

*IBM CrossWorlds*  
WebSphere Business Integration for  
Retail Distribution



# Collaboration for UCCnet Item Synchronization

*Version 4.1*

**Note!**

Before using this information and the product it supports, be sure to read the general information under “Notices and Trademarks” on page 15.

**Second Edition (June 2002)**

This edition applies to Version 4, Release 1, Modification 0, of *IBM® CrossWorlds®* (5724-C12) and to all subsequent releases and modifications until otherwise indicated in new editions.

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# Collaboration for UCCnet Item Synchronization

**Note:** This product runs on IBM® CrossWorlds® 4.1 only.

The IBM CrossWorlds Collaboration for UCCnet Item Synchronization synchronizes item information in compliance with UCCnet standards. It is used to maintain the consistency of the supplier's item information in UCCnet and to ensure that the information is kept current with the most recent data in the supplier's application.

For a supplier to communicate new or changed information about its items to trading partners in UCCnet, the following must occur:

- The supplier must create or update the data for the items in UCCnet
- The new or updated items must be published to the subscribing trading partners in UCCnet

The IBM CrossWorlds Collaboration for UCCnet Item Synchronization accomplishes these tasks through a set of four component collaborations:

## **UCCnet\_ItemSync collaboration**

The UCCnet\_ItemSync collaboration performs processing to add, update, delist, or withdraw an item in response to events that occur in an Enterprise Resource Planning (ERP) application. A process flow is initiated in the collaboration when it receives a triggering business object, containing the data for the event, from a connector for the ERP application.

## **UCCnet\_requestWorklist collaboration**

The UCCnet\_requestWorklist collaboration sends query commands to UCCnet via the Trading Partner Interchange (TPI) connector and server. These requests obtain the notifications necessary for completing the communication initiated in the UCCnet\_ItemSync collaboration. The collaboration is triggered when it receives a UCCnetGBO\_envelope sample business object from the JTextRWL sample connector. The JTextRWL sample connector sends the triggering business object after it polls an input file folder on the IBM CrossWorlds InterChange Server (ICS) and discovers an XML message that contains a UCCnet worklist query command. (The mechanism by which the UCCnet worklist query command is placed in the input file folder is independent of the collaboration, and must be set up by the user.)

## **UCCnet\_processWorklist collaboration**

The UCCnet\_processWorklist collaboration processes the notifications that the UCCnet\_requestWorklist collaboration requested from UCCnet. It is triggered when it receives a UCCnetGBO\_envelope sample business object from the TPI connector.

## **Notify\_by\_eMail collaboration**

The Notify\_by\_eMail collaboration is used by the UCCnet\_processWorklist collaboration to pass communications to a configured e-mail address.

At the highest level, the collaboration sends business data it receives from an ERP application (typically a supplier) to the TPI connector. The TPI connector transforms the business objects into an XML format that can be handled by a TPI server. The TPI server then sends the data to UCCnet.

To synchronize critical information throughout the item life cycle, the following generic business objects are used:

#### **ItemBasic business object**

This business object is used by the UCCnet\_ItemSync collaboration, and contains data attributes that are common across all the logical organizations that use the item data. The UCCnet\_ItemSync collaboration is triggered when it receives this business object from an ERP application. The collaboration processes and validates the business object, then sends it on to the TPI connector. The TPI connector controller in the ICS invokes mapping of the generic ItemBasic business object to the application-specific UCCnet\_envelope business object. The TPI connector then invokes transformation of the UCCnet\_envelope business object into an XML document that can be handled by the TPI server before it is ultimately transmitted to UCCnet.

#### **UCCnetGBO\_envelope sample business object**

This sample business object is used as follows:

- The UCCnet\_requestWorklist collaboration uses this business object to exchange messages between the JTextRWL sample connector and the TPI connector. This sample connector is based on the JText connector.
- The UCCnet\_processWorklist collaboration uses this business object to exchange messages with the TPI connector. In addition, business objects derived from the UCCnetGBO\_envelope sample business object are exchanged between the UCCnet\_processWorklist collaboration and the Notify\_by\_eMail collaboration objects that are used in processing the worklist.

**Note:** Neither the generic UCCnetGBO\_envelope sample business object or the JTextRWL sample connector are installed with the default installation of the IBM CrossWorlds package, but are available through electronic download from the IBM CrossWorlds Exchange Web site.

In addition to these generic business objects, the processes performed by the Solution also require the use of the application-specific UCCnet\_envelope business object. The attributes of the UCCnet\_envelope business object and the UCCnetGBO\_envelope sample business object are the same except for their names. These two business objects are used together in situations where the architecture of the Solution may require a map even though the business objects contain the same attributes. When a UCCnet collaboration exchanges data with the TPI connector, the data is mapped between the generic business object used by the collaboration and the application-specific UCCnet\_envelope business object used by the TPI connector.

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## **Required documents**

To create and configure the IBM CrossWorlds Collaboration for UCCnet Item Synchronization, use the following documents:

- This document for collaboration-specific information about the IBM CrossWorlds Collaboration for UCCnet Item Synchronization.
- *IBM CrossWorlds Collaboration Development Guide* for general information about designing or modifying collaboration templates.
- *IBM CrossWorlds System Implementation Guide* for general information about configuring collaboration objects from collaboration templates.

- *IBM CrossWorlds UCCnet Solution: Operational Guide*, available at the IBM CrossWorlds Exchange Web site, for an overview of a sample solution using this collaboration and a description of the processing flows for performing synchronization.
- *IBM CrossWorlds UCCnet Solution: Installation and Configuration Guide*, available at the IBM CrossWorlds Exchange Web site, for instructions on setting up a sample solution.
- *IBM CrossWorlds Generic UCCnetGBO\_envelope Business Object* document, available at the IBM CrossWorlds Exchange Web site, for information on the structure of this sample business object.

## Collaboration setup

This section describes port bindings for configuring the component collaborations of the IBM CrossWorlds Collaboration for UCCnet Item Synchronization. The discussion of each component collaboration includes a diagram of the port bindings, followed by a table that provides the details for each port. For additional collaboration set-up information, see the *IBM CrossWorlds UCCnet Solution: Operational Guide*, available at the IBM CrossWorlds Exchange Web site.

**Note:** Because every port must be bound, bind all unused ports to the Port connector. Doing so indicates that the port is unused without causing the collaboration to provide additional functionality.

### Port information for the UCCnet\_ItemSync collaboration

The following graphic illustrates the UCCnet\_ItemSync collaboration's ports as they are displayed in the IBM CrossWorlds System Manager (CSM) or Process Designer. The ports are shown on the object UCCnet\_ItemSyncObjectx, which was created from the UCCnet\_ItemSync collaboration template.

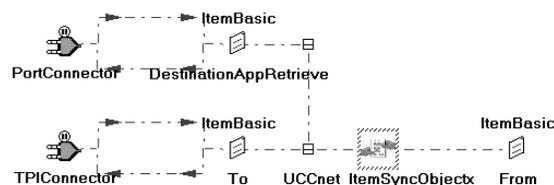


Table 1 provides information about each port. Use the ItemBasic business object for all ports for this collaboration.

Table 1. Port bindings for the UCCnet\_ItemSync collaboration

Port name	Bound to	Function	Verbs used
DestinationAppRetrieve	PortConnector	Unused.	None
From	Source application's connector	Receives the triggering ItemBasic business object.	Create Update

Table 1. Port bindings for the UCCnet\_ItemSync collaboration (continued)

Port name	Bound to	Function	Verbs used
To	TPICConnector	Passes the processed ItemBasic business object to the TPICConnector, which sends the data to the TPI server, which sends the command to UCCNet.	Create

## Port information for the UCCnet\_requestWorklist collaboration

The following graphic illustrates the UCCnet\_requestWorklist collaboration's ports as they are displayed in the IBM CrossWorlds System Manager (CSM) or Process Designer.

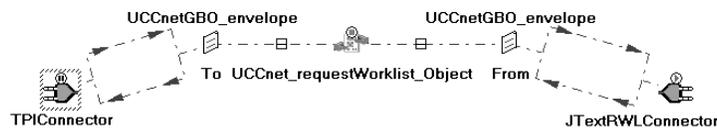


Table 2 provides information about each port. Use the UCCnetGBO\_envelope sample business object for all ports for this collaboration. Spaces have been inserted in some object names in the **Function** column to enable the entries to fit in the cells. The actual object names do not include spaces.

Table 2. Port bindings for the UCCnet\_requestWorklist collaboration

Port name	Bound to	Function	Verbs used
To	TPICConnector	Passes the processed UCCnetGBO_envelope sample business object to the TPICConnector, which transmits the data to the TPI server, which sends the command to UCCNet.	None
From	JTextRWLConnector	Receives the input UCCnetGBO_envelope sample business object.	Create

## Port information for the UCCnet\_processWorklist collaboration

The following graphic illustrates the UCCnet\_processWorklist collaboration's ports as they are displayed in the IBM CrossWorlds System Manager (CSM) or Process Designer. Bind the INITIAL\_ITEM\_LOAD\_REQUEST port, the ITEM\_ADD\_CHANGE port, the NEW\_ITEM\_PUBLICATION\_REQUEST port, and the From port to the TPI connector. Bind all the other ports to their respective Notify\_by\_eMail collaboration objects.

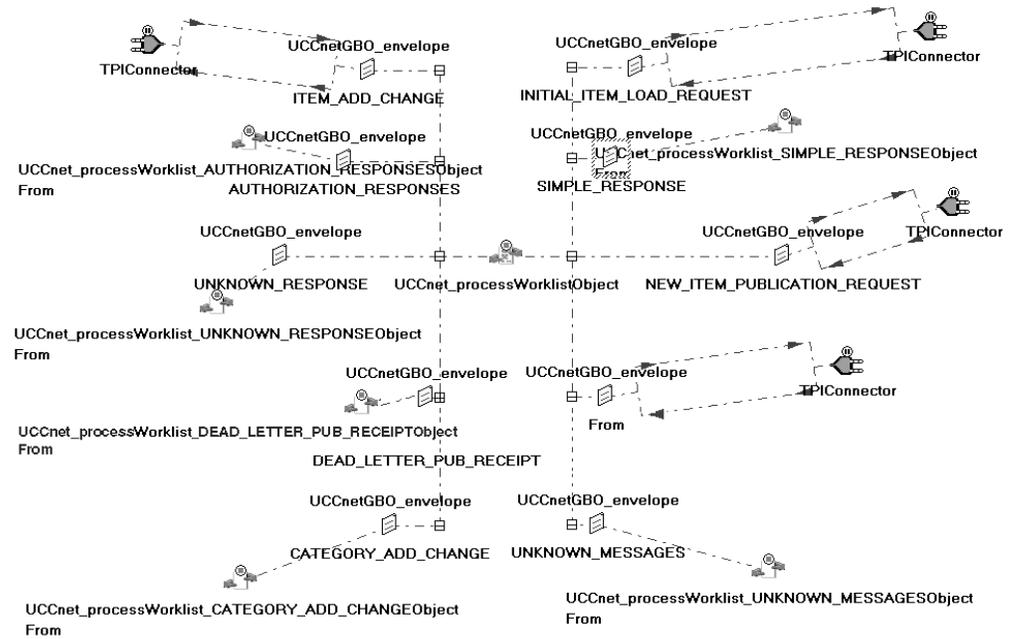


Table 3 provides information about each port. Use the UCCnetGBO\_envelope sample business object for all ports for this collaboration. Spaces have been inserted in some port names in the **Port name** column, in some object names in the **Bound to** column, and in the collaboration template names in the **Function** column to enable the entries to fit in the cells. The actual port, object, and collaboration template names do not include spaces.

Table 3. Port bindings for the UCCnet\_processWorklist collaboration

Port name	Bound to	Function	Verbs used
UNKNOWN_RESPONSE	UCCnet_processWorklist_UNKNOWN_RESPONSEObject	Based on the Notify_by_eMail collaboration template.	Create
NEW_ITEM_PUBLICATION_REQUEST	TPIConnector		Create
AUTHORIZATION_RESPONSES	UCCnet_processWorklist_AUTHORIZATION_RESPONSESObject	Based on the Notify_by_eMail collaboration template.	Create

Table 3. Port bindings for the UCCnet\_processWorklist collaboration (continued)

Port name	Bound to	Function	Verbs used
DEAD_LETTER_PUB_RECEIPT	UCCnet_processWorklist_DEAD_LETTER_PUB_RECEIPTObject	Based on the Notify_by_eMail collaboration template.	Create
From	TPICConnector		Create
ITEM_ADD_CHANGE	TPICConnector		Create
INITIAL_ITEM_LOAD_REQUEST	TPICConnector		Create
CATEGORY_ADD_CHANGE	UCCnet_processWorklist_CATEGORY_ADD_CHANGEObject	Based on the Notify_by_eMail collaboration template.	Create
UNKNOWN_MESSAGES	UCCnet_processWorklist_UNKNOWN_MESSAGESObject	Based on the Notify_by_eMail collaboration template.	Create
SIMPLE_RESPONSE	UCCnet_processWorklist_SIMPLE_RESPONSEObject	Based on the Notify_by_eMail collaboration template.	Create

## Port information for the Notify\_by\_eMail collaboration

The Notify\_by\_eMail collaboration template is used as a base to create multiple collaboration objects of various names. In this way, different e-mail headers can be attached for different business objects and different business objects can be targeted to different e-mail recipients. In the following graphic, a collaboration object called UCCnet\_processWorklist\_AUTHORIZATION\_RESPONSESObject is created. It is based on the Notify\_by\_eMail collaboration template.

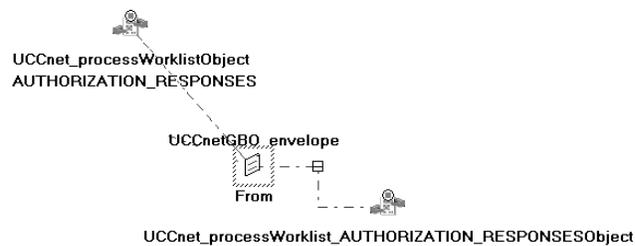


Table 4 on page 7 provides information about the port. Use the UCCnetGBO\_envelope sample business object for the port for this collaboration. Spaces have been inserted in the object name in the **Function** column to enable the entry to fit in the cell. The actual object name does not include spaces.

Table 4. Port bindings for the Notify\_by\_eMail collaboration

Port name	Bound to	Function	Verbs used
From	UCCnet_processWorklist collaboration object	A UCCnetGBO _envelope sample business object is passed in on this port. The business object is incorporated into an e-mail message and sent out to configured e-mail recipients.	Create

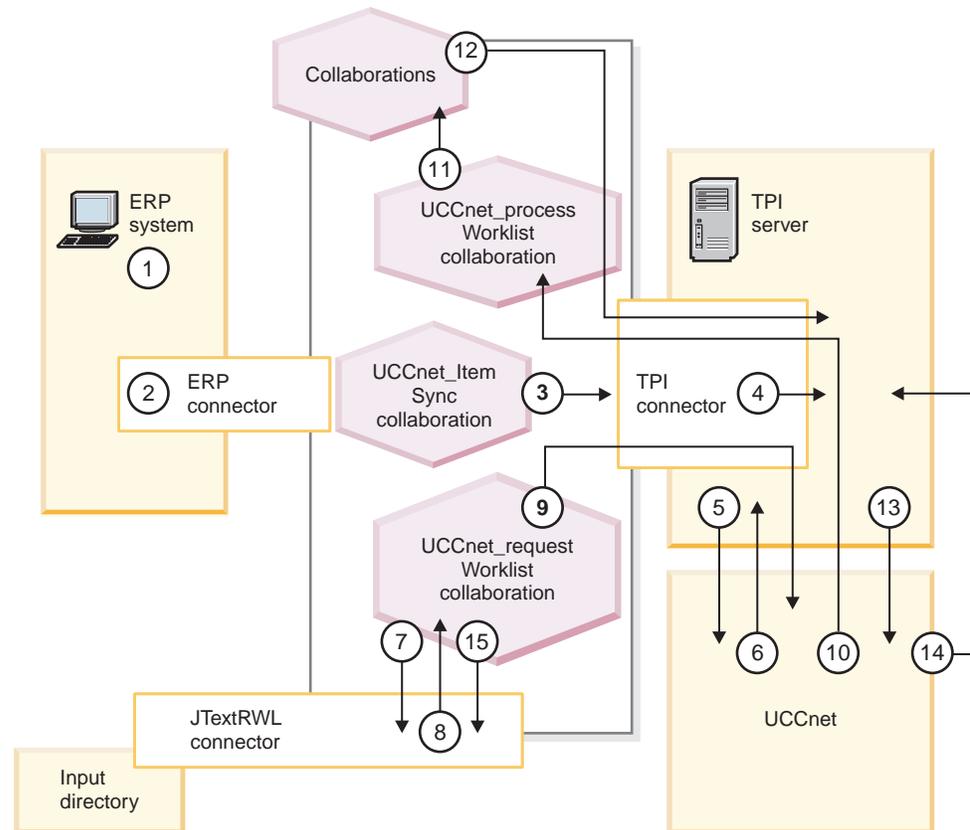
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## Synchronization process

The following graphic and the description following it show high-level components of the IBM CrossWorlds Collaboration for UCCnet Item Synchronization and how one of the possible business scenarios — the publication of a new item — is performed.

In this ItemAdd/ItemChange scenario, new item information is passed to UCCnet. The source of the flow is the creation of a new item (it could also be a change in an existing item) in the source ERP application. The end result of the flow processing is an ItemAdd (or an ItemChange) message that is received by UCCnet through the TPI connector.

The numbered steps in the graphic correspond to the description that follows. Spaces have been added to collaboration names in the graphic. Actual collaboration names do not include spaces.



1. A trigger from the ERP source provides the item (for example, an IDOC from SAP) to the IBM CrossWorlds ERP-specific connector.
2. The connector transforms the data into an application-specific business object, initiates mapping from the application-specific business object to the generic ItemBasic business object, and then passes the ItemBasic business object to the UCCnet\_ItemSync collaboration.
3. The UCCnet\_ItemSync collaboration delivers the ItemBasic business object to the TPI connector.
4. The TPI connector initiates mapping from the generic ItemBasic business object to the application-specific UCCnet\_envelope business object, builds a UCCnet ItemAdd XML document from the UCCnet\_envelope business object, and sends the ItemAdd document to the TPI server.
5. The TPI server uses the trading partner profile for UCCnet, creates the digest, encrypts, and transmits the ItemAdd document to UCCnet.
6. The Message Disposition Notification (MDN) is generated by UCCnet and returned to the TPI server.
7. The UCCnet\_requestWorklist collaboration uses the JTextRWL sample connector to poll a worklist directory on the IBM CrossWorlds InterChange Server for an XML message containing a response Item\_Add notification from UCCnet.

**Note:** The mechanism for populating the worklist directory is not part of the delivered product and must be customized.

8. When the JTextRWL sample connector finds an XML file in its input folder for events, it transforms and maps the message to a generic UCCnetGBO\_envelope business object, and delivers the business object to the UCCnet\_requestWorklist collaboration.

9. The UCCnet\_requestWorklist collaboration delivers the business object to the TPI connector. The TPI connector initiates mapping from the generic UCCnetGBO\_envelope sample business object to the application-specific UCCnet\_envelope business object, builds an XML document from the UCCnet\_envelope business object, and sends the XML document to the TPI server. The TPI server uses the trading partner profile for UCCnet, creates the digest, encrypts, and transmits the XML document to UCCnet.
10. UCCnet generates an MDN and returns this worklist response message to the TPI server. The TPI connector transforms the message into a UCCnet\_envelope business object, maps it to a UCCnetGBO\_envelope sample business object, which it then sends to the UCCnet\_processWorklist collaboration.
11. The UCCnet\_processWorklist collaboration processes the generic UCCnetGBO\_envelope sample business object. It identifies the business object as representing an ITEM\_ADD notification response. It is dispatched to the specific ITEM\_ADD\_CHANGE sub-collaboration.
12. This collaboration then sends a UCCnetGBO\_envelope sample business object for ItemPublicationAdd to the TPI connector. The TPI connector builds the UCCnet XML document from the UCCnet\_envelope business object and delivers this ItemPublication document to the TPI server.
13. The TPI server uses the trading partner profile for UCCnet, creates the digest, encrypts, and transmits the document to UCCnet.
14. The MDN is generated by UCCnet and returned to the TPI server.
15. The UCCnet\_requestWorklist collaboration sends another request for notifications.

Subsequently, a worklist will be delivered to the TPI server from UCCnet and will contain the notification (response) PUB\_RELEASE\_NEW\_ITEM. The response document is delivered to the TPI connector. The TPI connector transforms the message into a UCCnet\_envelope business object, maps it to a UCCnetGBO\_envelope business object, which it then sends to the UCCnet\_processWorklist collaboration. The collaboration optionally sends this response to a configured e-mail address.

As part of the request to publish, UCCnet will deliver notifications to the target set of retailer trading partners, in their worklists. These trading partners may respond with any of the following responses: AUTHORIZE, PEND\_PUBLICATION, REJECT\_PUBLICATION, PRE\_AUTHORIZATION, DE\_AUTHORIZATION. For details about these responses, see the *IBM CrossWorlds UCCnet Solution: Operational Guide*, available at the IBM CrossWorlds Exchange Web site.

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## Configuration properties

This section describes the properties of the component collaborations of the IBM CrossWorlds Collaboration for UCCnet Item Synchronization.

## Collaboration-specific properties for the UCCnet\_ItemSync collaboration

Table 5 documents configuration properties specific to this collaboration.

*Table 5. Configuration properties specific to the UCCnet\_ItemSync collaboration*

Property name	Property description	Required
GtinDB_USER	The user ID used to connect to the database containing the PROCESSED_GTIN table.	Yes
GtinDB_PASSWORD	The database password for the GtinDB_USER.	Yes
JDBC_DRIVER	The driver to connect to the database containing the PROCESSED_GTIN table.	It is required if the IBM CrossWorlds product does not register the driver in the Java™ Virtual Machine (JVM). The Microsoft® SQL driver, for example, is already registered in the JVM by the IBM CrossWorlds product and does not need to be specified here.
JDBC_URL	The JDBC URL corresponding to the JDBC_DRIVER specified.	Yes
SEND_EMAIL_TO	Defines the e-mail address to which problems detected during execution of the collaboration are sent. This entry is for IBM CrossWorlds administrators. Do not confuse this property with the 'Email notification address' field, which is configured from the Collaboration General Properties tab when creating a collaboration object.	No. Requires the EMail connector to run if e-mail is entered. Only one e-mail entry can be inserted at this time in this property. The SEND_EMAIL property needs to be set also.
SEND_EMAIL	This property dictates whether e-mail will be sent to the address set in SEND_EMAIL_TO.	Yes, if you want e-mail to be sent. To send e-mail, set it to the value "all." Otherwise, set it to the value "none."
AUDITLOG_INSTANCE_NAME	The Instance Name for the Audit Logger API call.	Yes
SUPPLIER_NAME	The name of the UCCnet partner issuing the ItemSync messages.	No

## Collaboration-specific properties for the UCCnet\_requestWorklist collaboration

Table 6 documents configuration properties specific to this collaboration. Spaces have been inserted in the URL in the **Property description** column to enable the entry to fit in the cell. The actual URL does not include spaces.

Table 6. Configuration properties specific to the UCCnet\_requestWorklist collaboration

Property name	Property description	Required
DTD_URL	<p>Sets the value for the DocType line in outgoing XML. The default value is:</p> <pre>DOCTYPE envelope SYSTEM http://www.uccnet.net/ xmlschema/2.0/Envelope.dtd</pre> <p>The default value must be changed if it is not correct for the environment to which the XML messages are being sent.</p>	Yes, if default is incorrect.
SET_UNIQUE_IDS	<p>Controls whether unique IDs (messageIdentifier and uniqueCreatorIdentification) are set in output XML messages. Possible values for this property are:</p> <ul style="list-style-type: none"> <li>• "ALL" (default value — set all three unique IDs)</li> <li>• "NONE"</li> <li>• "BLANK" (set unique ID only if it is blank in the input)</li> </ul>	No, unless default needs to be changed.

## Collaboration-specific properties for the UCCnet\_processWorklist collaboration

Table 7 documents configuration properties specific to this collaboration. Spaces have been inserted in the URL in the **Property description** column to enable the entry to fit in the cell. The actual URL does not include spaces.

Table 7. Configuration properties specific to the UCCnet\_processWorklist collaboration

Property name	Property description	Required
DB_USER	The IBM CrossWorlds database user. The default value is: crossworlds	Yes
DB_PASSWORD	The IBM CrossWorlds database password. The default value is: admin	Yes

Table 7. Configuration properties specific to the UCCnet\_processWorklist collaboration (continued)

Property name	Property description	Required
JDBC_DRIVER	The driver to connect to the database containing the Gtin table.	It is required if the IBM CrossWorlds product does not register the driver in the JVM. The Microsoft SQL driver, for example, is already registered in the JVM by the IBM CrossWorlds product and does not need to be specified here.
JDBC_URL	The JDBC URL corresponding to the JDBC_DRIVER specified.	Yes
SEND_EMAIL_TO	Defines the e-mail address to which problems detected during execution of the collaboration are sent. This entry is for IBM CrossWorlds administrators. Do not confuse this property with the 'Email notification address' field, which is configured from the Collaboration General Properties tab when creating a collaboration object.	No
AUDITLOG_INSTANCE_NAME	The Instance Name for the Audit Logger API call.	Yes
SUPPLIER_NAME	The name of the UCCnet partner issuing the ItemSync messages.	No
DTD_URL	Sets the value for the DocType line in outgoing XML. The default value is:  DOCTYPE envelope SYSTEM http://www.uccnet.net/ xmlschema/2.0/Envelope.dtd  The default value must be changed if it is not correct for the environment to which the XML messages are being sent.	Yes, if default is incorrect.
AUTO_RESPOND	Controls whether an automatic response is sent out to UCCnet. The default value is: YES	No, unless default needs to be changed.

## Collaboration-specific properties for the Notify\_by\_eMail collaboration

Table 8 documents configuration properties specific to this collaboration. Spaces have been inserted in some entries in the **Property name** and **Property description** columns to enable the entries to fit in the cells. The actual entries do not include spaces.

Table 8. Configuration properties specific to the Notify\_by\_eMail collaboration

Property name	Property description	Required
EMAIL_NOTIFICATION_RCPTS	E-mail address of the recipients.	Yes
EMAIL_SUBJECT	<p>Subject line of the e-mail. Type text using the following escape codes:</p> <ul style="list-style-type: none"> <li>• <code>\${getRoot}</code> the entire Business Object</li> <li>• <code>\${getDate}</code> the current Date/Time</li> <li>• <code>\${getName}</code> the Business Object Name</li> <li>• <code>\${getVerb}</code> the Business Object Verb</li> <li>• <code>\${attribute}</code> a specific attribute</li> </ul> <p>If the first character of the string is an '@', then the collaboration will load the text from a filename following the '@' sign.</p> <p>Here is a sample EMAIL_SUBJECT property value for a UCCnet_processWorklist_AUTHORIZATION_RESPONSES Object:Notify_by_eMail collaboration object. This collaboration object is based on the Notify_by_eMail collaboration template and is bound to the corresponding port on the UCCnet_processWorklist collaboration object.</p> <p>CrossWorlds Notification AUTHORIZATION_RESPONSES: \${getName}.\${getVerb} - topic=\${TLO.body.body_Wrapper1[0].response.acknowledge.acknowledgement.subdocumentValid[0].subdocumentValid[0].resultList.resultList_Wrapper1[0].notification.topic}</p>	Yes

Table 8. Configuration properties specific to the Notify\_by\_eMail collaboration (continued)

Property name	Property description	Required
EMAIL_MESSAGE	<p>Body of the e-mail. The processing of this field uses the same escape codes as the EMAIL_SUBJECT property.</p> <p>In the following example, the first character of the string is an '@', so the collaboration will load the text from the filename following the '@' sign:</p> <pre>@c:\crossworlds\collaborations\ eMail\UCCnet_processWorklist _AUTHORIZATION_RESPONSES.mail</pre>	Yes

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## Viewing collaboration messages

To view an explanation of a collaboration's messages, invoke the Message Browser and open the collaboration's message file. To invoke Message Browser, do the following:

1. Select **Programs** in the **Start** menu.
2. Select **CrossWorlds**.
3. Select **Server and Tools**.
4. Select **Message Browser**.

To open the collaboration message file from Message Browser, do the following:

1. From the **File** menu, select **Open**.
2. Use the **Look In** field to change the current folder to `\collaborations\messages\collaboration_name.txt`.

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## Implementation notes

For additional implementation information, see the following:

- *IBM CrossWorlds UCCnet Solution: Operational Guide*, available at the IBM CrossWorlds Exchange Web site.
- *IBM CrossWorlds UCCnet Solution: Installation and Configuration Guide*, available at the IBM CrossWorlds Exchange Web site.
- *IBM CrossWorlds Generic UCCnetGBO\_envelope Business Object* document, available at the IBM CrossWorlds Exchange Web site.

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