TIBCO BusinessConnect™ EDI Protocol powered by Instream®

Service Configuration

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TIBC⊘®

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Preface

TIBCO BusinessConnect™ EDI Protocol powered by Instream® is the TIBCO business-to-business (B2B) solution for transferring EDI documents between trading partners. This manual describes how to use the Service protocol.

Topics

Related Documentation

This section lists documentation resources you may find useful.

TIBCO BusinessConnect EDI Protocol powered by Instream Documentation

The following documents form the TIBCO BusinessConnect EDI Protocol powered by Instream documentation set:

- *TIBCO BusinessConnect EDI Protocol powered by Instream Installation* Read this manual to learn about installing and deploying TIBCO BusinessConnect EDI Protocol powered by Instream.

- *TIBCO BusinessConnect EDI Protocol powered by Instream User's Guide* Read this manual for instructions on using the product to configure all the EDI protocols.

- *TIBCO BusinessConnect EDI Protocol powered by Instream EDIFACT Configuration* Read this manual for instructions on configuring the EDIFACT protocol.

- *TIBCO BusinessConnect EDI Protocol powered by Instream Gateway Configuration* Read this manual for instructions on configuring the Gateway protocol.

- *TIBCO BusinessConnect EDI Protocol powered by Instream Service Configuration* Read this manual for instructions on configuring the Service protocol.

- *TIBCO BusinessConnect EDI Protocol powered by Instream TEXT Configuration* Read this manual for instructions on configuring the TEXT protocol.

- *TIBCO BusinessConnect EDI Protocol powered by Instream TRADACOMS Configuration* Read this manual for instructions on configuring the TRADACOMS protocol.

- *TIBCO BusinessConnect EDI Protocol powered by Instream X12 Configuration* Read this manual for instructions on configuring the X12 protocol.

- *TIBCO BusinessConnect EDI Protocol powered by Instream Release Notes* Read the release notes for a list of new and changed features. This document also contains lists of known issues and closed issues for this release.

Other TIBCO Product Documentation

You may find it useful to read the documentation for the following TIBCO products:

- TIBCO ActiveMatrix BusinessWorks™

- TIBCO ActiveMatrix BusinessWorks™ Plug-in for BusinessConnect™

- TIBCO Administrator™

- TIBCO BusinessConnect™

- TIBCO BusinessConnect™ Palette

- TIBCO Business Studio™

- TIBCO Designer™

Typographical Conventions

The following typographical conventions are used in this manual.

Table 1   General Typographical Conventions

Convention	Use
ENV_HOME *TIBCO_HOME*	TIBCO products are installed into an installation environment. A product installed into an installation environment does not access components in other installation environments. Incompatible products and multiple instances of the same product must be installed into different installation environments. An installation environment consists of the following properties: • **Name** Identifies the installation environment. This name is referenced in documentation as *ENV_NAME*. On Microsoft Windows, the name is appended to the name of Windows services created by the installer and is a component of the path to the product shortcut in the Windows **Start > All Programs** menu. • **Path** The folder into which the product is installed. This folder is referenced in documentation as *TIBCO_HOME*.
TIBEDI_HOME	*TIBCO BusinessConnect EDI Protocol powered by Instream* installs into a directory within a *TIBCO_HOME*. This directory is referenced in documentation as *TIBEDI_HOME*. The default value of *TIBEDI_HOME* depends on the operating system. For example, on Windows systems, the default value is C:\tibco\bc*version*\protocols\tibedi.
code font	Code font identifies commands, code examples, filenames, pathnames, and output displayed in a command window. For example: Use MyCommand to start the foo process.
bold code font	Bold code font is used in the following ways: • In procedures, to indicate what a user types. For example: Type **admin**. • In large code samples, to indicate the parts of the sample that are of particular interest. • In command syntax, to indicate the default parameter for a command. For example, if no parameter is specified, MyCommand is enabled: MyCommand [**enable**	disable]

Table 1   General Typographical Conventions (Cont'd)

Convention	Use
italic font	Italic font is used in the following ways: • To indicate a document title. For example: See *TIBCO BusinessConnect EDI Protocol powered by Instream Installation*. • To introduce new terms. For example: A portal page may contain several portlets. *Portlets* are mini-applications that run in a portal. • To indicate a variable in a command or code syntax that you must replace. For example: MyCommand *PathName*.
Key combinations	Key names separated by a plus sign indicate keys pressed simultaneously. For example: Ctrl+C. Key names separated by a comma and space indicate keys pressed one after the other. For example: Esc, Ctrl+Q.
	The note icon indicates information that is of special interest or importance, for example, an additional action required only in certain circumstances.
	The tip icon indicates an idea that could be useful, for example, a way to apply the information provided in the current section to achieve a specific result.
	The warning icon indicates the potential for a damaging situation, for example, data loss or corruption if certain steps are taken or not taken.

TIBCO Product Documentation and Support Services

For information about this product, you can read the documentation, contact TIBCO Support, or join TIBCO Community.

How to Access TIBCO Documentation

Documentation for TIBCO products is available on the TIBCO Product Documentation website mainly in the HTML and PDF formats.

The TIBCO Product Documentation website is updated frequently and is more current than any other documentation included with the product. To access the latest documentation, visit https://docs.tibco.com.

Documentation for TIBCO BusinessConnect EDI Protocol powered by Instream is available on the https://docs.tibco.com/products/tibco-businessconnect-edi-protocol-powered-by-instream Product Documentation page.

How to Contact TIBCO Support

You can contact TIBCO Support in the following ways:

*   For an overview of TIBCO Support, and information about getting started with TIBCO Support, visit http://www.tibco.com/services/support

*   For accessing the Support Knowledge Base and getting personalized content about products you are interested in, visit the TIBCO Support portal at https://support.tibco.com.

*   For creating a Support case, you must have a valid maintenance or support contract with TIBCO. You also need a user name and password to log in to https://support.tibco.com. If you do not have a user name, you can request one by clicking Register on the website.

How to Join TIBCO Community

TIBCO Community is the official channel for TIBCO customers, partners, and employee subject matter experts to share and access their collective experience. TIBCO Community offers access to Q&A forums, product wikis, and best practices. It also offers access to extensions, adapters, solution accelerators, and tools that extend and enable customers to gain full value from TIBCO products. In addition, users can submit and vote on feature requests from within the TIBCO Ideas Portal. For a free registration, go to https://community.tibco.com.

Chapter 1   **Service Overview**

This chapter explains the basics for using the Service protocol.

Topics

Product Overview

EDI (Electronic Data Interchange) is the exchange of information between trading partners where the information is formatted according to a set of common data format standards developed in the U.S. and Western Europe during the late 1970s. EDI standards describe the format of the data that is to be exchanged. These standards are independent of the transport.

The other EDI protocols contained in this software package (EDIFACT, X12, TEXT, TRADACOMS, and Gateway) offer a rich set of functions that cannot be altered by users.

Service Protocol

The Service protocol compliments the other EDI protocols by providing an inside view into how users can handle interactions and achieve their goals by providing their own service implementations for functionality that they can extend.

Service is a framework service provided for EDI to access information from BusinessConnect to aggregate information as required by their business. Since services can be implemented by end users, the design is flexible and open. It can be used by anyone, within the limits of TIBCO BusinessConnect.

The Service protocol supports only Notify operations. To learn how to define a new Notify operation and deploy it, see Defining a Notify Operation on page 21.

Message Flow in the Service Protocol

When a message is sent from a private process to TIBCO BusinessConnect using the Service protocol, the following interactions occur:

Figure 1   Message Flow in the Service Protocol

BW –   TIBCO ActiveMatrix BusinessWorks
AMX – TIBCO ActiveMatrix
BC –   TIBCO BusinessConnect

1. Messages invoked by the private process and the transport are decided by the private process communication, as defined in the deployment.

2. TIBCO BusinessConnect receives the invocation and audit logs the request as follows:

   — If no value in the serviceTP attribute is specified from the private process, the default Service trading partner serviceTP is used;

   — If no serviceHost value is specified in the private process, the configured defaultHost is used.

3. TIBCO BusinessConnect checks for the implemented class based on the operation definition and loads the class if successful. It uses reflection to invoke the constructor and calls the handleServiceRequest() method. Users of the implementation must meet the Requirements section for the implementing class.

4. The implementer completes the contract by populating the EDIServiceResponse object to be sent back to the private process.

5. TIBCO BusinessConnect logs the response and sends it to the private process as Initiator Response.

Requirements for Using the Service Protocol

The Service protocol requires that the service or operation be invoked from the private process.

Other requirements for using the protocol are as follows:

- The invoked service will be one of the operations defined or created by the user.

- The service does not invoke the MSH service, therefore there is no public transport invocation from TIBCO BusinessConnect.

- No validation of the request or response schemas is performed by TIBCO BusinessConnect. The user implementing the interface or service is responsible to make sure that XML is sent from the private process and that the response sent by the implementer is valid.

The Valid Email Addresses list is currently not used by the Service protocol.

Chapter 2   **Tutorial — Getting Started**

This chapter gives an overview of how to use the Service protocol to generate summary report for X12 transactions in the BusinessConnect audit tables.

You will learn how to prepare TIBCO BusinessConnect EDI Protocol powered by Instream, configure a private process to communicate with it, and run the tutorial.

Topics

Prerequisites

The example service which is examined in this tutorial is listed and explained in Daily Transaction Reports Summary Based on User's Criteria on page 33.

Before starting the tutorial, perform the following steps:

1. Install the following software packages:

    a. TIBCO BusinessConnect (Server)

    b. TIBCO BusinessConnect Palette or TIBCO ActiveMatrix BusinessWorks Plug-in for BusinessConnect

    c. TIBCO Foresight® Instream® Standard Edition

    d. TIBCO Foresight® Translator Standard Edition

    e. TIBCO BusinessConnect EDI Protocol powered by Instream

2. If you are unfamiliar with Service, read Chapter 1, Service Overview, on page 1.

3. Review *TIBCO BusinessConnect EDI Protocol powered by Instream User's Guide,* Chapter 3, "Exchanging Documents."

4. See *TIBCO BusinessConnect Interior Server Administration* and the *TIBCO BusinessConnect Trading Partner Administration* for complete information on setting up and running TIBCO BusinessConnect.

5. Activate TIBCO BusinessConnect EDI Protocol powered by Instream

For this tutorial, users need to have existing X12 transactions in the TIBCO BusinessConnect audit tables.

Preparing the Protocol

This section steps you through the activities you need to prepare TIBCO BusinessConnect EDI Protocol powered by Instream to communicate with the private process through the Service protocol.

Load the Operations and XSDs

This section describes how to load the operations and XSDs for the Service transactions. TIBCO BusinessConnect EDI Protocol powered by Instream contains a sample configuration file for this tutorial.

Import the configuration file into the operations editor as follows:

1. Click the **BusinessConnect > Operations Editor** link in the left panel.

2. Click **Import**.

3. Click **change**.

4. Click **Browse**.

5. Select *BC_HOME*\protocols\tibedi\samples\interfaces\Service.csx.

6. Click **Open**.

7. Click **OK**.

8. Supply your password (optional).

9. Click **Import**.

Prepare the File tibedi-service-examples.jar

1. Move the file tibedi-service-examples.jar from the directory *BC_HOME*\protocols\tibedi\samples\serviceProtocol to the directory *BC_HOME*\protocols\tibedi\lib.

2. Using TIBCO Administrator, select **Application Management > BusinessConnect > Configuration >** *machine name-deployment mode***.**

3. Click on the **Process Configuratio**n tab.

4. In the **Java** area, find the field Prepend to Classpath.

5. Type in the complete path and file name for the tibedi-service-examples.jar, such as **C:\tibco\bc***n*.*n***\protocols\ tibedi\lib\tibedi-service-examples.jar**

6. Click **Save**.

For more information about this procedure, see Deploying the New Notify Operation on page 24.

Set Up the Initiator Server

The Initiator server must be deployed and ready to run:

- Create the deployment configuration.

  See *TIBCO BusinessConnect Interior Server Administration* for information on deployment configurations.

- Deploy BusinessConnect and start the server.

Configuring Private Processes

This section describes how to configure private processes in the following ways:

- Configuring Private Processes in TIBCO Designer, page 9
- Configuring Private Processes in TIBCO Business Studio, page 13

Configuring Private Processes in TIBCO Designer

To configure private processes in TIBCO Designer:

1. Opening the TIBCO ActiveMatrix BusinessWorks Project, page 9
2. Configuring Connections to BusinessConnect, page 11

After you configured private processes in TIBCO Designer, you can check Summary Reporting Service, page 12.

Opening the TIBCO ActiveMatrix BusinessWorks Project

To open the example TIBCO ActiveMatrix BusinessWorks project in TIBCO Designer, perform the following steps:

1. Start TIBCO Designer.
2. Click **New empty project**.
3. In the Save Project dialog, click **Cancel**.
4. Select **Project > Import Full Project**.
5. Click the **ZIP Archive** tab.
6. Navigate to the *BC_HOME*\protocols\tibedi\samples\bw\Service- SummaryReporting directory.
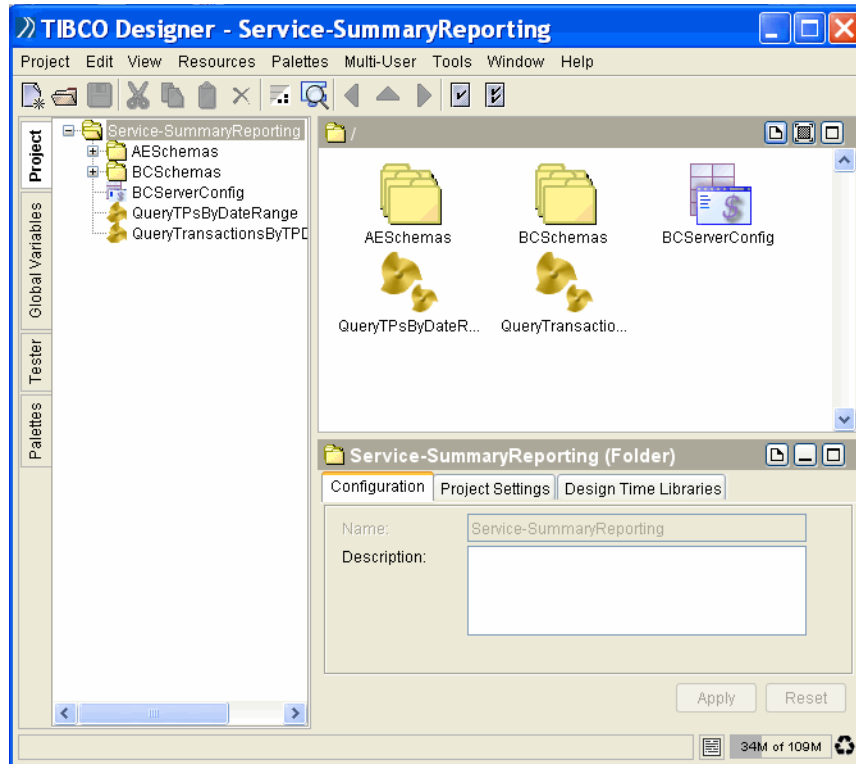7. Select Service-SummaryReporting.zip and click **Open**.
8. Click **OK**.

   The Import - Options dialog appears.
9. In the Options tab, select the **Try rename in case of name conflict** radio button.
10. Click **Apply**.
11. Select **Project > Save As**.
12. In the Project Directory file chooser, navigate to the *BC_HOME*\protocols\tibedi\samples\bw\Service-SummaryReporting directory.
13. Click **OK** twice.

14. When a dialog appears asking to use the directory as a project directory, click **Yes**. The zip archive file is deleted.

    Figure 2 shows the Service-SummaryReporting project.

Figure 2   TIBCO ActiveMatrix BusinessWorks Project

15. Click on the Global Variables tab. You will notice that the two XML files are expected to be written on your drive:

    outFileQueryTPByDate = "c:\temp\TPsByDateRange.xml"

    and

    outFileQueryTxnsByTPDateProtocol = "c:\temp\TransactionsByTPDateProtocol.xml"

    Be sure to open a directory C:\temp if you want to keep these settings.

    If you want to use another directory to post these files, substitute the desired directory path in these variables; for example, D:\testService.
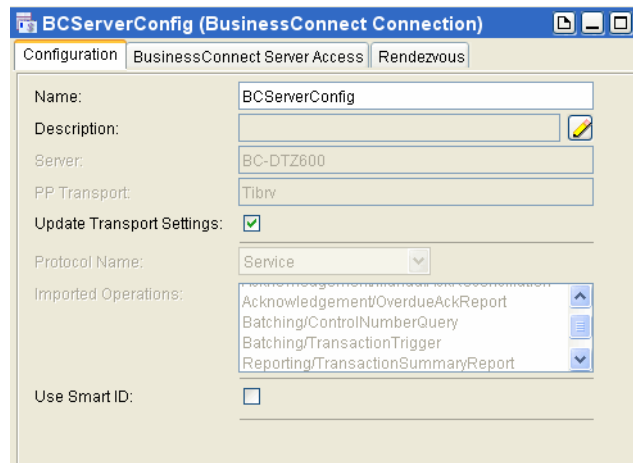
Make sure that the global variables activityDateHigher and activityDateLower are valid date entries, for which transactions exist in the BC_TRANSACTIONS table.

Configuring Connections to BusinessConnect

To configure connections to BusinessConnect, perform the following steps:

1. Click the **Project** tab.

2. Double-click **BCServerConfig**.

3. Click the **BusinessConnect Server Access** tab.

    a. Select the JDBC driver you use to communicate with the BusinessConnect configuration store from the **JDBC Driver Type** list.

    b. Type the URL for the configuration store in the **JDBC URL** field.

    c. Type the configuration store user name and password in the **DB User** and **DB Password** fields.

    d. Click the **Apply** button.

4. Click the **Configuration** tab.

5. Click the **Update from Configuration Store** button. If you chose TIBCO Rendezvous as the transport for private communication, the software displays a TIBCO Rendezvous tab.

6. Select **Service** from the **Protocol Name** list.

7. Click the **Import Selected Business Protocol** button. TIBCO ActiveMatrix BusinessWorks retrieves schema information from the BusinessConnect configuration store and puts it in the BCSchemas project folder.

Figure 3   BusinessConnect Server Access

8. Click **Apply**.

9. Click the Save icon to save the project.
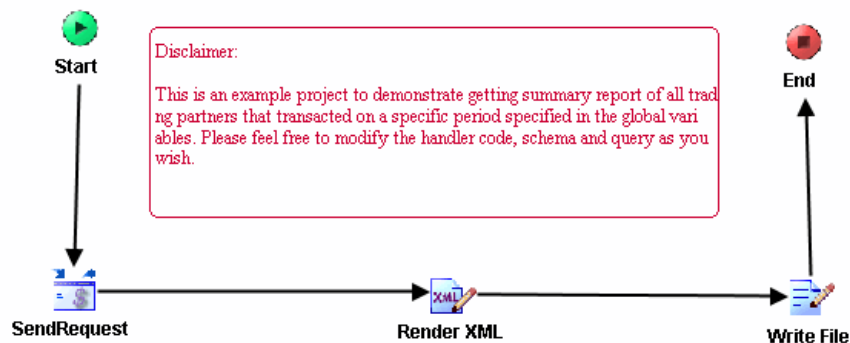
Summary Reporting Service

The Summary Reporting service project contains two processes: QueryTPsByDateRange and QueryTransactionsByTPDateProtocol.

QueryTPsByDateRange Process

We will look into the first process, which queries trading partners by date range.
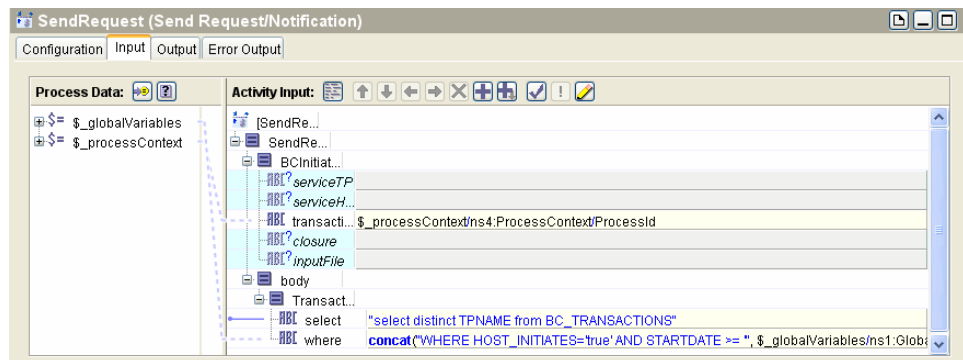
1. In the Project pane, double-click on **QueryTPsByDateRange**

2. The QueryTPsByDateRange service diagram appears.
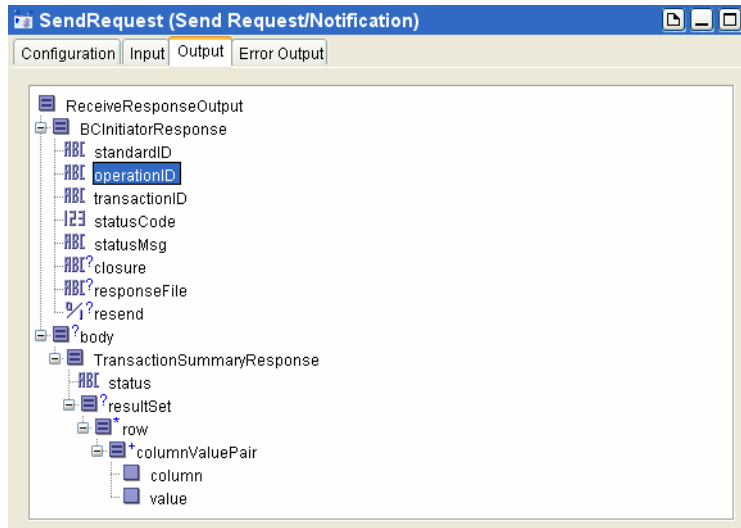
Figure 4   QueryTPsByDateRange

3. Click the **SendRequest** activity and the select the Input tab.

Figure 5   SendRequest (Send Request/Notification)

The Initiator Response activity is shown in Figure 6.

Figure 6   Receive Response Output

Configuring Private Processes in TIBCO Business Studio

To configure a private process in TIBCO Business Studio:

Opening the TIBCO ActiveMatrix BusinessWorks Project

To open the TIBCO ActiveMatrix BusinessWorks project in TIBCO Business Studio:

1. Start TIBCO Business Studio.

2. Click **File > Import**.

3. On the Import page, expand the **General** folder and select **Existing Studio Projects into Workspace**. Click **Next**.

4. Click **Browse** next to the **Select archive file** field to navigate to the *BC_HOME/*protocols/tibedi/samples/bw/Service-SummaryReporting directory, and select the Service-SummaryReporting_for_bw6.zip file. Click **Open**.

5. Click **Finish**.

After importing the sample, you also need to perform the following steps:

1. Expand **SummaryReporting > Module Descriptors** in the Project Explorer view.

2. Double-click **Module Properties**.

3. Change the default values of the properties according to your environment: activityDateHigher, activityDateLower, outFileQueryTPByDate, protocol, tpName, and outFileQueryTxnsByTPDateProtocol.

Configuring Connections to TIBCO BusinessConnect

To configure connections to TIBCO BusinessConnect:

1. In the Project Explorer view, expand **Resources** and double-click **BCConnection.bcResource**.

2. Click the **Server Access** tab.

3. Enter information as explained in step 3.

4. Click the **Configuration** tab, and click **Update from Configuration Store**.

5. Select **Service** from the **Protocol Name** list.

   If you select the **Select Operations** check box, you can select any of the configured/imported operations. For this tutorial, select all operations and click **OK**.

6. Click **Import Selected Business Protocol**.

   When you import the protocol, TIBCO ActiveMatrix BusinessWorks retrieves information from the TIBCO BusinessConnect configuration store and puts them in the project folder.

7. Click **Save**.

Running the Tutorial

> The steps of how to load and run private processes in TIBCO Business Studio are similar to TIBCO Designer. See TIBCO ActiveMatrix BusinessWorks Documentation for more details.
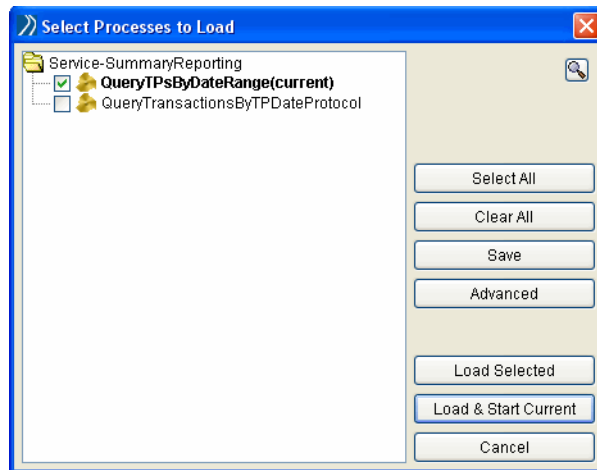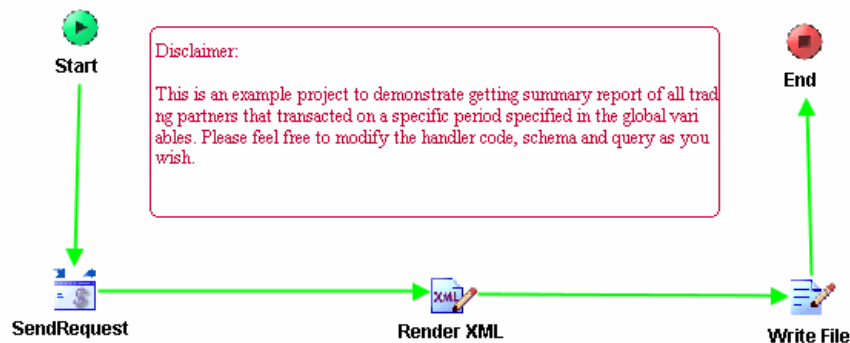
To run the process:

1. Click the **Tester** tab.

2. Click **Start testing viewed process** ▶ .

3. Select the check box next to **QueryTPsByDateRange (current)**.

Figure 7   Test Process QueryTPsByDateRange

4. Click **Load Selected**.

Figure 8   QueryTPsByDateRange Process Tested

5. The process QueryTPsByDateRange has been tested successfully and the file TPsByDateRange has been posted to the directory C:\temp.

Expected Results

After you run the tutorial, the file TPsByDateEange.xml will be posted to the designated directory (C:\TEMP).

It contains a transaction summary report, as follows:

```
<?xml version="1.0" encoding="UTF-8" ?>
- <TransactionSummaryResponse>
  <ns0:status xmlns:ns0="http://www.tibco.com/ns/ax/bc/EDI/ServiceProtocol/2008/01/schema">There are no records queried with the input provided.</ns0:status>
  </TransactionSummaryResponse>
```

Check the Audit Log

You can now check the audit log of the tested transaction:

1. Using TIBCO Administrator, select **BusinessConnect>Log Viewer**.
2. Click on the **Service** link.
3. Select items from the following lists: **Status**, **Connection**, and **Date Range**.
4. Click **Search**.

Figure 9   Transaction Summary Report Audit Log

5. To see the report details, click on the book icon next to the report.

6. In the Transaction Details window, select the check box Enable Detail View.

    The Transaction Details screen appears, showing the details of the first state of the transaction.

Figure 10   Transaction Details: 1

7. Click the icon next to the specific transaction to see more details.

Figure 11   Transaction Details: 2

Chapter 3 **Service Operations**

This chapter describes the Service operations.

Topics

Overview

The Service protocol supports only Notify operations.

To define a new Notify operation and deploy it with BusinessConnect, you need to follow these steps:

- Defining a Notify Operation on page 21
- Creating New Services Using the Java API on page 23
- Deploying the New Notify Operation on page 24

Once the new Notify operation is deployed, you can use it with TIBCO ActiveMatrix BusinessWorks as described in Using the Notify Operation in ActiveMatrix BusinessWorks on page 25.

Defining a Notify Operation

Using the operations editor, define a new Notify operation as follows:

Add a New Operations Group

1. Open the operations editor and click the **Service** protocol link.

2. Click on **New Operations Group** button.

3. Name the new operations group and add description (not required).

4. Click **Save**.

   The new operations group is now added in the operations editor.

Add a New Transaction

1. Select the radio button next to the group to which you are adding the new operation.

2. Click on **New Transaction** button.

3. Leave the Notification as the operation type.

4. Click **OK**.

   The Notification Transaction window opens, with two tabs: General and Schema.

General Tab

Name the new operation and add the description (not required).

Schema Tab

1. Configure the transaction using the information from Table 2.

Table 2   Notification Transaction Schema Fields

Field	Description
Request Schema (.xsd)	A valid schema, as defined by the user, can be uploaded to be used by the private process with ActiveMatrix BusinessWorks or any private process that can pull in this schema from the TIBCO BusinessConnect configuration store.
	To download a schema, click on change.
	You can add a file reference or download a file.

Table 2   Notification Transaction Schema Fields

Field	Description
Request Root Element Name	This is a text attribute with the root element of the request schema. No check is done by TIBCO BusinessConnect for the existence of this Root Element when the service is invoked.
Request Invocation Class Name	This text attribute is where the user enters the concrete class name of the interface IEDIServiceHandler. This concrete class has to be public with the no-arg default constructor.
Response Schema (.xsd)	A valid schema, as defined by the user, can be uploaded to be used by the private process with ActiveMatrix BusinessWorks or any private process that can pull in this schema from the TIBCO BusinessConnect configuration store. To download a schema, click on change. You can add a file reference or download a file.
Response Root Element Name	This is a text attribute with the root element of the response schema. No check is done by TIBCO BusinessConnect for the existence of this Root Element when the service is invoked.

2.   After entering the required data, click **Save**.

Creating New Services Using the Java API

To create a new service, you need to create a new operation with your own class under the service protocol. You need to define a fully constructed class name implementing the IEDIServiceHandler interface, which is a part of the Java API shipped with the Service protocol.

Follow these steps to implement the new service:

Task A   Create a class you wish to implement for a specific service

To do that, see *TIBCO BusinessConnect EDI Protocol powered by Instream API Reference*, Java API Reference.

Task B   Compile the class

Compile the selected class.

Task C   Place the compiled class in a specified directory

The new compiled class should be accessible by TIBCO BusinessConnect. Therefore, it has to be placed in the classpath defined in the .tra file, which is

>   *BC_HOME*/protocols/tibedi/lib/newClass.jar

Deploying the New Notify Operation

Before you can deploy the new operation, you need to point TIBCO BusinessConnect to the place where the new compiled class has been posted.

1. In TIBCO Administrator, select **Application Management > BusinessConnect > Configuration >** *machine name-deployment mode* **> Process Configuration.**

2. In the Java section, find the field Append to Classpath.

3. Type the full path of the location where the compiled new class has been posted:

   BC_HOME/protocols/tibedi/lib/*newClass*.jar

4. Click **Save**.

   If deploying multiple engines, add this class to the service instance for each engine.

5. In the Configuration Builder dialog, click **Deploy**.

Using the Notify Operation in ActiveMatrix BusinessWorks

The Notify operation defined in the TIBCO BusinessConnect configuration GUI can be used in ActiveMatrix BusinessWorks as a regular Initiator Request/Initiator Response service invocation with the SendRequest BusinessConnect plug-in activity.

The example TIBCO ActiveMatrix BusinessWorks project can be found at *BC_HOME*\protocols\tibedi\samples\bw\Service-SummaryReporting.

Follow the steps explained in the tutorial to use a service in ActiveMatrix BusinessWorks:

- Running the Tutorial on page 15

Appendix A **Provided Services**

This chapter briefly describes services that have been shipped with the Service protocol.

Topics

Services Overview

There are five services that have been shipped with the Service protocol: two embedded services and three sample service. The operations for these services can be imported from the file Service.csx located under *BC_HOME*\protocols\tibedi\samples\interfaces.

Sample TIBCO ActiveMatrix BusinessWorks projects for all these services are available under *BC_HOME*\protocols\tibedi\samples\bw.

Manual Acknowledgment Reconciliation Service

This service allows TIBCO ActiveMatrix BusinessWorks or a private process to reconcile transactions manually by sending the control numbers or of a Trading Partner to be reconciled. This service cannot be modified. See Manual Acknowledgment Reconciliation Service on page 29 for more details.

Transaction Trigger Service

This service is used to trigger the scheduled transactions that have not gone out and cannot be modified. See Transaction Trigger Service for more details.

Example Services

Three services are shipped as examples and include source, open schemas, and TIBCO ActiveMatrix BusinessWorks process implementing the public interface. They can be modified using the shipped interfaces.

The example services are:

- **Daily transaction reports summary based on user's criteria**   Gets a summary report of transactions that are processed based on criteria passed from TIBCO ActiveMatrix BusinessWorks. See Daily Transaction Reports Summary Based on User's Criteria on page 33 for more details.

- **Overdue reporting for non-acknowledged transaction**s   Used for getting reports on transactions that are not reconciled and have been waiting for acknowledgments. See Overdue Reporting for Non-Acknowledged Transactions on page 34 for more details.

- **Returning control numbers for batched transaction**s   Accepts the transmission ID and returns the interchange, group, or transaction control numbers associated with that batch. See Return Control Numbers for Batched Transactions on page 35 for more details.

Manual Acknowledgment Reconciliation Service

The Manual Acknowledgment Reconciliation service accepts control numbers or document IDs of a trading partner and reconciles the associated transactions. It can be used to manually reconcile transactions that have not yet been acknowledged by the trading partner based on offline agreement.

This service is embedded and should not be modified by the user.

What Is the Service Used For

The Manual Acknowledgment Reconciliation service can be used to manually reconcile the transactions that haven't been yet acknowledged from the trading partner based on some offline understanding.

It can either provide a mechanism to manually acknowledge transactions based on control numbers, or allow a specific transaction to be reconciled based on the document ID. In both cases, the trading partner name or the partner ID and the qualifier must be specified.

How the Service Works

Manual Acknowledgment of Transactions Based on Control Numbers

To manually acknowledge transactions based on control numbers, users can provide one of the following:

- **Interchange control number**   In this case, all transactions under all groups in that interchange will be acknowledged.

- **Interchange and group control numbers**   In this case, all transactions in that group and in that interchange will be acknowledged.

- **Interchange, group and transaction control numbers**   In this case, the specific transaction is acknowledged.

- **The interchange, group, transaction control numbers and operationID**   In this case, that specific transaction is acknowledged for that operationID. This will happen only in the case of exclusive batching based on an incremental interchange control number.

Audit status and description for each entry should be allowed to be sent as input.

Manual Acknowledgment of Transactions Based on Document ID

To manually acknowledge transactions based on a document ID, users need to provide this parameter.

The request XML can contain either the control numbers or the . The response contains a status field, which states if a transaction was successfully reconciled or not.

Transaction Trigger Service

The Transaction Trigger service is used to provide a mechanism to trigger any scheduled transaction in the queue. This service accepts a transmissionID and protocol, or a and protocol, and sends a queued batch or a scheduled transaction.

This service is embedded and should not be modified by the user.

What Is the Service Used For

The Transaction Trigger service can be used for triggering the following:

- Any queued batch

- Any particular transaction in a queued batch

- Any scheduled transaction that is not gone out

- Batches that are grouped based on the private process txnGroupingID.

  Since these batches are not processed by the scheduled task poller, this is one of the two mechanisms to send them out; the other way is to send this grouped batch from the Message Queue logs in the GUI.

How the Service Works

The Transaction Trigger service can be used to perform the following:

- Send the transmissionID and protocol to send a queued batch. If the operation is successful, it returns the transmissionID and protocol along with the status.

- Send the document ID and protocol to send a scheduled transaction or a single transaction in a batch. If the operation is successful, it returns the document ID and the protocol along with the status.

The protocol element is optional. If no protocol is given, all the transactions matching the request attribute, which is either the transmisionID or documetID, will be triggered.

When transmissionID is used as a request attribute to trigger, the protocol value has to be Gateway; when documentID is used as a request attribute to trigger, the corresponding protocol name has to be given.

The response returned for a Transaction Trigger service indicates the status, which shows whether the transaction has been triggered successfully or not.

The status in the response does not indicate the actual delivery of the message to the partner: if you want to check the transport delivery status of your transactions, use the audit log to check whether the transaction was delivered to the partner, or write your own user service to check the delivery status.

Batches with errors cannot be triggered.

Daily Transaction Reports Summary Based on User's Criteria

The Daily Transaction Reports Summary example service accepts an input SQL query and returns the results in the form of a generic output structure.

This example service is used for the tutorial. To learn more, see Chapter 2, Tutorial — Getting Started, on page 5.

What Is the Service Used For

The Daily Transaction Reports Summary example service allows users to modify the handlers and the schema at their own risk. It can be used for executing arbitrary SQL queries against the TIBCO BusinessConnect audit tables and building reports out of them.

How the Service Works

There are two TIBCO ActiveMatrix BusinessWorks processes shipped with this service for two usage scenarios: to get a list of distinct trading partners transacted between certain dates; or to get a list of transactions for a particular trading partner for the X12 protocol between certain dates (a list of summary rows).

To provide a mechanism for executing queries against the TIBCO BusinessConnect audit tables, the input SQL statement can be specified using the select and where arguments in the input schema. The query output is returned in a generic tabular structure defined by the response schema.

The top level result set element is a sequence of rows, where each row contains a set of column/value pairs:

- The column is the column name in the SQL query

- The value is the actual value for that column for that particular row

Overdue Reporting for Non-Acknowledged Transactions

TIBCO BusinessConnect EDI Protocol powered by Instream is reactive in informing the back-end process whether the acknowledgments arrived before expiring. The only way for users to find out is to log into the configuration GUI and check the **Audit Log for Pending Acknowledgements**. This is a human effort and cannot be automated.

The example service Overdue Reporting for Non-Acknowledged Transactions provides a way for users to automate from the back-end and synchronize with their systems on transactions that are overdue or will be overdue in the near future.

What Is the Service Used For

This service is used as follows:

- To report to business analysts on trading partners a delay in sending the acknowledgments, so that they can implement corrective measures

- To check the list of transactions that are overdue based on the number of days passed as the input from TIBCO ActiveMatrix BusinessWorks. The result is returned as a list of column ValuePairs.

- In conjunction with manual acknowledgment reconciliation, to get the overdue acknowledgments to be manually reconciled as either Accepted or Rejected.

How the Service Works

This service works as follows:

- Passes in the start and the end date for which a user wants to find out which X12 and EDIFACT transactions have not received acknowledgments; and returns TPName, transaction type, control numbers, Ack Status (Overdue, Pending, Error), record time, due time, and document ID.

Return Control Numbers for Batched Transactions

The example service Return Control Numbers for Batched Transactions accepts the transmission ID and returns the interchange, group, or transaction control numbers associated with that batch.

What Is the Service Used For

This service will be useful on the private process side, since in the case of batching the control numbers are generated by TIBCO BusinessConnect. The batch control numbers generated by BusinessConnect during batching are returned in a nested XML structure based on the input transmissionID.

This service defines a new operation in the Service Protocol - Batching/ ControlNumberQuery, which accepts the transmissionID and returns the interchange/group/transaction control numbers associated with that batch.

The example service Return Control Numbers for Batched Transactions allows users to modify the handler and/or schema at their own risk.

How the Service Works

This service works as follows:

- If the transmissionID is a valid batch ID, the interchange/group/transaction control numbers are returned in the response. A status field in the response indicates whether the query was successful.

- If the transmissionID is not a valid batch ID, only the status field is returned with a message.

The handler java class and the schemas are shipped as examples and are located in *BC_HOME*\protocols\tibedi\samples\bw\Service- BatchControlNumberQuery\BatchControlNumberQuery.zip.

Appendix B **Service AESchemas**

This appendix describes the InitiatorRequest and InitiatorResponse AESchemas for the Service protocol. These schemas are different than the other protocols in TIBCO BusinessConnect EDI Protocol powered by Instream.

Topics

InitiatorRequest AESchema

Table 3   InitiatorRequest AESchema

Attribute Name	Description	Usage
serviceTP	Used for audit logging operations under this trading partner. TIBCO BusinessConnect EDI Protocol powered by Instream ships with a configured internal trading partner called 'serviceTP'	If no value is provided, the internal trading partner 'serviceTP' is used for auditing. Otherwise, the value supplied is used.
serviceHost	This attribute is used for audit logging and grouping in the audit log by the host.	There is no pre-shipped inbuilt host. If this value is not provided, the default host is used. Otherwise, the populated value is used for auditing.
standardID	This attribute's value is always Service.	This field is mandatory and is always Service. It is used to indicate the protocol to look for.
operationID	Defines the Service operation that will be used for servicing the request.	Mandatory field that defines the operation defined in Service under Operations Editor.
transactionID	Unique transactionID provided from the private process to identify the service/operation to be invoked.	Mandatory field passed from the private process. It can be any value, and TIBCO BusinessConnect EDI Protocol powered by Instream does not check for uniqueness.
request	Used to send the service level information based on the user-defined schemas in the operation.	Conditionally optional field: if 'inputFile' is not specified, it becomes mandatory.
inputFile	Used to send the service-level information as a file reference based on the user-defined schema defined in the Service protocol in the Operations Editor.	Conditionally optional field that becomes mandatory if request node is not populated. This is passed as a fully qualified file name in the file system that exists.
closure	Used by the back-end private process to correlate the InitiatorRequest and the InitiatorResponse	Optional field to be used by the private process for correlation.

InitiatorResponse AESchema

Table 4   InitiatorResponse AESchema

Attribute Name	Description	Usage
standardID	This attribute's value is always Service.	This field is mandatory and is always Service. It is used to indicate the protocol to look for in BC EDI.
operationID	This attribute defines the Service operation that will be used for servicing the request.	Mandatory field that defines the operation defined in Service under Operations Editor.
transactionID	Unique transactionID provided from the private process to identify the service/operation to be invoked.	This is a mandatory field passed from the private process. It can be any value, and BC EDI does not check for uniqueness.
closure	Used by the back-end private process to correlate the InitiatorRequest and the InitiatorResponse	Optional field to be used by the private process for correlation.
statusCode	This attribute indicates to the private process whether the service operation was successful or not.	Integer field passed by the user implementation to the private process back-end. It can be used for correlating the back-end process success or failure to BusinessConnect by the user implementation.
statusMsg	Used to provide a meaningful readable status message that is also shown in the audit log description.	Mandatory field indicating a readable message in the audit log as well as in the InitiatorResponse. Users can have their own statusMessage populated from their implementation per operation.
resend	This field gets populated by BusinessConnect when the response is resent using the Resend Logs.	Optional field used to indicate whether this is a resend message.
response	Used to hold the operation level response returned after invocation. It corresponds to the Response schema defined in the operation for Service protocol.	This is an optional field. If there are system level errors such as "class not found" or "operation undefined", this attribute will not be populated.

Table 4   InitiatorResponse AESchema (Cont'd)

Attribute Name	Description	Usage
responseFile	Used to hold the operation level response in a file reference returned after invocation. The value in the file corresponds to the response schema defined in the operation for Service protocol.	This is an optional field populated only by user implementation. If there are system level errors such as "class not found" or "operation undefined", this attribute will not be populated.

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