TIBCO ActiveMatrix® Adapter for SAP (TIBCO Business Studio™) Examples

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TIBC○®

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Contents

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Product-Specific Documentation

Documentation for TIBCO products is not bundled with the software. Instead, it is available on the TIBCO Documentation site. To directly access documentation for this product, double-click the following file:

TIBCO_HOME/release_notes/TIB_adr3bs_*version_number*_docinfo.html

where *TIBCO_HOME* is the top-level directory in which TIBCO products are installed. On Windows, the default *TIBCO_HOME* is C:\Program Files\tibco. On UNIX systems, the default *TIBCO_HOME* is /opt/tibco.

The following documents for this product can be found on the TIBCO Documentation site:

- *TIBCO ActiveMatrix Adapter for SAP (TIBCO Business Studio) Installation*
- *TIBCO ActiveMatrix Adapter for SAP (TIBCO Business Studio) User's Guide*
- *TIBCO ActiveMatrix Adapter for SAP (TIBCO Business Studio) Examples*
- *TIBCO ActiveMatrix Adapter for SAP (TIBCO Business Studio) Release Notes*

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Examples Overview

TIBCO ActiveMatrix® Adapter for SAP (TIBCO Business Studio™) provides seven examples to show how the adapter interacts with the SAP system.

After installing TIBCO ActiveMatrix® Adapter for SAP, navigate to the `TIBCO_HOME`\adapter \adr3\\`version_number`\examples directory. You can find two example folders. The ActiveMatrix BusinessWorks 5 examples are in the **BusinessWorks5** folder. And the ActiveMatrix BusinessWorks 6 examples are in the **BusinessWorks6** folder.

Because TIBCO Business Studio™ does not support the concatenation of strings and module properties, you have to check the module properties in the Module Properties editor when configuring the example. Ensure that the value of a module property is comprised of either strings or other module properties, but not the concatenation.

BusinessWorks 5 Examples

You can find the following examples in the **BusinessWorks5** folder:

- DynamicLogonExternalCommit

  This example shows how to use the dynamic logon and the Inbound BAPI transaction support features provided by the adapter.

- InboundIDocWithInboundBAPI

  This example shows how to use the Subscription Service and the Request-Response Service services.

- OutboundIDocWithRemoteTIDManager

  This example shows how to use the remote TIDmanagement and how to randomly use the Publication Service services in different adapter configurations.

- OutboundRFCWithInboundBAPI

  This example shows how to use the Request-Response Invocation Service and the Request-Response Service services.

- IDoc Format Publishing Mode

  This example shows how to use the adapter for sending and receiving IDocs without any significant mapping, and the usage of JMS properties for the Publication Service service and the IDoc confirmation.

- Salesforce

  - SalesforceOpportunityToSAPOrder

    This example shows how to set up communication between the SAP system and Salesforce.com by using the adapter.

    Both the **BusinessWorks5** folder and **BusinessWorks6** folder contain an example named as SalesforceOpportunityToSAPOrder. Although the names of the processes in the SalesforceOpportunityToSAPOrder examples are different, the configurations of the processes are same. Therefore, if you want to run the SalesforceOpportunityToSAPOrder example in TIBCO Business Studio, you can just import the SalesforceOpportunityToSAPOrder example in the **BusinessWorks6** folder.

The examples in the **BusinessWorks5** folder are created in TIBCO Designer™. If you want to run these examples in TIBCO Business Studio, first you have to migrate the example projects into TIBCO Business Studio. See Migrating an Example to TIBCO Business Studio for more details.

BusinessWorks 6 Example

You can find the following example in the **BusinessWorks6** folder:

• Salesforce

    – SalesforceOpportunityToSAPOrder

       This example shows how to set up communication between the SAP system and Salesforce.com by using the adapter.

The example in the **BusinessWorks6** folder is created in TIBCO Business Studio. Before running this example, first you have to import the example project into TIBCO Business Studio. See Importing an Example to TIBCO Business Studio for more details.

Prerequisites of Running Examples

Before running the examples, you have to install the required software, migrate or import the example projects, and start the EMS server and the adapter configuration.

Required Software

You have to install the required software to run the example projects.

The following are the required software:

- TIBCO Enterprise Message Service™
- TIBCO Runtime Agent™
- TIBCO ActiveMatrix Adapter for SAP
- TIBCO ActiveMatrix BusinessWorks™
- TIBCO ActiveMatrix® Adapter Framework
- TIBCO® Enterprise Administrator

  TIBCO Enterprise Administrator is required only when you want to manage and monitor examples at run time.

- TIBCO ActiveMatrix BusinessWorks™ Plug-in for Salesforce.com

  TIBCO ActiveMatrix BusinessWorks Plug-in for Salesforce.com is required for the

  SalesforceOpportunityToSAPOrder example and the version must be 6.1.0 or later.

For details about the supported version of the software, see `Readme` file.

Migrating an Example to TIBCO Business Studio

To run an ActiveMatrix BusinessWorks 5 example project in TIBCO Business Studio, first you have to migrate the example project to TIBCO Business Studio.
The example file is in the `TIBCO_HOME\adapter\adr3\version_number\examples \BusinessWorks5\Example_Name` directory.

Prerequisites

Ensure that you have extracted the BusinessWorks 5 example zip file.

Procedure

1. In TIBCO Business Studio, choose one of the following two ways to open the BusinessWorks Migration Tool dialog:

   - From the menu, click **Project** > **Migrate BW Projects**.
   - From the menu, click **File** > **Import**. In the Import wizard, select **Migrate BW Projects** > **Migrate BW Projects**, and then click **Next**.

2. In the BusinessWorks Migration Tool dialog, click **Browse** next to the **BusinessWorks 5 Projects Folder** field to select the ActiveMatrix BusinessWorks 5 example folder containing the example project that you want to migrate.

3. Click **Browse** next to the **Migrated Projects Folder** field to select a directory where you want to stored the migrated project.

4. In the BusinessWorks 5 Projects panel, click the project that you want to migrate.

5. Click **Migrate** to start the migration process.

6. After the migration is finished, click **Close**.

Result

The migrated example project is displayed in the Project Explorer view.

Importing an Example to TIBCO Business Studio

To run an ActiveMatrix BusinessWorks 6 example project, first you have to import the example project to TIBCO Business Studio.

The example file is in the `TIBCO_HOME\adapter\adr3\version_number\examples \BusinessWorks6\Salesforce\Example_Name` directory.

Procedure

1. From the menu, click **File** > **Import** to open the Import wizard.

2. Select **General** > **Existing Studio Projects into Workspace**, and then click **Next**.

3. In the Import Projects dialog, click **Select archive file**.

4. Click **Browse** next to the **Select archive file** field to select the ActiveMatrix BusinessWorks 6 example zip file containing the example project that you want to import.

5. Click **Finish**.

Result

The imported example project is displayed in the Project Explorer view.

Starting the EMS Server

All of the examples use the JMS transport type. Before starting the adapter configuration, you have to start the TIBCO Enterprise Message Service server.

Start the EMS server in one of the following ways:

- On Microsoft Windows, click **Start** > **All Programs** > **TIBCO** > *TIBCO_HOME* > **TIBCO EMS [*version_number*]** > **Start EMS Server**

- On UNIX, complete the following steps:

  1. On the command line, navigate to the `TIBCO_HOME/ems/version_number/bin` directory.

  2. Enter the following command: `./tibemsd64 -config ~/TIBCO_HOME/tibco/cfgmgmt/ems/ data/tibemsd.conf`

Starting an Adapter Configuration

Before running an example project, you have to start the adapter configuration in the example project to enable data exchange between the adapter and the SAP system.

Prerequisites

Ensure that you have configured the example project accordingly.

Procedure

1. From the menu, click **Run** > **Run Configurations** to open the Run Configuration window.

2. Double-click **Adapter Launcher** to create an adapter launcher to run the adapter configuration.

3. In the **Adapter Configuration** tab, click **Browse** next to the **Adapter Configuration** field to select the adapter configuration in the example project.

   After you select the adapter configuration, the adapter launcher name displayed in the **Name** field is changed to *Project_Name-AdapterConfiguration_Name*.

4. Optional: Click **Browse** next to the **Working Directory** field to select a new directory to store the runtime information and support files.

   The default directory is *Work_Space*/.metadata/.plugins/com.tibco.adr3.ui.

5. If you want to store the configuration information in this adapter launcher, click **Apply**.

6. Click **Run** to start the adapter configuration.

Dynamic Logon and External Commit

The DynamicLogonExternalCommit example shows how to use the dynamic logon and the inbound BAPI transaction support features provided by the adapter.

This example contains two processes, Create-SalesOrder and Create-SaleOrder-with-Auto-Commit.

Both of the processes are configured with the Request-Response Service services. When running the processes, the adapter creates a dynamic connection to create sales orders in the SAP system.

The adapter packages the `Create_SalesOrder_Send_Template.xml` file in the *TIBCO_HOME*\adapter \adr3*version_number*\examples\BusinessWorks5\DynamicLogonExternalCommit directory. The `Create_SalesOrder_Send_Template.xml` file contains the input data of these two processes.

The adapter invokes the BAPI_SALESORDER_CREATEFROMDAT1 function module to create a sales order in the SAP system based on the input data in the `Create_SalesOrder_Send_Template.xml` file.

If an error occurs when the adapter invokes the BAPI_SALESORDER_CREATEFROMDAT1 function module, the error is written to the `OrderStatus.xml` file.

However, these two processes use different function models and mechanisms to commit and roll back a sales order in the SAP system:

- In the Create-SalesOrder process, if the adapter fails to create a sales order, the adapter invokes the BAPI_TRANSACTION_ROLLBACK function module to roll back the sales order.

  Otherwise, the adapter invokes the BAPI_TRANSACTION_COMMIT function module to commit the created sales order.

- In the Create-SaleOrder-with-Auto-Commit process, if the adapter fails to create a sales order, the sales order is automatically rolled back without the invocation of any function module.

  Otherwise, the BAPI_TRANSACTION_COMMIT function module is automatically invoked to commit the created sales order.

Configuring the Example

After migrating the example project to TIBCO Business Studio, you have to configure the project to ensure that the adapter can access to the SAP system.

Prerequisites

Ensure that you have migrated the example project to TIBCO Business Studio and started the EMS server.

Procedure

1. In the Project Explorer view, expand **DynamicLogonExternalCommit** > **Module Descriptors**, and then double-click the **Module Properties** resource.

2. In the Module Properties editor, enter values for the following properties:

   - `UDConnection\AppServer`

   - `UDConnection\Client`

   - `UDConnection\ConnectionType`

   - `UDConnection\GroupName`

   - `UDConnection\Language`

   - `UDConnection\MsgServer`

- `UDConnection\Password`
- `UDConnection\SNC_lib`
- `UDConnection\SNC_mode`
- `UDConnection\SNC_partnername`
- `UDConnection\SNC_qop`
- `UDConnection\SNC_bSSO`
- `UDConnection\SNC_ssoSend`
- `UDConnection\SNC_x509`
- `UDConnection\SystemName`
- `UDConnection\SystemNumber`
- `UDConnection\UserName`
- `JMSProviderUrl`
- `ASAP_HOME`

  `ASAP_HOME` is the home directory where you install the adapter. For example, `E:\TIBCO_HOME\adapter\adr3\7.2`.

- `ASAP_HOME-1`

3. Click **Save**.

4. In the Adapter for SAP Configuration editor, click **Test Connection** in the Default Client Connection panel to validate the connection.

Running the Example

After configuring the example project, you can run the processes in the example project to see how to use the dynamic logon and the inbound BAPI transaction support features provided by the adapter.

Prerequisites

Ensure that you have configured the example project and started the adapter configuration.

Procedure

1. From the menu, click **Run** > **Run Configurations** to open the Run Configuration window.

2. Double-click **BusinessWorks Application** to create an application launcher to run the processes in the project.

3. In the **Applications** tab, keep the example project application selected and deselect the other applications.

4. If you want to store the configuration information in this application launcher, specify a unique name for it in the **Name** field and click **Apply**.

5. Click **Run**.

6. Navigate to the `TIBCO_HOME\adapter\adr3\version_number\examples\BusinessWorks5\DynamicLogonExternalCommit` directory and update the `Create_SalesOrder_Send_Template.xml` file.

Expected Results

You can view the example results in the *TIBCO_HOME*\adapter\adr3*version_number*\examples\BusinessWorks5\DynamicLogonWithExternalCommit directory.

When the process is finished, all the results of creating a sales order are written to the output file named OrderStatus.xml. If the process is successful, you can also check the sales order information in the SAP system.

You can also check the symbolic destination of the active connection in the SAP server or check the adapter log file to get the dynamic connection result.

The log file is located in the *TIBCO_HOME*\adapter\adr3*version_number*\logs directory.

Inbound IDoc with Inbound BAPI

The InboundIDocWithInboundBAPI example shows how to use the Subscription and the Request-Response Service services.

This example contains the Vendor process.

Once you update the `VendorInputFile.xml` file, the Vendor process is triggered. The Request-Response Service service invokes the BAPI_GL_ACC_EXISTENCECHECK functional module to validate the G/L account in the `VendorInputFile.xml` file.

You can find the `VendorInputFile.xml` file in the *TIBCO_HOME*`\adapter\adr3\`*version_number*`\examples\BusinessWorks5\InboundIDocWithInboundBAPI` directory.

If the G/L account in the `VendorInputFile.xml` file is valid, the Vendor process publishes a message to the adapter to create a vender based on the information in the `VendorInputFile.xml` file. Once the Subscription Service service receives the message as a CREMAS05 IDoc, the CREMAS05 IDoc is used to create a vendor in the SAP system.

If the G/L account is invalid, an error message is written to the output file.

Configuring the Example

After migrating the example project to TIBCO Business Studio, you have to configure the project to ensure that the adapter can access to the SAP system.

Prerequisites

Ensure that you have migrated the example project to TIBCO Business Studio and started the EMS server.

Procedure

1. In the Project Explorer view, expand **InboundIDocWithInboundBAPI** > **Module Descriptors**, and then double-click the **Module Properties** resource.

2. In the Module Properties editor, enter values for the following properties:

   - `AppServer`
   - `Client`
   - `GatewayService`
   - `Password`
   - `SystemNumber`
   - `UserName`
   - `JMSProviderUrl`
   - `GatwayHost`
   - `ProgramID`
   - `ASAP_HOME`

     `ASAP_HOME` is the home directory where you install the adapter. For example, `E:\TIBCO_HOME\adapter\adr3\7.2`.

   - `ASAP_HOME-1`

3. Click **Save**.

4. If you want to enable the TIDManagement for the adapter configuration, change the inbound TIDManagement mode in the **Advanced** tab of the Adapter for SAP Configuration editor.

   > Ensure that the TIDManager clients in the adapter configuration matches the TIDManager server in the TIDManager configuration, when you select the remote TIDManagement mode.

5. In the Adapter for SAP Configuration editor, click **Test Connection** in the Default Client Connection panel to validate the connection.

Running the Example

After configuring the example project, you can run the processes in the example project to see how to use the Subscription Service and the Request-Response Service services.

Prerequisites

Ensure that you have configured the example project and started the adapter configuration. Beside this, you also have to add the name space, InboundIDocWithInboundBAPII/VendorInputFile.xsd, to the VENDOR_INPUT root element in the `VendorInputFile.xml` file.

If you have configured the adapter configuration with the remote inbound TIDManagement, you have to start the TIDManager configuration before starting the adapter configuration. The procedure to start a TIDManager configuration is the same as an adapter configuration.

Procedure

1. From the menu, click **Run** > **Run Configurations** to open the Run Configuration window.

2. Double-click **BusinessWorks Application** to create an application launcher to run the processes in the project.

3. In the **Applications** tab, keep the example project application selected and deselect the other applications.

4. If you want to store the configuration information in this application launcher, specify a unique name for it in the **Name** field and click **Apply**.

5. Click **Run**.

6. Navigate to the *TIBCO_HOME*\adapter\adr3*version_number*\examples \BusinessWorks5\InboundIDocWithInboundBAPI directory and update the `VendorInputFile.xml` file.

Expected Results

You can view the example results in the *TIBCO_HOME*\adapter\adr3*version_number*\examples \BusinessWorks5\InboundIDocWithInboundBAPI directory.

If the G/L account is valid, a vendor is created in the SAP system. You can check the vendor information in the SAP system.

If the G/L account is invalid, the error is written to the `error.xml` file.

Outbound IDoc with Remote TIDManager

The OutboundIDocWithRemoteTIDManager example shows how to use the remote TIDManagement mode and how to randomly use the Publication Service services in different adapter configurations.

This example contains the following three processes:

- CREMAS-Process Process

  Receives a message from the Publication Service service and saves the message containing SAP Vendor Master Data to an output file.

- DEBMAS-Process Process

  Receives a message from the Publication Service service and saves the message containing SAP Customer Master Data to an input file.

- MATMAS-Process Process

  Receives a message from the Publication Service service and saves the message containing SAP Material Master Data to an input file.

Configuring the Example

After migrating the example project to TIBCO Business Studio, you have to configure the project to ensure that the adapter can access to the SAP system.

Prerequisites

Ensure that you have migrated the example project to TIBCO Business Studio and started the EMS server.

Procedure

1. In the Project Explorer view, expand **OutboundIDocWithRemoteTIDManager** > **Module Descriptors**, and then double-click the **Module Properties** resource.

2. In the Module Properties editor, enter values for the following properties:

   - `AppServer`
   - `Client`
   - `GatewayService`
   - `Password`
   - `SystemNumber`
   - `UserName`
   - `JMSProviderUrl`
   - `GatewayHost`
   - `ProgramID`
   - `ASAP_HOME`

     `ASAP_HOME` is the home directory where you install the adapter. For example, `E:\TIBCO_HOME\adapter\adr3\7.2`.

3. Click **Save**.

4. In the Adapter for SAP Configuration editor, click **Test Connection** in the Default Client Connection panel to validate the connection.

Running the Example

After configuring the example project, you can run the processes in the example project to see how to use the remote TIDManagement and how to use the Publication Service service in multiple adapter configurations.

Prerequisites

Ensure that you have configured the example project and started the adapter configuration and the TIDManager configuration.

You have to start the TIDManager configuration before starting the adapter configuration. The procedure to start a TIDManager configuration is the same as an adapter configuration.

Procedure

1. From the menu, click **Run** > **Run Configurations** to open the Run Configuration window.

2. Double-click **BusinessWorks Application** to create an application launcher to run the processes in the project.

3. In the **Applications** tab, keep the example project application selected and deselect the other applications.

4. If you want to store the configuration information in this application launcher, specify a unique name for it in the **Name** field and click **Apply**.

5. Click **Run**.

6. To start the MATMAS process, log on to the SAP system, send a MATMAS01 IDoc using ALE/IDoc messaging, and execute the SAP transaction BD10.

7. To start the DEBMAS process, log on to the SAP system, send a DEBMAS01 IDoc using ALE/IDoc messaging, and execute the SAP transaction BD12.

8. To start the CREMAS process, log on to the SAP system, send a CREMAS01 IDoc using ALE/IDoc messaging, and execute the SAP transaction BD14.

Expected Results

You can find the example results in the `TIBCO_HOME`\adapter\adr3\`version_number`\examples \BusinessWorks5\OutboundIDocWithRemoteTIDManager directory.

The CREMAS`IDocNumber`.xml file that contains the Vendor Master Data is created, when the CREMAS-Process process is completed.

The DEBMAS`IDocNumber`.xml file that contains the Customer Master Data is created, when the DEBMAS-Process process is completed.

The MATMAS`IDocNumber`.xml file that contains the Material Master Data is created, when the MATMAS-Process process is completed.

Outbound RFC with Inbound BAPI

The OutboundRFCWithInboundBAPI example shows how to use the Request-Response Invocation Service and the Request-Response Service services.

This example contains two processes. The only difference between the two processes is that the Using-JMS process uses the JMS transport but the Using-RV process uses the Rendezvous transport.

The Using-JMS and the Using-RV processes receive an event from the SAP system by invoking the BAPI_XBP_EVENT_RAISE function module. The Request-Response Invocation Service service forwards this event to the Request-Response Service service.

- When the value of the `EVENTID` parameter in the incoming event is `CUSTOMER`, the adapter invokes the BAPI_CUSTOMER_GETDETAIL2 function module to check if the customer number provided for the EVENTPARAM parameter is valid.

  If the customer number is valid, the process writes the customer information to an output file. Otherwise, the Request-Response Invocation Service service receives an error message.

- When the value of the `EVENTID` parameter in the incoming event is `VENDOR`, the adapter invokes the BAPI_VENDOR_GETDETAIL function module to check if the customer number provided for the EVENTPARAM parameter is valid.

  If the customer number is valid, the process writes the customer information to an output file. Otherwise, the Request-Response Invocation Service service receives an error message.

Configuring the Example

After migrating the example project to TIBCO Business Studio, you have to configure the project to ensure that the adapter can access to the SAP system.

Prerequisites

Ensure that you have migrated the example project to TIBCO Business Studio and started the EMS server.

Procedure

1. In the Project Explorer view, expand **OutboundRFCWithInboundBAPI** > **Module Descriptors**, and then double-click the **Module Properties** resource.

2. In the Module Properties editor, enter values for the following properties:

   - `AppServer`
   - `Client`
   - `GatewayService`
   - `Password`
   - `GatewayHost`
   - `ProgramID`
   - `SystemNumber`
   - `UserName`
   - `JMSProviderUrl`
   - `ASAP_HOME`

ASAP_HOME is the home directory where you install the adapter. For example, `E:\TIBCO_HOME\adapter\adr3\7.2`.

3. Click **Save**.

4. In the Adapter for SAP Configuration editor, click **Test Connection** in the Default Client Connection panel to validate the connection.

Running the Example

After configuring the example project, you can run the processes in the example project to see how to use the Request-Response Invocation Service and the Request-Response Service services.

Prerequisites

Ensure that you have configured the example project and started the adapter configuration.

Procedure

1. From the menu, click **Run** > **Run Configurations** to open the Run Configuration window.

2. Double-click **BusinessWorks Application** to create an application launcher to run the processes in the project.

3. In the **Applications** tab, keep the example project application selected and deselect the other applications.

4. If you want to store the configuration information in this application launcher, specify a unique name for it in the **Name** field and click **Apply**.

5. Click **Run**.

6. Log on to the SAP system and execute the SAP transaction SE37.

7. Execute the BAPI_XBP_EVENT_RAISE function module.

8. Enter the RFC Destination based on the configuration in the project.

9. Configure the customer and vendor information according to events to be tested:
    a) To validate a customer master record, set the EVENTID parameter to CUSTOMER and enter a customer number for the EVENTPARAM parameter.
    b) To validate a vendor master record, set the EVENTID parameter to VENDOR and enter a vendor number for the EVENTPARAM parameter.
    c) To test an invalid event, enter a value for the EVENTID parameter that is neither CUSTOMER nor VENDOR.

Expected Results

You can view the example results in the *TIBCO_HOME*\adapter\adr3*version_number*\examples\BusinessWorks5\OutboundRFCWithInboundBAPI directory.

The vendor.xml file is created when the value of the EVENTID parameter is VENDOR.

The customer.xml file is created when the value of the EVENTID parameter is CUSTOMER.

The SAP system receives an error message when the value of the EVENTID parameter is neither VENDOR nor CUSTOMER.

IDocFormat Publishing Mode

The IDocFormatPublishingMode example shows how to use the adapter for sending and receiving IDocs without any significant mapping. This is useful in cases where there are systems or applications that understand the SAP IDoc format.

In addition to demonstrating the usage of the IDocFormat publish mode, this example also shows the usage of JMS properties for the Publication Service service and the IDoc confirmation for the Subscription Service service.

This example contains four processes, ReceiveIDocFromSAP, SendCREMASToSAP, SendDEBMASToSAP, WaitIDocConfirmation. The configurations of the SendCREMASToSAP and SendDEBMASToSAP processes are the same except for the IDoc type.

The ReceiveIDocFromSAP process is triggered when the Publication Service service publishes an IDoc from the SAP system. After the IDoc is received, it is written to the .idoc file. The adapter passes the control fields of IDocs as JMS properties. You can check the control fields in the JMS Application Properties resource.

The `SAPIDOC_MESTYP` property has been defined in the JMS Application Properties resource. You can also define the JMS properties that you want in this resource.

Then, the SendCREMASToSAP or SendDEBMASToSAP process is triggered. The received IDoc is published back to the SAP system.

Finally, the WaitIDocConfirmation process is triggered to wait for the IDoc confirmation message report after the Subscription Service service receives the IDoc.

Configuring the Example

After migrating the example project to TIBCO Business Studio, you have to configure the project to ensure that the adapter can access to the SAP system.

Prerequisites

Ensure that you have migrated the example project to TIBCO Business Studio and started the EMS server.

Procedure

1. In the Project Explorer view, expand **IDocFormatPublishingMode** > **Module Descriptors**, and then double-click the **Module Properties** resource.

2. In the Module Properties editor, enter values for the following properties:

   - `AppServer`
   - `Client`
   - `GatewayService`
   - `Password`
   - `GatewayHost`
   - `ProgramID`
   - `SystemNumber`
   - `UserName`
   - `ASAP_HOME`

ASAP_HOME is the home directory where you install the adapter. For example, `E:\TIBCO_HOME\adapter\adr3\7.2`.

3. Click **Save**.

4. In the Adapter for SAP Configuration editor, click **Test Connection** in the Default Client Connection panel to validate the connection.

5. In the ReceiveIDocFromSAP process, click the ReceiveIDocFromSAP activity.

6. In the **General** tab, click 🔍 next to the **Adapter Service** field to select a Publication Service service according to the IDoc type.

7. Click **Save**.

Running the Example

After configuring the example project, you can run the processes in the example project to see how to send IDocs in the IDocFormat publish mode and pass control fields of IDoc as JMS properties.

Prerequisites

Ensure that you have configured the example project and started the adapter configuration.

Procedure

1. From the menu, click **Run** > **Run Configurations** to open the Run Configuration window.

2. Double-click **BusinessWorks Application** to create an application launcher to run the processes in the project.

3. In the **Applications** tab, keep the example project application selected and deselect the other applications.

4. If you want to store the configuration information in this application launcher, specify a unique name for it in the **Name** field and click **Apply**.

5. Click **Run**.

6. Log on to the SAP system and publish a DEBMAS01 IDoc or a CREMAS01 IDoc.

Expected Results

You can view the example results in the `TIBCO_HOME\adapter\adr3\version_number\examples\BusinessWorks5\IDocFormatPublishingMode` directory.

When the IDoc confirmation report message from the SAP system is received, the message is written to the `idoc_confirmation.txt` file.

The IDoc published from the SAP system is also written to the `debmas.idoc` or `cremas.idoc` file. The following figure is a `debmas.idoc` file example.

```
EDI_DC40  8000000000001514337731 3012  DEBMAS01
DEBMAS                                          SAPDE2    LS
T90CLNT090
A000000061LS  ZLIZ
20160127232930
20160127232929
E2KNA1M005
80000000000015143370000010000000100500000003443
000000000000    HITE0
0001  US                    Computer Specialists, Inc.
NEW YORK                          NEW YORK
10101     NY            COMPUTER    E
444 North Park Ave
0000000001
0000     0000000000                      0
3306120101                                    00X
EN
E2KNVVM007
80000000000015143370000020000010200530001000    1  101US0010
100FOBNew York                    9  X 02          10
USD    ZB0130003013000
0.0 0.0              0
E2KNVPM002
80000000000015143370000030000020300 5AG0000003443
000
E2KNVPM002
80000000000015143370000040000020300 5RE0000003443
000
E2KNVPM002
80000000000015143370000050000020300 5RG0000003443
000
E2KNVPM002
80000000000015143370000060000020300 5WE0000003443
000
```

Salesforce Opportunity to SAP Order

The SalesforceOpportunityToSAPOrder example shows how to set up communication between the SAP system and Salesforce.com by using the adapter.

- SyncOpportunity_OutboundListener and SyncOpportunityProcess processes

  The workflow action is triggered to send outbound messages to the SyncOpportunity_OutboundListener process when you create a record of the Opportunity object with the stage of Closed Won or edit a record of the Opportunity object by setting the stage to `Closed Won` in Salesforce.com.

  After the SyncOpportunity_OutboundListener process receives the messages, the SyncOpportunityProcess processes is triggered. The adapter invokes the BAPI_SALESORDER_CREATEFROMDAT1 function module to create a sales order in the SAP system based on the outbound messages. In the the BusinessWorks 5 example, when an error occurs in the invocation, this error is written to the `OrderStatus.xml` file. In the BusinessWorks 6 example, there is no output for the invocation error.

  If the adapter configuration fails to create the sales order, the adapter invokes the BAPI_TRANSACTION_ROLLBACK function module to roll back the sales order.

  Otherwise, the adapter invokes BAPI_TRANSACTION_COMMIT function module to commit the created sales order. Then update the opportunity object in Salesforce.com with the sales order number.

- UpdateOpportunityFromSAPDelivery process

  This process is triggered when the Publication Service service named as DELVERY05Publisher publishes a DESADV IDoc containing the Opportunity ID. This process updates the Opportunity object in Salesforce.com with the SAP delivery number as the tracking number.

Configuring the Example

After importing the example project to TIBCO Business Studio, you have to configure the project to ensure that the adapter can access to the SAP system and Salesforce.com.

Prerequisites

Ensure that you have imported the example project to TIBCO Business Studio, and started the EMS server.

Procedure

1. In the Project Explorer view, expand **SalesforceOpportunityToSAPOrder** > **Module Descriptors** or **salesforce_opportunity_to_sap_orderProject** > **Module Descriptors**, and then double-click the **Module Properties** resource.

2. In the Module Properties editor, enter values for the following properties:

   - `SAPAppServer`
   - `SAPClient`
   - `GatewayService`
   - `SAPPassword`
   - `SAPGatewayHost`
   - `SAPProgramID`

- SAPSystemNumber

- SAPUserName

- salesforce_password

- salesforce_username

- SAPOrderFile

- ASAP_HOME

  ASAP_HOME is the home directory where you install the adapter. For example, `E:\TIBCO_HOME\adapter\adr3\7.2`.

3. Click **Save**.

4. In the Adapter for SAP Configuration editor, click **Test Connection** in the Default Client Connection panel to validate the connection.

Running the Example

After configuring the example project, you can run the processes in the example project to see how to set up communication between the SAP system and Salesforce.com by using the adapter.

Prerequisites

Ensure that you have configured the example project and started the adapter configuration.

Procedure

1. From the menu, click **Run** > **Run Configurations** to open the Run Configuration window.

2. Double-click **BusinessWorks Application** to create an application launcher to run the processes in the project.

3. In the **Applications** tab, keep the example project application selected and deselect the other applications.

4. If you want to store the configuration information in this application launcher, specify a unique name for it in the **Name** field and click **Apply**.

5. Click **Run**.

6. To start the SyncOpportunity_OutboundListener process, create a record of the a Opportunity object with the stage of Closed Won or edit a record of the a Opportunity object by setting the stage to `Closed Won`.

7. To start the UpdateOpportunityFromSAPDelivery process, publish a DESADV05 IDoc, after creating a delivery of a sales order in the SAP system. You can create the delivery in the SAP system either by executing SAP transaction VL01N and referencing the sales order or by executing the SAP Delivery Due List report.

Expected Results

The processes in the SalesforceOpportunityToSAPOrder example project do not generate any output files.

You can refresh Salesforce.com to check the sales order number or the the tracking number, when the processes are finished.