed by **Community
    Participant**. Click **Search**.

2. Select **Partner Two** by clicking the icon.

3. Select **Certificates** from the horizontal navigation bar.

4. Select **Load Certificate**.

5. Select the check box beside **Encryption**.

6. Change the **Description** to read Partner Two Decrypt.

7. Set the status as **Enabled**. Click **Browse**.

8. Navigate to the directory in which the decryption certificate,
    partnerTwoDecrypt.der is stored. Select the certificate and click **Open**.

9. Leave the Gateway Type as Production, click **Upload**, and click **Save**.

Notices

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- Apache XMLBeans v1.0.3
- Apache Commons-JXPath v1.2
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