Event Replicator for Adabas

Adabas Replication Service for webMethods Integration Server

Version 10.7

October 2021

ADABAS & NATURAL

This document applies to Event Replicator for Adabas Version 10.7 and all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Preface

This document provides information about the Adabas Replication Service for webMethods Integration Server (ARS). It is organized as follows:

General Information	Contains general information about the Adabas Replication Service for webMethods Integration Server and how it works.
Installation	Contains installation information.
License	Provides licensing information.
Configuration - Integration Server	Describes configuration required in the webMethods Integration Server.
Configuration - EntireX Adapter	Describes configuration required in the webMethods EntireX Adapter and how to establish and manage connections.
Using the Adabas Replication Wizard	Describes how to establish and manage listener definitions using the Adabas Replication Wizard.
Create Document Type from Adabas File	Describes how to create document types from an Adabas file.
Using the Software AG Designer	Describes how to use the Software AG Designer to view and edit objects generated with the Adabas Replication Wizard.
Common Usage Scenarios	Common usage scenarios with the Adabas Replication Service.
Common Deployment Scenarios	Common deployment scenarios with the Adabas Replication Service.

1 About this Documentation

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Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
`Monospace font`	Identifies service names and locations in the format *`folder.subfolder.service`*, APIs, Java classes, methods, properties.
`Italic`	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
`Monospace font`	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
|	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the | symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

Online Information and Support

Software AG Documentation Website

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Software AG Empower Product Support Website

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Once you have an account, you can open Support Incidents online via the eService section of Empower at **https://empower.softwareag.com/**.

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To submit feature/enhancement requests, get information about product availability, and download products, go to **Products**.

To get information about fixes and to read early warnings, technical papers, and knowledge base articles, go to the **Knowledge Center**.

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- Use the online discussion forums, moderated by Software AG professionals, to ask questions, discuss best practices, and learn how other customers are using Software AG technology.
- Link to external websites that discuss open standards and web technology.

Data Protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

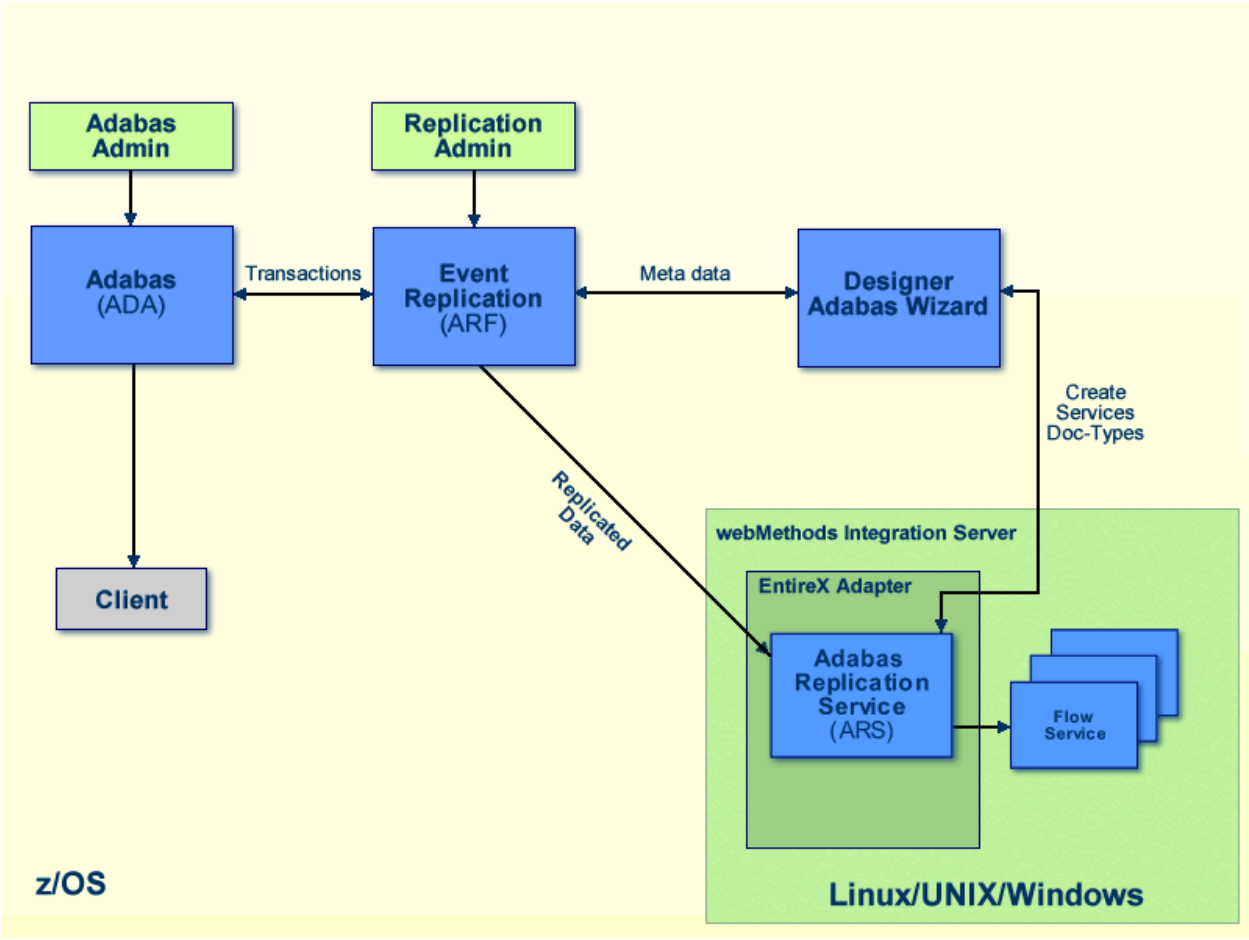
2 General Information

The purpose of sending changed data to the webMethods Integration Server is to be able to process data and store it in the final destination. Very often, only a subset of the changed data is required in the target system, or the changes are used as triggers for reading and processing data that is taken from the database - based on the changes that happened.

With this release an optimized data replication from Adabas on mainframe to webMethods Integration Server is available. The solution is called Adabas Replication Service for webMethods Integration Server (ARS) and is based on the EntireX Adapter running in the context of the Integration Server but bypassing the Event Replicator Target Adapter (ART).

The EntireX Adapter receives the changed data and converts it to the iData format used in the Integration Server context. The converted data is available to a service which can be enhanced to process the data to the required needs.

From this point on, the licensed Integration Server functionality is available and can be used to process the data. A new user interface is available to read the metadata from the Event Replicator Server on the mainframe and create document types to be used in the services.



This documentation only describes the Replication functionality for the EntireX Adapter. For details concerning the EntireX Adapter itself, refer to the documentation of this product.

About webMethods Integration Server

webMethods Integration Server is a run-time server that provides an environment for the orderly, efficient, and secure, execution of services. It supports the integration of diverse services and facilitates communication between systems. Integration Server decodes client requests, identifies the requested services, invokes the services, passes data to them in the expected format, encodes the output produced by the services, and returns output to the clients. Additionally, Integration Server authenticates clients, verifies that they are authorized to execute the requested service, maintains audit-trail logs, and promotes throughput using facilities such as service results caching.

3 Installation

To use the Adabas Replication Service for webMethods Integration Server, the following products must be installed:

- webMethods Integration Server 10.3 or above.

  Note: webMethods Integration Server is not part of the Adabas Replication Service for webMethods Integration Server package and requires a separate licensing.

- webMethods EntireX Adapter 10.3 or above.

To develop your own Integration Service services using the Software AG Designer the following products/components must be installed along with the Software AG Designer:

- Adabas Event Replicator 10.3 or above.
- Service Development 10.3 or above.

4 License

To use the Adabas Replication Service for webMethods Integration Server a separate license is required. The license file can be maintained in the **License Information** node of the EntireX Adapter.

5 Configuration - Integration Server

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- Enable Autostart of EntireX Adapter 13

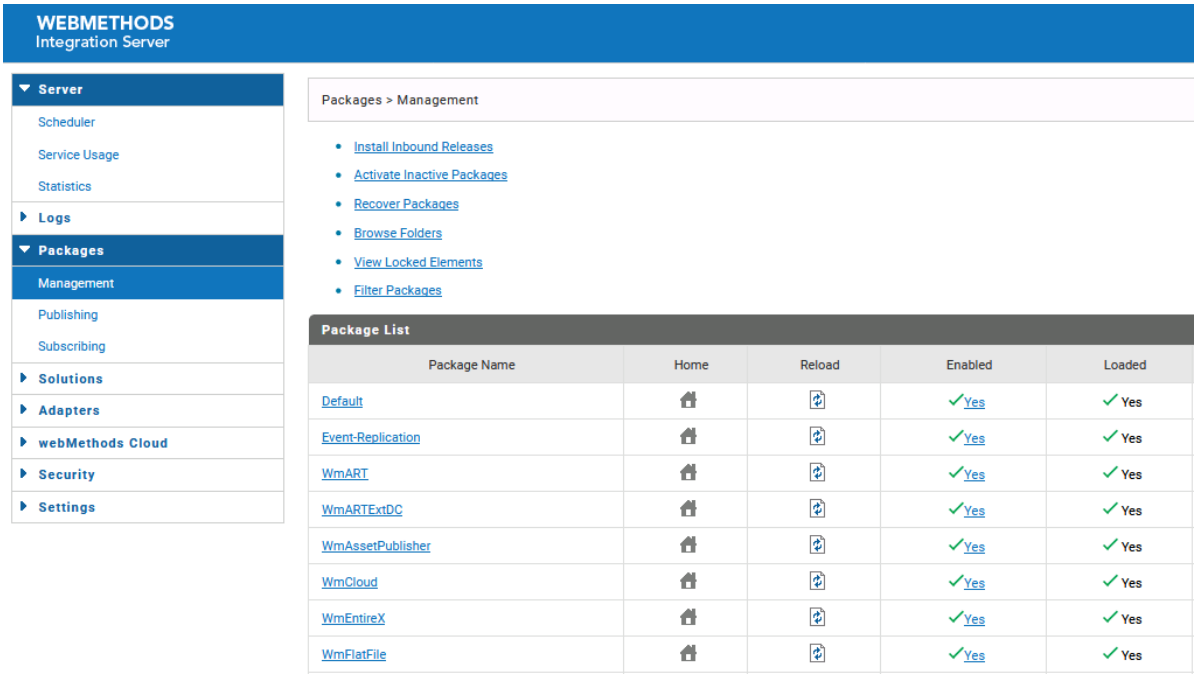
This section provides information on the basic configuration steps required on the webMethods Integration Server in order to use the Adabas Replication Service for webMethods Integration Server.

Packages

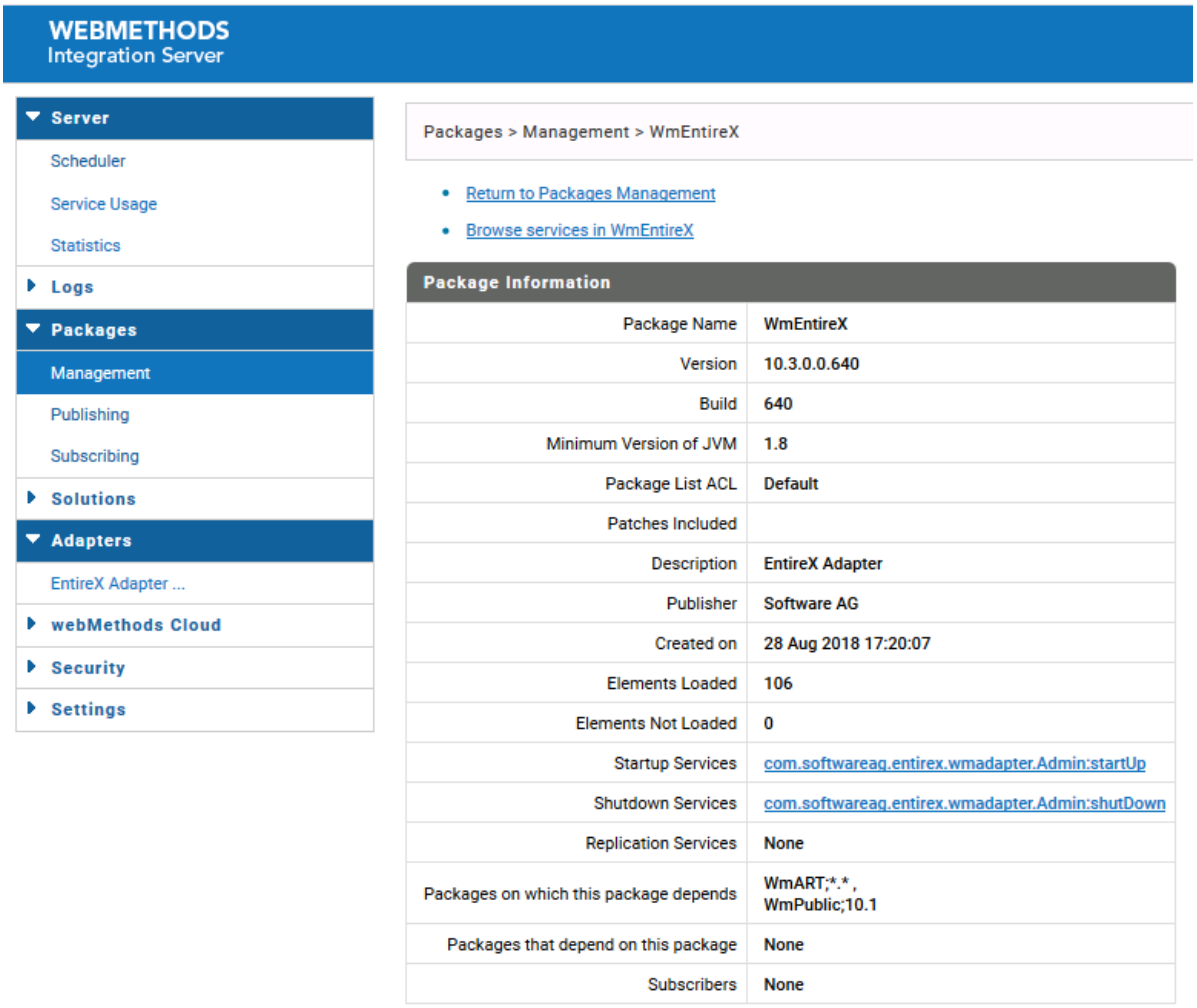
Before you begin, ensure that the EntireX Adapter package is available on the webMethods Integration Server.

To ensure that the EntireX Adapter package is available on the webMethods Integration Server

1 In the webMethods Integration Server Administration interface go to **Packages > Management**.



2 Click on **WmEntireX** for details. A screen similar to the following should be displayed:



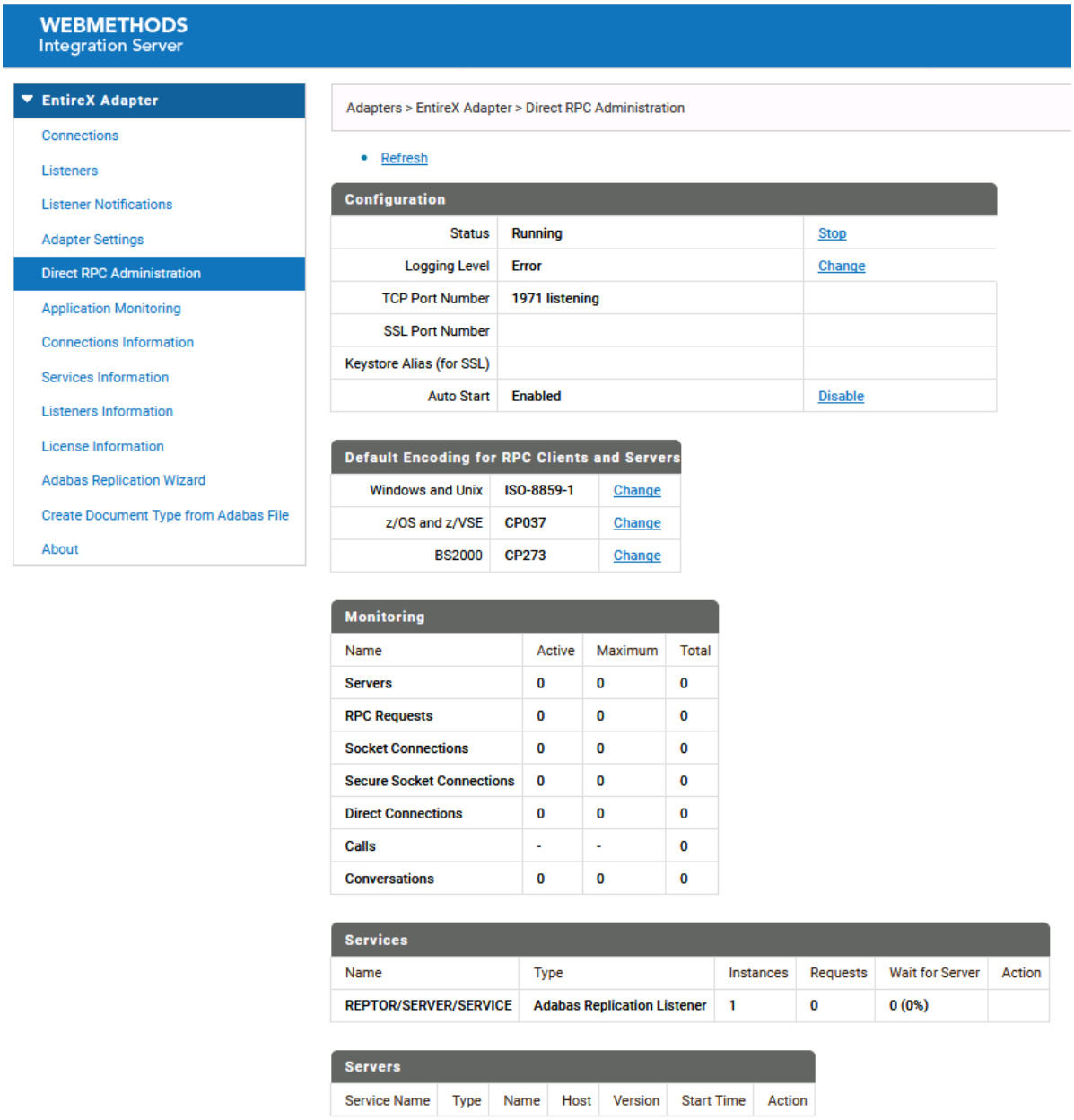
Enable Autostart of EntireX Adapter

Note: This is only required if you want to use Direct RPC Administration.

It is recommended to enable the autostart option of the EntireX Adapter in the webMethods Integration Server.

To enable the EntireX autostart option

1 In the webMethods Integration Server Administration interface go to **EntireX Adapter > Direct RPC Administration**.



2 In the **Configuration** menu go to the **Auto Start** option and check whether it is set to **Enabled**. If it is not yet enabled, click on **Enable**.

If set to **Enabled**, the EntireX Adapter is launched automatically when the webMethods Integration Server starts up.

6 Configuration - EntireX Adapter

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- Creating or Managing an Adabas Replication Listener Connection with the Broker as External Process 17
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This section provides information on the configuration steps required in the EntireX Adapter in order to use the Adabas Replication Service for webMethods Integration Server.

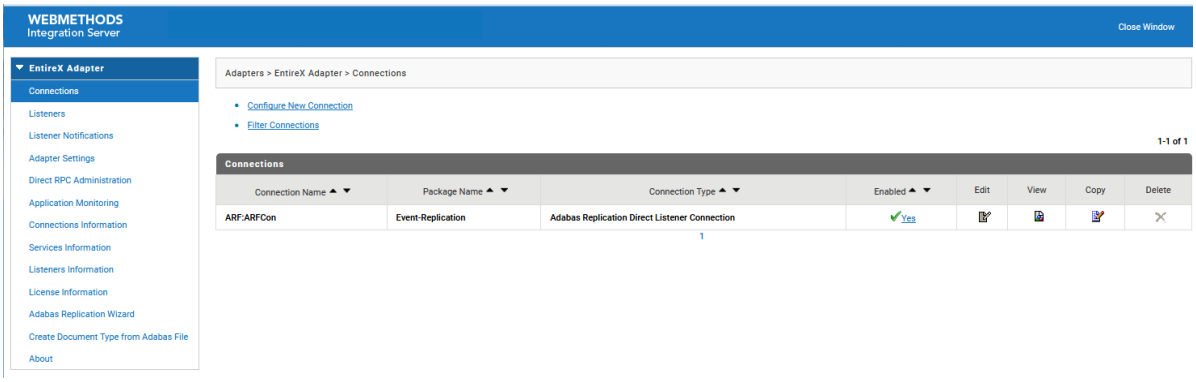
Creating and Managing Connections

In the EntireX Adapter menu you can manage existing connections and create new connections. The steps required to establish a new connection and the settings that can be made depend on the connection type.

The following connection-specific instructions apply when setting up a new or managing an existing connection unless mentioned otherwise.

To create a new connection or manage an existing connection

1 In the **EntireX Adapter** menu go to **Connections**.

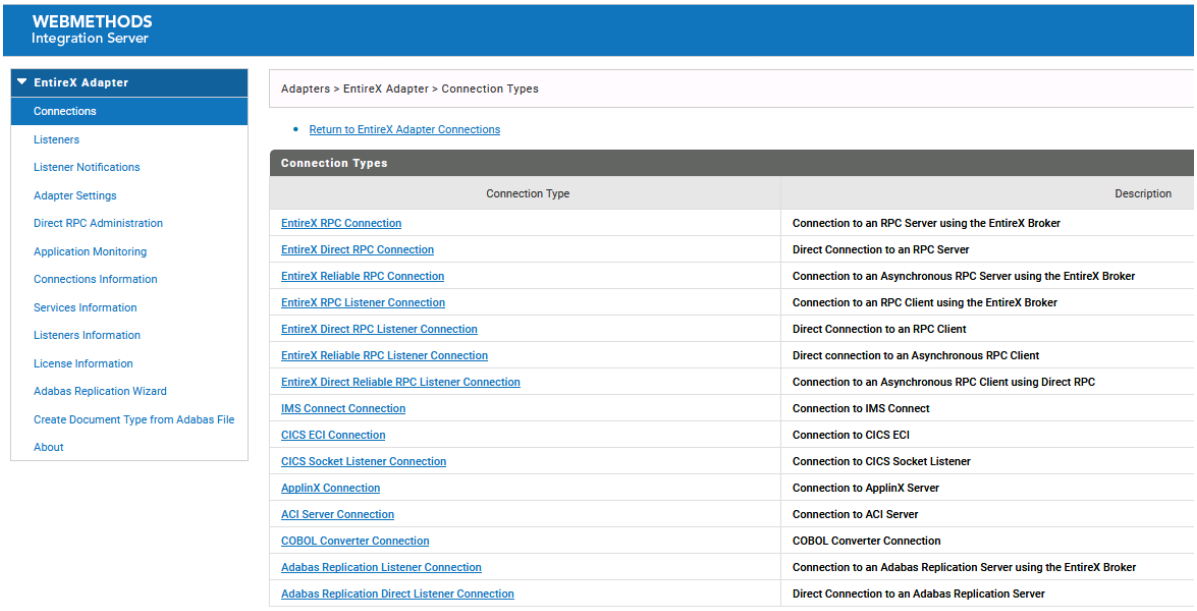


2 Click on **Configure New Connection** to create a new connection

Or:

Choose an existing connection and click on **Edit**.

For a new connection, the following screen is shown:



3 Select the type of connection you want to establish.

4 For an existing connection or when the type of connection has been selected for a new connection, the next screen to be shown depends on the type of connection. Please refer to the following sections for details.

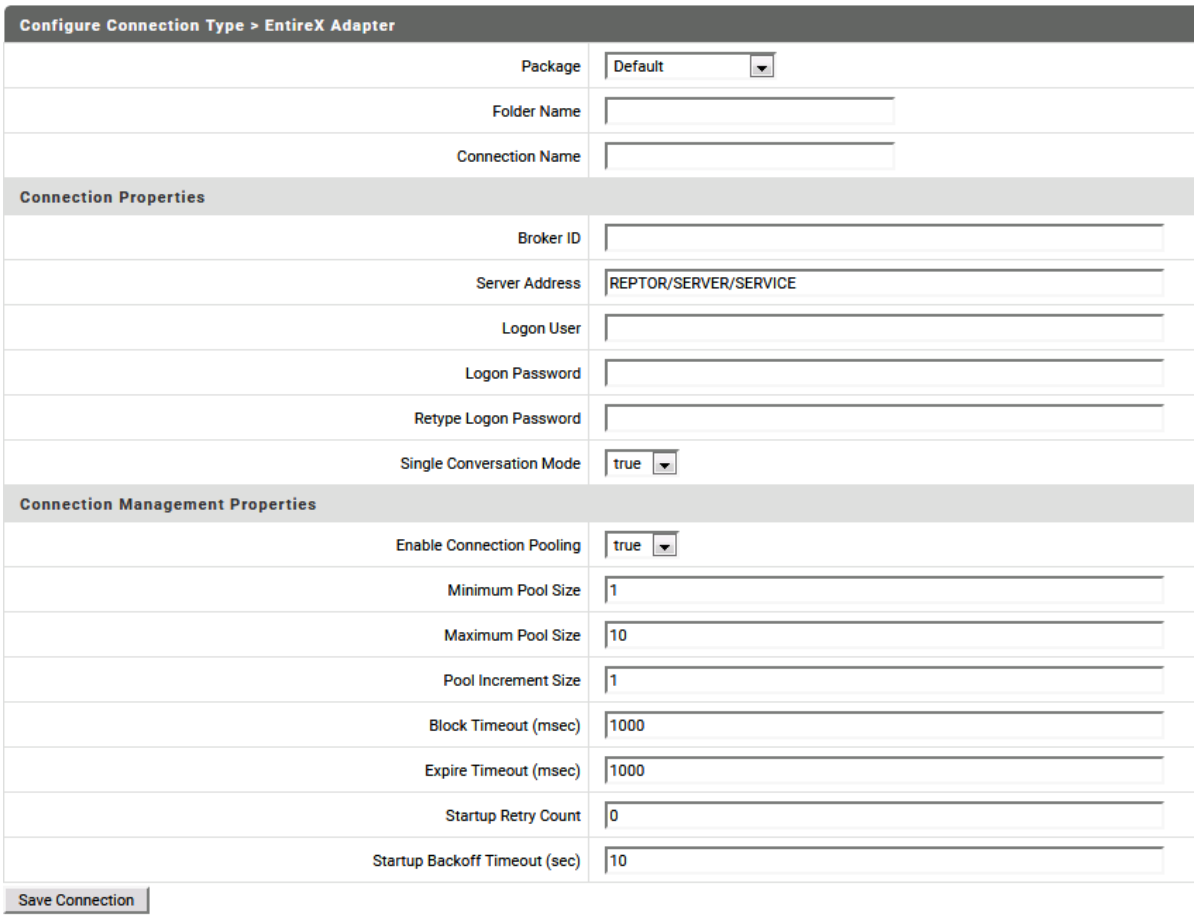
Creating or Managing an Adabas Replication Listener Connection with the Broker as External Process

To create an Adabas Replication Listener Connection

1 In the **EntireX Adapter** menu go to **Connections**.

Click on **Adabas Replication Listener Connection**.

The following screen is shown:



2 Provide the required parameter values. Parameters and their possible values are described in the following table:

Parameter	Description
Package	Name of the package where the connection is stored.
Folder Name	Name of the folder where the connection is stored.
Connection Name	The name of the connection.
Broker ID	The ID of the broker you want to connect to. This ID consists of a host and an optional port. Default for the port is 1971.
Server Address	The address of the RPC server registered to the broker above. The address is given in the format `<class>/<server>/<service>`.
Logon User	The name of the user to log on to the broker.
Logon Password	The password for the user above.
Retype Logon Password	Verification of the password.
Single Conversation Mode	Enables or disables the use of Single Conversation Mode.

Parameter	Description
	Default: true.
Enable Connection Pooling	Enables the adapter to use connection pooling. Default: true. Refer to *Connection Pooling* under *EntireX Adapter Connections* in the *webMethods EntireX* documentation for more information on connection pooling.
Minimum Pool Size	If connection pooling is enabled, this field specifies the minimum number of connection objects that remain in the connection pool at all times. When the adapter creates the pool, it creates this number of connections. Default: 1.
Maximum Pool Size	The maximum number of connection objects that can exist in the connection pool. The adapter will reuse any inactive connections in the pool or, if all connections are active and the connection pool has reached its maximum size, the adapter will wait for a connection to become available. Default: 10.
Pool Increment Size	If connection pooling is enabled, this field specifies the number of connections by which the pool will be incremented if connections are needed, up to the maximum pool size. Default: 1.
Block Timeout	If connection pooling is enabled, this field specifies the number of milliseconds that the Integration Server will wait to obtain a connection before it times out and returns an error. Default: 1000.
Expire Timeout	If connection pooling is enabled, this field specifies the number of milliseconds that an inactive connection can remain in the pool before it is closed and removed from the pool. For example, to specify 10 seconds, specify 10000. Enter 0 to specify no timeout. Default: 1000. **Note:** The adapter will never violate the Minimum Pool Size parameter. These connections remain in the pool regardless of how long they are inactive.
Startup Retry Count	The number of times that the system should attempt to initialize the connection pool at startup if the initial attempt fails. Default: 0.
Startup Backoff Timeout	The number of seconds that the system should wait between attempts to initialize the connection pool.

3 Click on **Save Connection**.

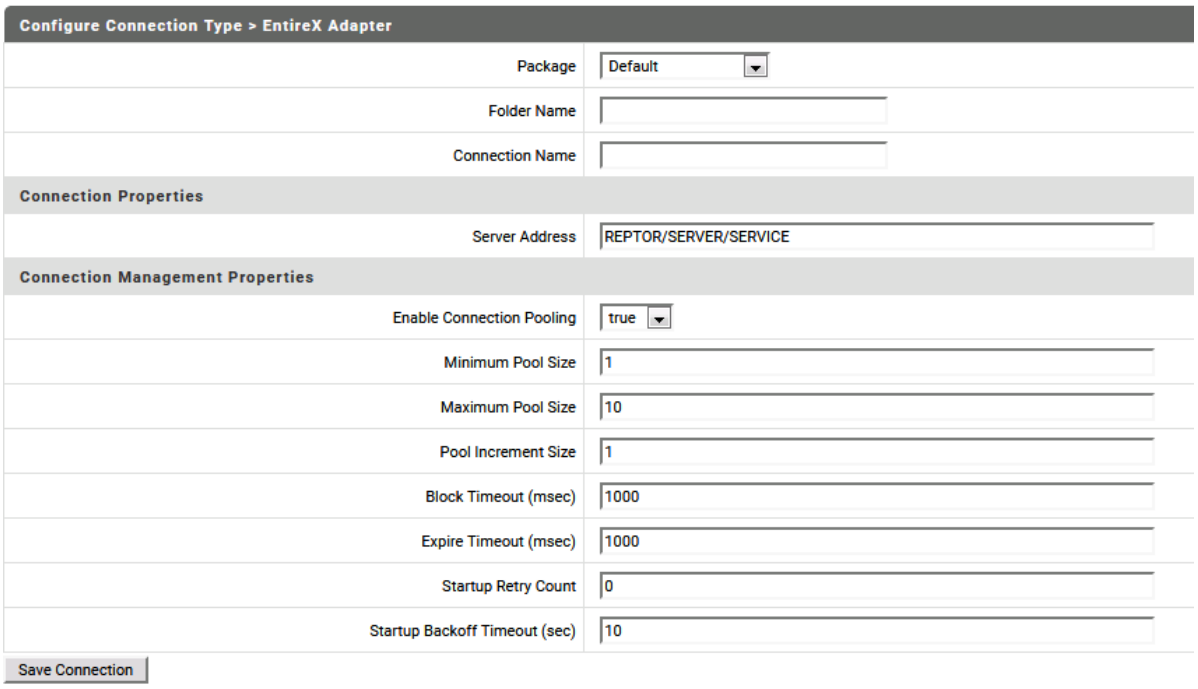
Creating or Managing an Adabas Replication Direct Listener Connection

To create an Adabas Replication Direct Listener Connection

1 In the **EntireX Adapter** menu go to **Connections**.

Click on **Adabas Replication Direct Listener Connection**.

The following screen is shown:



2 Provide the required parameter values. Parameters and their possible values are described in the following table:

Parameter	Description
Package	Name of the package where the connection is stored.
Folder Name	Name of the folder where the connection is stored.
Connection Name	The name of the connection.
Server Address	The address of the RPC server. The address is given in the format `<class>/<server>/<service>`.

Parameter	Description
Enable Connection Pooling	Enables the adapter to use connection pooling. Default: true. Refer to *Connection Pooling* under *EntireX Adapter Connections* in the *webMethods EntireX* documentation for more information on connection pooling.
Minimum Pool Size	If connection pooling is enabled, this field specifies the minimum number of connection objects that remain in the connection pool at all times. When the adapter creates the pool, it creates this number of connections. Default: 1.
Maximum Pool Size	The maximum number of connection objects that can exist in the connection pool. The adapter will reuse any inactive connections in the pool or, if all connections are active and the connection pool has reached its maximum size, the adapter will wait for a connection to become available. Default: 10.
Pool Increment Size	If connection pooling is enabled, this field specifies the number of connections by which the pool will be incremented if connections are needed, up to the maximum pool size. Default: 1.
Block Timeout	If connection pooling is enabled, this field specifies the number of milliseconds that the Integration Server will wait to obtain a connection before it times out and returns an error. Default: 1000.
Expire Timeout	If connection pooling is enabled, this field specifies the number of milliseconds that an inactive connection can remain in the pool before it is closed and removed from the pool. For example, to specify 10 seconds, specify 10000. Enter 0 to specify no timeout. Default: 1000. **Note:** The adapter will never violate the Minimum Pool Size parameter. These connections remain in the pool regardless of how long they are inactive.
Startup Retry Count	The number of times that the system should attempt to initialize the connection pool at startup if the initial attempt fails. Default: 0.
Startup Backoff Timeout	The number of seconds that the system should wait between attempts to initialize the connection pool.

3 Click on **Save Connection**.

Once you have established a connection, you have to define a listener for each connection you want to use with the Adabas Replication Service for webMethods Integration Server. Defining listeners is described in the following section ***Using the Adabas Replication Wizard***.

7 Using the Adabas Replication Wizard

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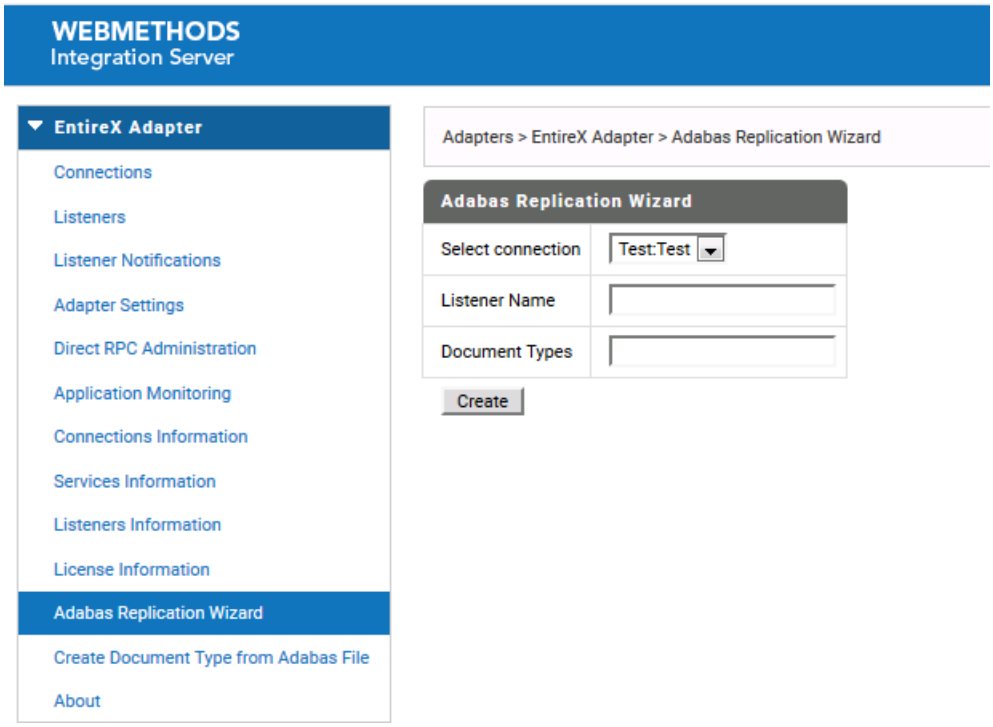
Introduction

The Adabas Replication Wizard can be used to generate a listener and all required objects for an existing connection. The listener will be stored in the same location as the connection.

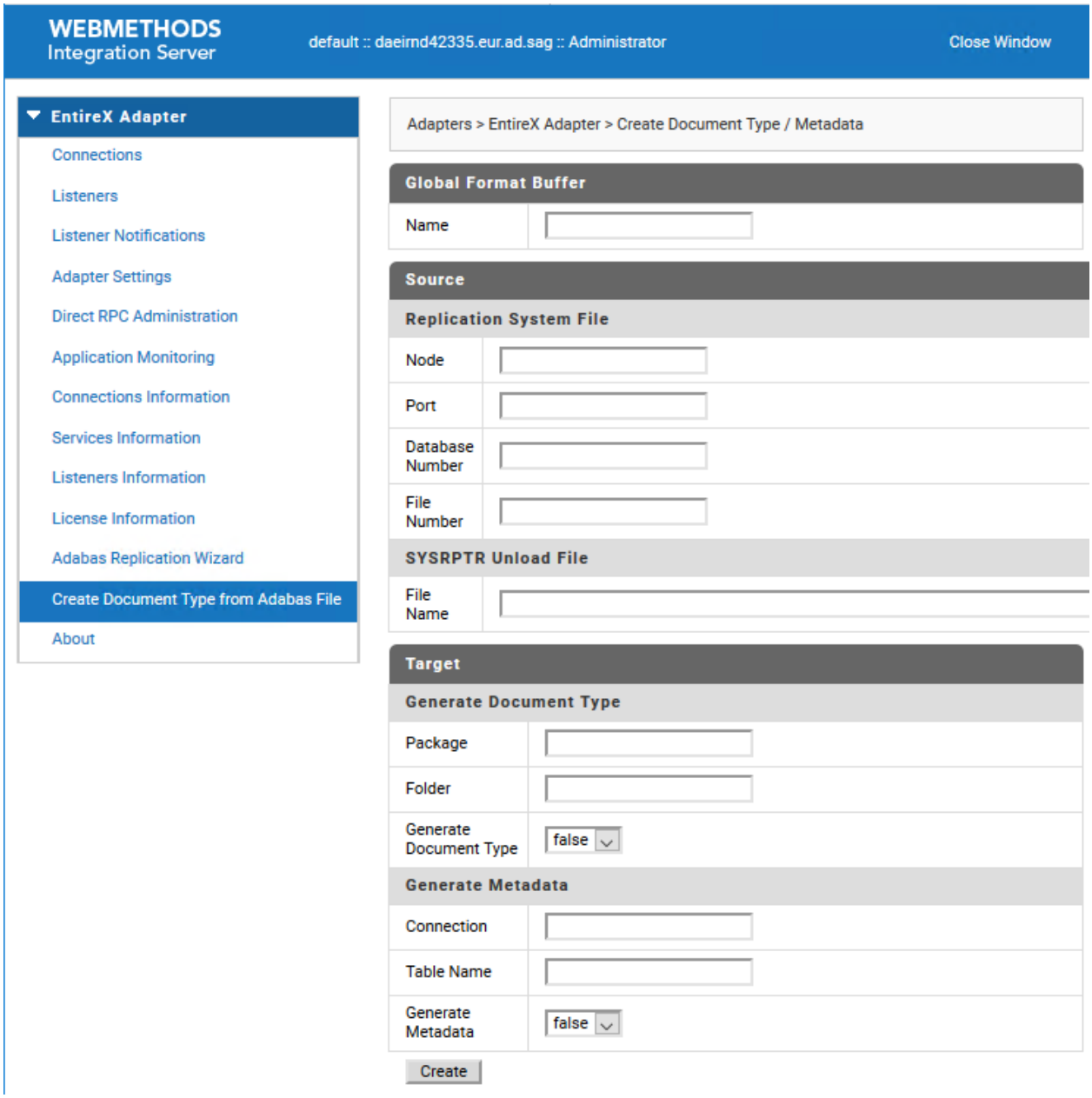


Configuring a Listener

Parameter	Description
Select connection	Select the connection for which the objects are generated. **Note:** The connection must be enabled so that it can be selected from the drop down menu.
Listener Name	Name of the listener.
Document Types	The wizard is able to generate listener services from existing Document types. These Document type must be entered in the Integration Server name schema. More than one Document type must be separated by a comma.

8 Create Document Type from Adabas File

Adabas Replication Service for webMethods Integration Server is able to generate document type and Metadata from the definitions that are stored on the Replication System file.



With this function two different object types can be created from a Global Format Buffer: Document Types and Metadata.

A Document Type contains a set of fields used to define the structure and type of data in a document (IData object). For more information about the Document Type see the *webmethods Integration Server* documentation. Metadata is needed to decode the replication data from the Event Replicator for Adabas to the iData object.

The Metadata is provided when the Initial State is done. If the Metadata is not available, it can be created with this function.

Parameter	Description
Name	The name of the Global Format Buffer on the Replication System File.
Node	The network node where the Replicator system file can be found. This is the TCP/IP node or IP address where the Event Replicator Server nucleus resides.
Port	The port number where the Replicator system file can be found. This is the TCP/IP port number used by the Entire Net-Work TCP/IP Option on the mainframe.
Database Number	Database number of the Replication System File.
File Number	File number of the Replication System File.
File Name	Name of the SYSRPTR Unload File.
Package	Package in which the Document type is stored.
Folder	Folder in which the Document type is stored.
Generate Document Type	Check this box to generate Document type.
Connection	Connection name in the Integration Server naming schema.
Table Name	Optional. Only required when the table name is different from Global Format Buffer Name.
Generate Metadata	Check this box to generate Metadata.

Note: If the Replication System File is not accessible via the Entire Net-Work, the data can be generated from SYSRPTR Unload File. In this case, leave the Replication System File empty and enter the file name in **SYSRPTR Unload File**.

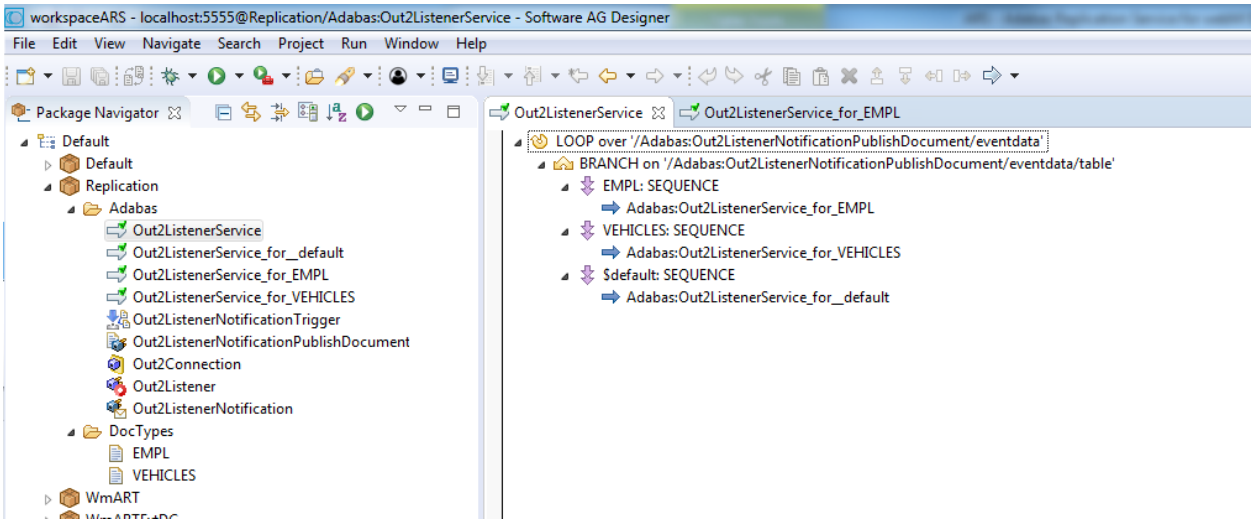
9 Using the Software AG Designer

- Generated Objects 30
- Adabas Metadata Wizard 30

You can use the Software AG Designer to view and edit the objects generated with the Adabas Replication Wizard.

Generated Objects

This picture shows object that were created by the Adabas Replication Wizard:



The Flow Services are the place where users should insert their logic.

Adabas Metadata Wizard

The Adabas Metadata Wizard is invoked using the **New** command.

To invoke the Adabas Metadata Wizard via the New command:

1 In the top menu of the Software AG Designer click on **File > New > Other...**

Or:

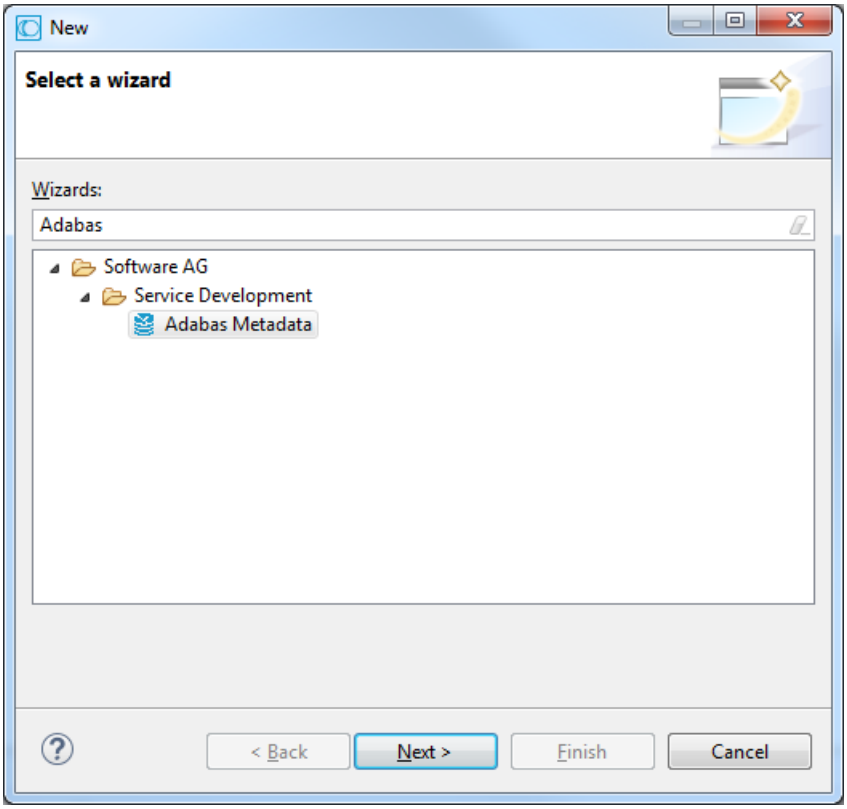
In the toolbar click on and then select **Other...** from the menu.

Or:

Use the shortcut CTRL+N.

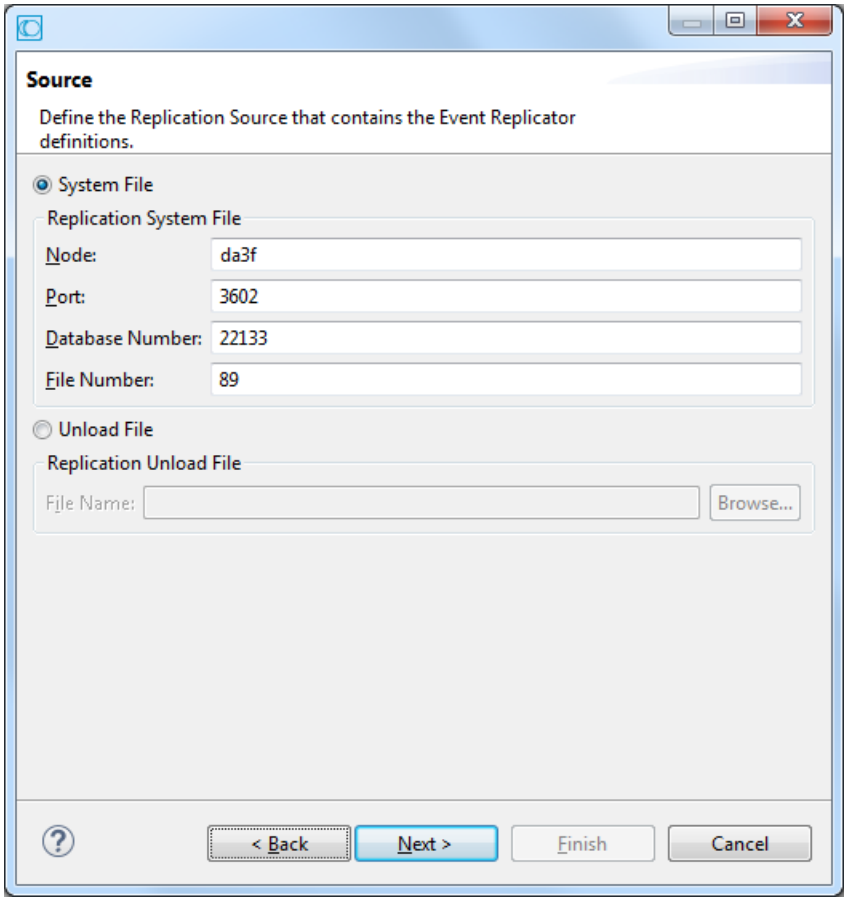
The **New** wizard is opened.

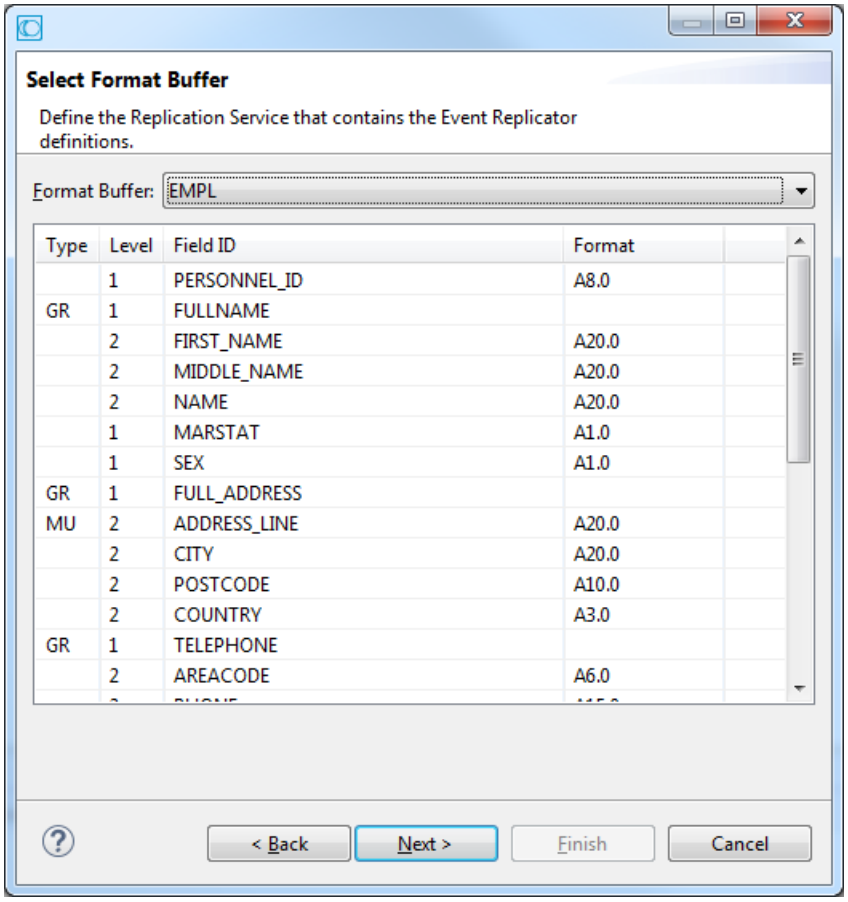
2 Navigate to **Software AG > Service Development** and click on **Adabas Metadata**.

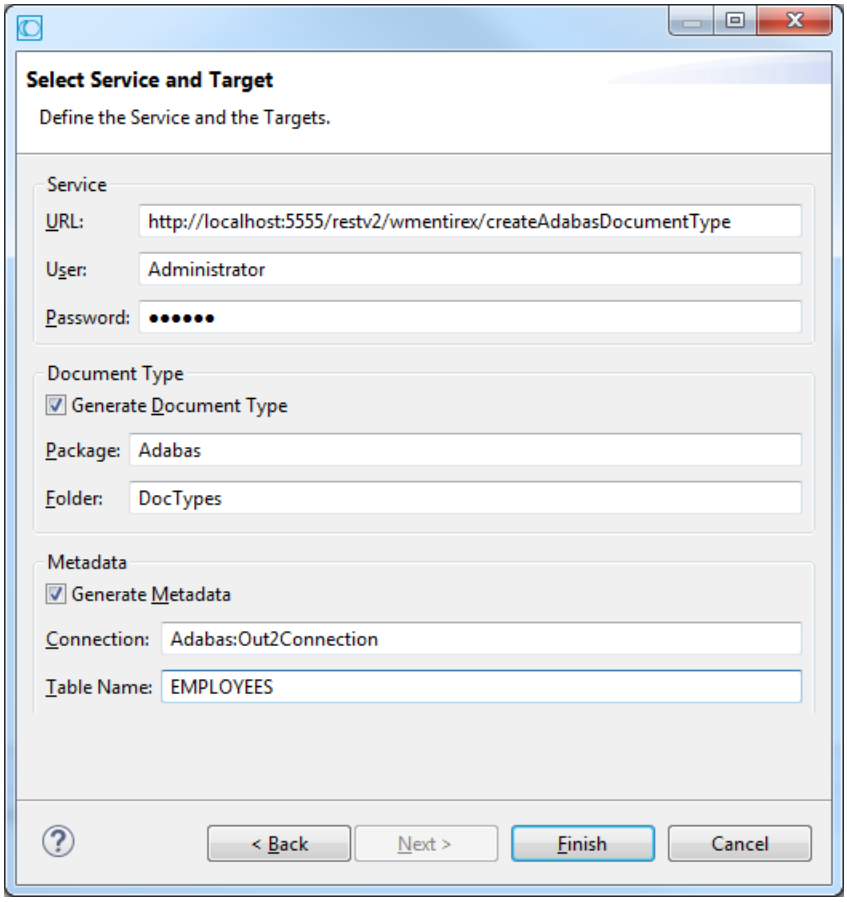


The Designer Wizard is able to create Document types and Metadata.

You can either create them using a system file or read the metadata from a SYSRPTR unload file:


Source
Define the Replication Source that contains the Event Replicator definitions.
System File
Replication System File
Node:
da3f
Port:
3602
Database Number:
22133
File Number:
89
Unload File
Replication Unload File
File Name:
Browse...
< Back
Next >
Finish
Cancel


Select Format Buffer
Define the Replication Service that contains the Event Replicator definitions.
Format Buffer: EMPL
Type Level Field ID Format
1 PERSONNEL_ID A8.0
GR 1 FULLNAME
2 FIRST_NAME A20.0
2 MIDDLE_NAME A20.0
2 NAME A20.0
1 MARSTAT A1.0
1 SEX A1.0
GR 1 FULL_ADDRESS
MU 2 ADDRESS_LINE A20.0
2 CITY A20.0
2 POSTCODE A10.0
2 COUNTRY A3.0
GR 1 TELEPHONE
2 AREACODE A6.0
< Back
Next >
Finish
Cancel



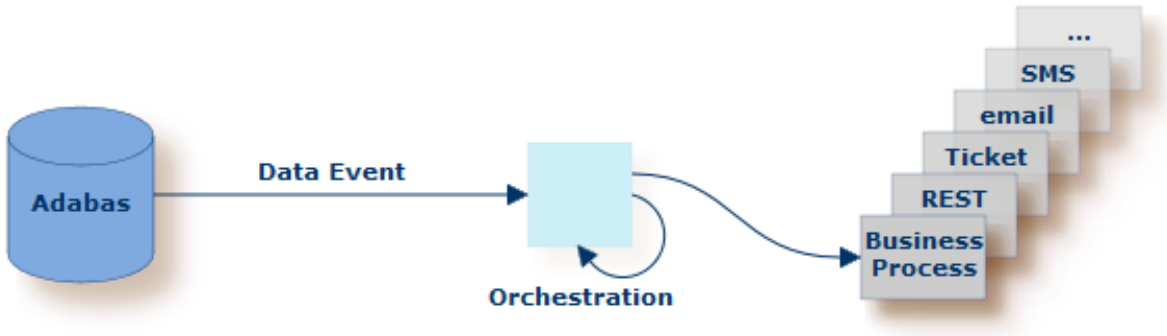
The parameters that can be set edited are the same as described in the table of the section *Create Document Type from Adabas File*.

10 Common Scenarios

- For Event-based replication, for example sending an e-mail or initiating a REST call, see ***Common Usage Scenarios***.
- For all other replication scenarios, see Getting Started.

11 Common Usage Scenarios

This chapter describes common usage scenarios with the Adabas Replication Service for webMethods Integration Server.

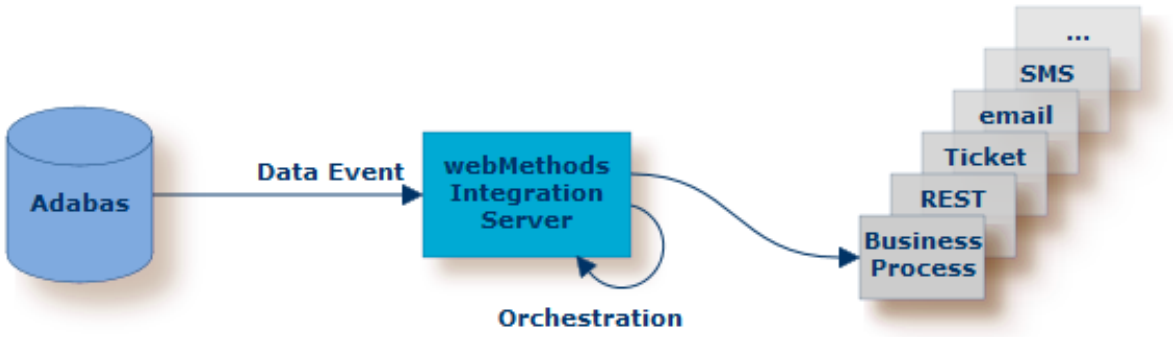


- I want to orchestrate the incoming event with other data
- I want to trigger a business process
- I want to call a REST API / resource
- I want to open a ticket in a ticketing system
- I want to send an SMS or an e-mail

To implement one of these scenarios, see *Common Deployment Scenarios*.

12 Common Deployment Scenarios

All **Common Usage Scenarios** described here are realized via the webMethods Integration Server.

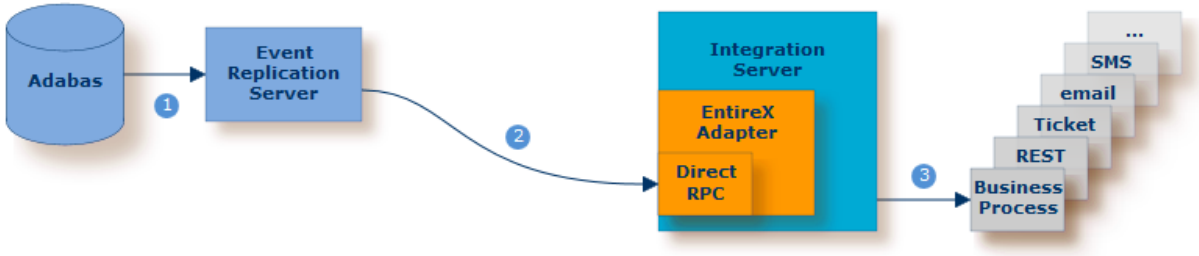


You have two architectural choices for deploying the components:

- **Simple Deployment Using Direct RPC**
- **Deployment Using EntireX Broker**

13 Simple Deployment Using Direct RPC

All **Common Usage Scenarios** are realized via the webMethods Integration Server.

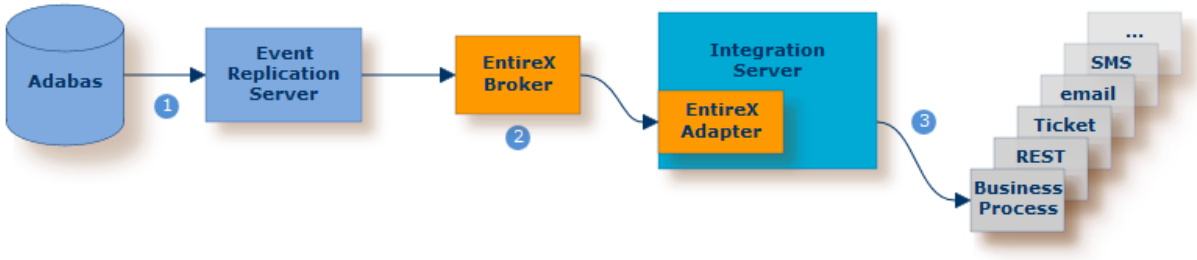


1. Event Replicator for Adabas listens for specific actions on the database.
2. Event Replicator for Adabas sends an XML message to Integration Server via Direct RPC of Integration Server
3. The EntireX Adapter listens to the respective message queue and triggers an IS service, for example starting a business process or notification by email.

See **Scenario: Notifying a User after an Adabas Database Reord is Updated** for the steps required.

14 Deployment Using EntireX Broker

All **Common Usage Scenarios** are realized via the webMethods Integration Server.



1. Event Replicator for Adabas listens for specific actions on the database.
2. Event Replicator for Adabas sends an XML message to Integration Server via EntireX Broker
3. The EntireX Adapter listens to the respective message queue and triggers an IS service, for example starting a business process or notification by email.

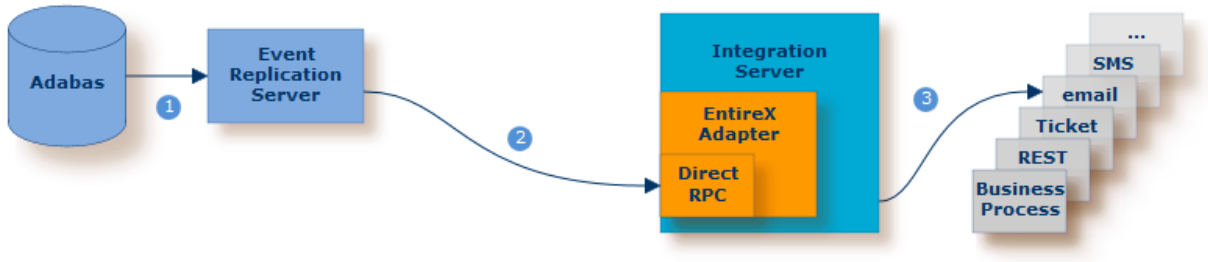
See **Scenario: Notifying a User after an Adabas Database Record is Updated** for the steps required.

15 Scenario: Notifying a User after an Adabas Database Record is Updated

- Step 1 - Configure your Integration Server 47
- Step 2 - Create Listener Objects with the Adabas Replication Wizard 49
- Step 3 - Create Processing Logic for Flow Services 51

Scenario: I have a mainframe Adabas database and want to notify a user when a record is updated.

Solution: Use the Event Replicator for Adabas to send a message to the webMethods Integration Server via Direct RPC, and use Integration Server logic to send an email to the target user.



1. Event Replicator for Adabas listens for specific actions on the database.
2. Event Replicator for Adabas sends an XML message to Integration Server via Direct RPC of Integration Server
3. The EntireX Adapter listens to the respective message queue and triggers an IS service to send the email.

This scenario requires the following Software AG products:

- Mainframe Adabas
- Event Replicator for Adabas
- webMethods Integration Server
- EntireX Adapter

Step 1 - Configure your Integration Server

- Check the EntireX Adapter Package is Available
- Enable Autostart (Optional)
- Creating an Adabas Replication Direct Listener Connection

Check the EntireX Adapter Package is Available

Before you begin, ensure that the EntireX Adapter package is available on the webMethods Integration Server.

To ensure that the EntireX Adapter package is available on the webMethods Integration Server

1 In the webMethods Integration Server Administration interface, go to **Packages > Management**.

2 Click on **WmEntireX** for details. A screen similar to this should be displayed (extract):

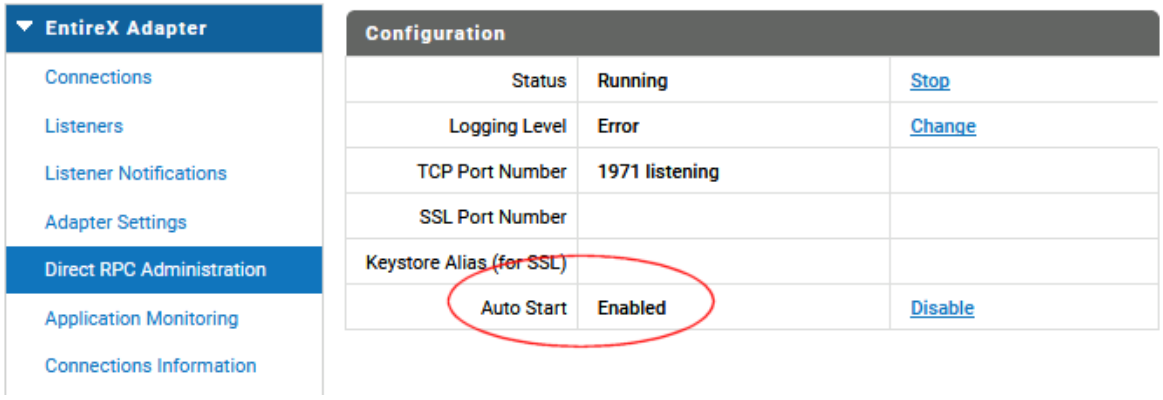
Package Information	
Package Name	WmEntireX
Version	10.3.0.0.640
Build	640
Minimum Version of JVM	1.8
Package List ACL	Default
Patches Included	
Description	EntireX Adapter
Publisher	Software AG

Enable Autostart (Optional)

We recommend enabling the autostart option of the EntireX Adapter in the webMethods Integration Server; EntireX Direct RPC is then launched automatically when the Integration Server starts up.

To enable the EntireX autostart option

1 In the webMethods Integration Server Administration interface go to **EntireX Adapter > Direct RPC Administration**.

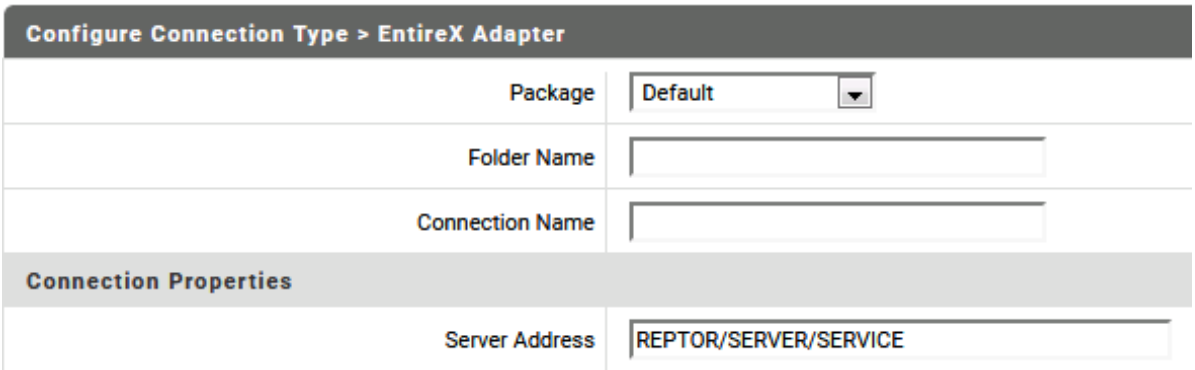


2 In the **Configuration** menu go to the **Auto Start** option and check whether it is set to **Enabled**. If it is not yet enabled, click on **Enable**.

Creating an Adabas Replication Direct Listener Connection

To create an Adabas Replication Direct Listener Connection

1 In the **EntireX Adapter** menu go to **Connections**. Click on **Adabas Replication Direct Listener Connection** to display the following screen:



2 Add the name of the package where the connection is stored.

3 Add the name of the folder where the connection is stored.

4 Add the name of the connection.

5 Add the server address in the format `<class>/<server>/<service>`.

> **Note:** All other parameters are optional. Normally you can use the default values for these. All parameters are described **here**.

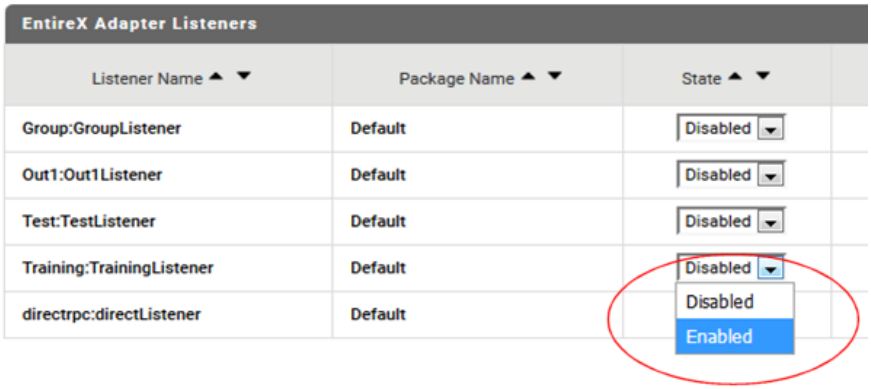
6 Click on **Save Connection**.

In the next step, create a listener for this connection, using the Adabas Replication Wizard.

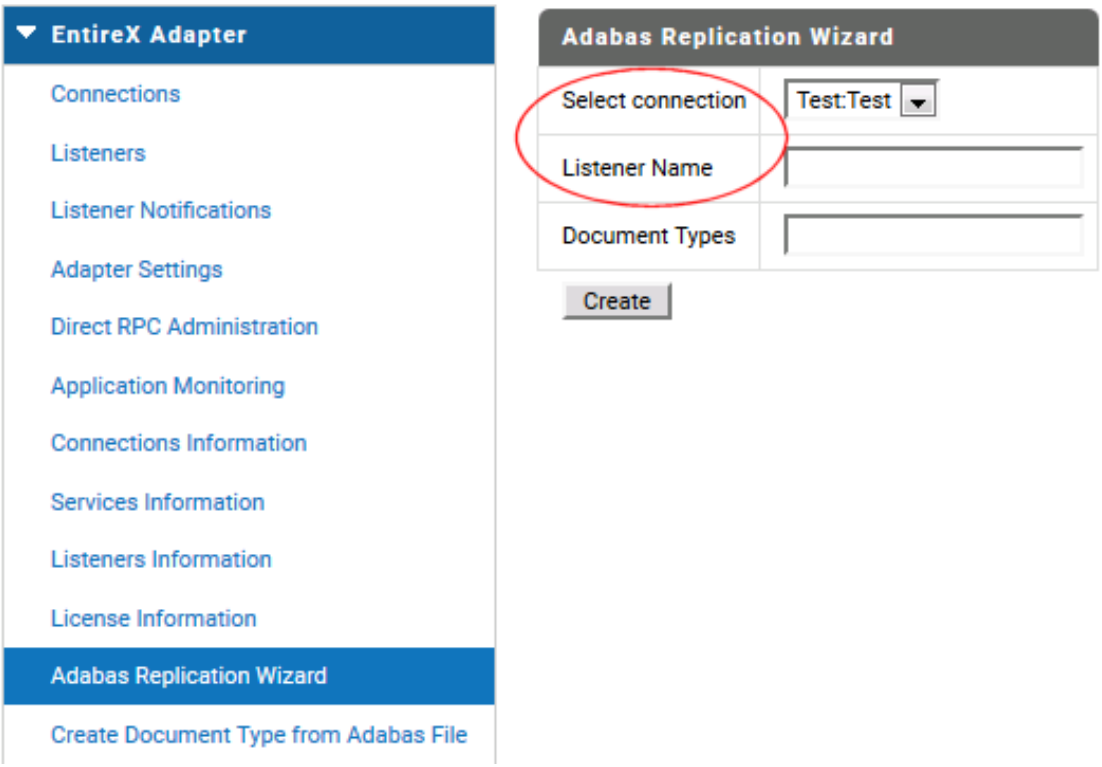
Step 2 - Create Listener Objects with the Adabas Replication Wizard

To generate a listener and all required objects for an existing connection

1 In the webMethods Integration Server, choose **Adapters > EntireX Adapter > Connections** and make sure the connection you created in the previous step is enabled.



2 In the Integration Server, choose **EntireX Adapter** > **Adabas Replication Wizard**.



3 Select the connection you created previously.

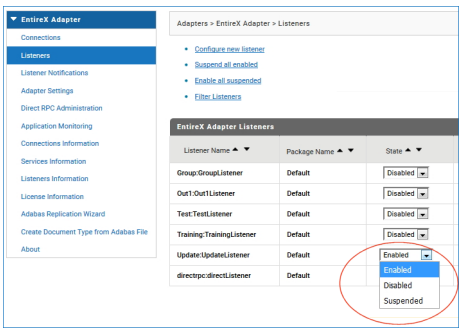
4 Enter the name of the new listener.

5 Choose Create.

The listener will be stored in the same location as the connection.

Note: Document types can be optionally created to restrict the scope of the listening operation. See **Create Document Type from Adabas File**.

6 Make sure the listner you created is enabled. Choose **Enabled** from the drop-down menu.

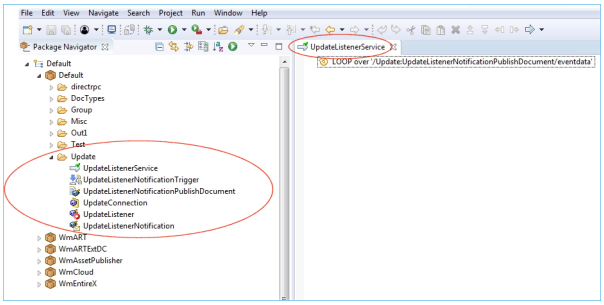


Step 3 - Create Processing Logic for Flow Services

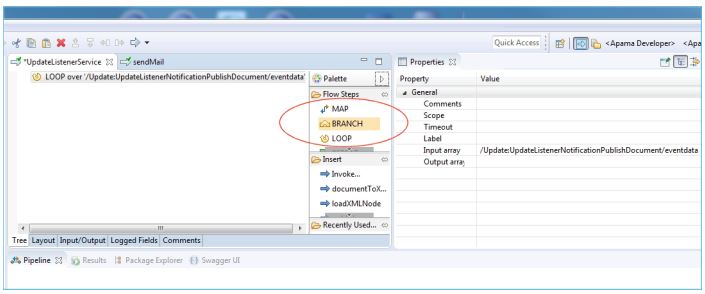
In the previous step you created the required listener objects with the Adabas Replication Wizard. Now you can add your own logic to perform the actions you require. In the example below we are sending an email with the updated data in XML format.

To customize the newly created flow service

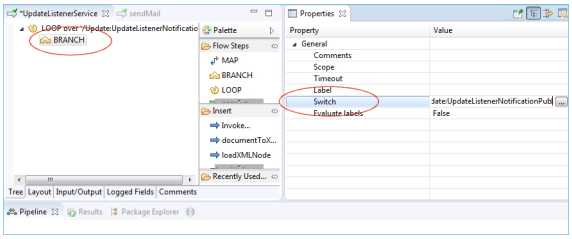
1 Open the flow service created in the previous step to add your custom logic.



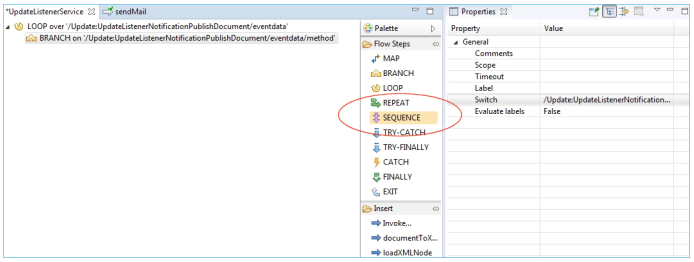
2 Add a flow step **BRANCH** within the **LOOP**. This enables you to decide on a specific action for a particular field.



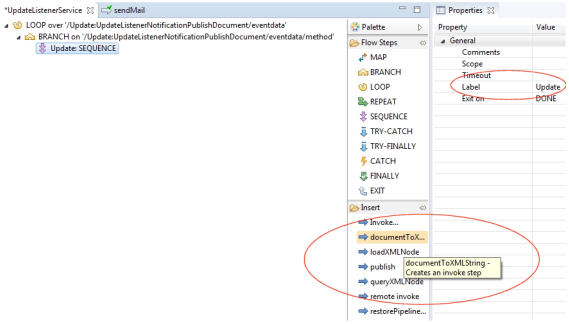
3 In the **Switch** property, set the path to an attribute of the event data. In this case it is the `method` attribute of the event data.



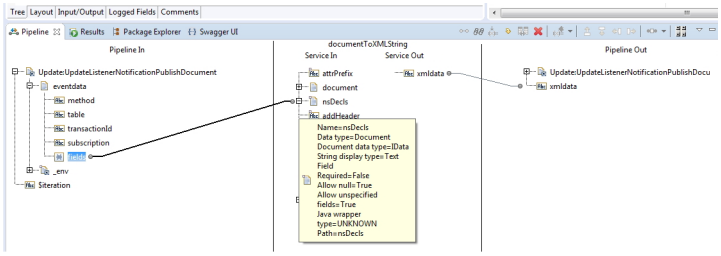
4 Under flow step **SEQUENCE**, specify what happens when the method has a particular value.



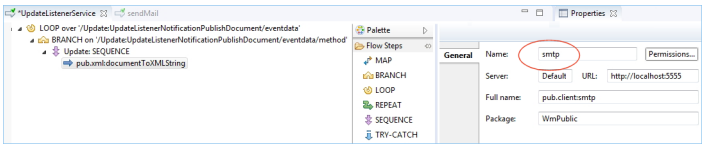
5 Set **Label** to **Update** and map document (the input format) to XML string.



6 Use the `pub.sml:documentToXMLString` service from the `WmPublic` package to document from fields an XML string that can be sent via email.



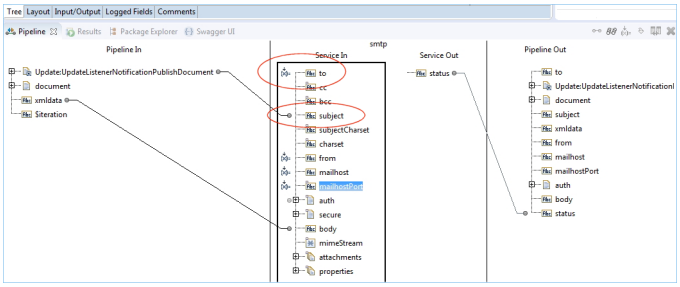
7 Specify the mail protocol, in our example "smtp". To send the mail you can use the public flow service `pub.client:smtp` from the `WmPublic` package.



8 Set the SMPT parameters.

- Some fields are coded manually, for example **to**.
  These fields are marked with the icon
- Other fields are filled dynamically with values from the flow service, for example **subject**.

These fields are marked with the icon ⊢●



The result of these steps is an email where

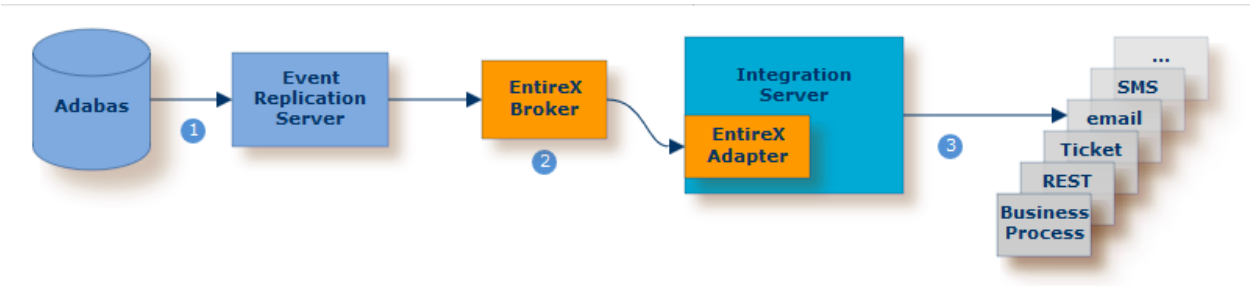
- the subject is dynamically filled with the value from the flow service
- the addresse is coded manually in a mapping operation
- the body is converted to XML and contains the fields that have been updated

16 Scenario: Notifying a User after an Adabas Database Record is Updated

- Step 1 - Configure your Integration Server 57
- Step 2 - Create Listener Objects with the Adabas Replication Wizard 59
- Step 3 - Create Processing Logic for Flow Services 61

Scenario: I have a mainframe Adabas database and want to notify a user when a record is updated.

Solution: Use the Event Replicator for Adabas to send a message to the webMethods Integration Server via EntireX Broker, and use Integration Server logic to send an email to the target user.



1. Event Replicator for Adabas listens for specific actions on the database.
2. Event Replicator for Adabas sends an XML message to Integration Server via EntireX Broker
3. The EntireX Adapter listens to the respective message queue and triggers an IS service to send the email.

This scenario requires the following Software AG products:

- Mainframe Adabas
- Event Replicator for Adabas
- webMethods Integration Server
- EntireX Broker
- EntireX Adapter

Step 1 - Configure your Integration Server

- Check the EntireX Adapter Package is Available
- Creating an Adabas Replication Listener Connection

Check the EntireX Adapter Package is Available

Before you begin, ensure that the EntireX Adapter package is available on the webMethods Integration Server.

To ensure that the EntireX Adapter package is available on the webMethods Integration Server

1 In the webMethods Integration Server Administration interface, go to **Packages > Management**.

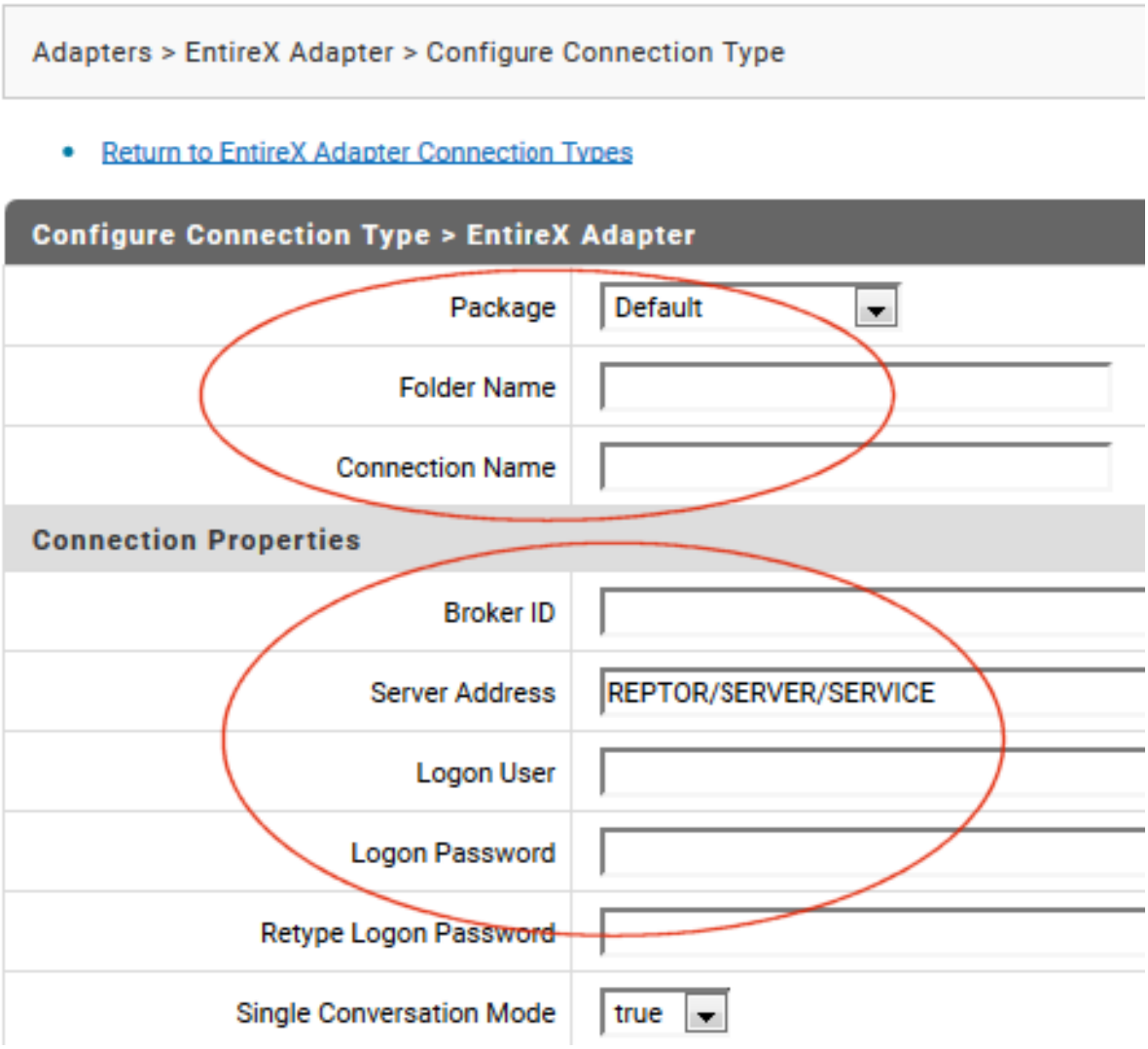
2 Click on **WmEntireX** for details. A screen similar to this should be displayed (extract):

Package Information	
Package Name	WmEntireX
Version	10.3.0.0.640
Build	640
Minimum Version of JVM	1.8
Package List ACL	Default
Patches Included	
Description	EntireX Adapter
Publisher	Software AG

Creating an Adabas Replication Listener Connection

To create an Adabas Replication Listener Connection

1 In the **EntireX Adapter** menu go to **Connections**. Click on **Adabas Replication Listener Connection** to display the following screen:



2 Add the name of the package where the connection is stored.

3 Add the name of the folder where the connection is stored.

4 Add the name of the connection.

5 Add the ID of the broker you are using for this task.

6 Add the server address in the format `<class>/<server>/<service>`.

7 Add the user ID and password (if applicable).

Note: All other parameters are optional. Normally you can use the default values for these. All parameters are described **here**.

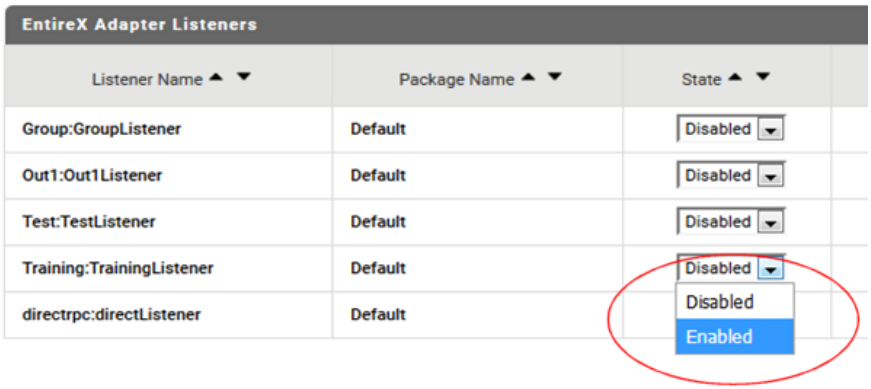
8 Click on **Save Connection**.

In the next step, create a listener for this connection, using the Adabas Replication Wizard.

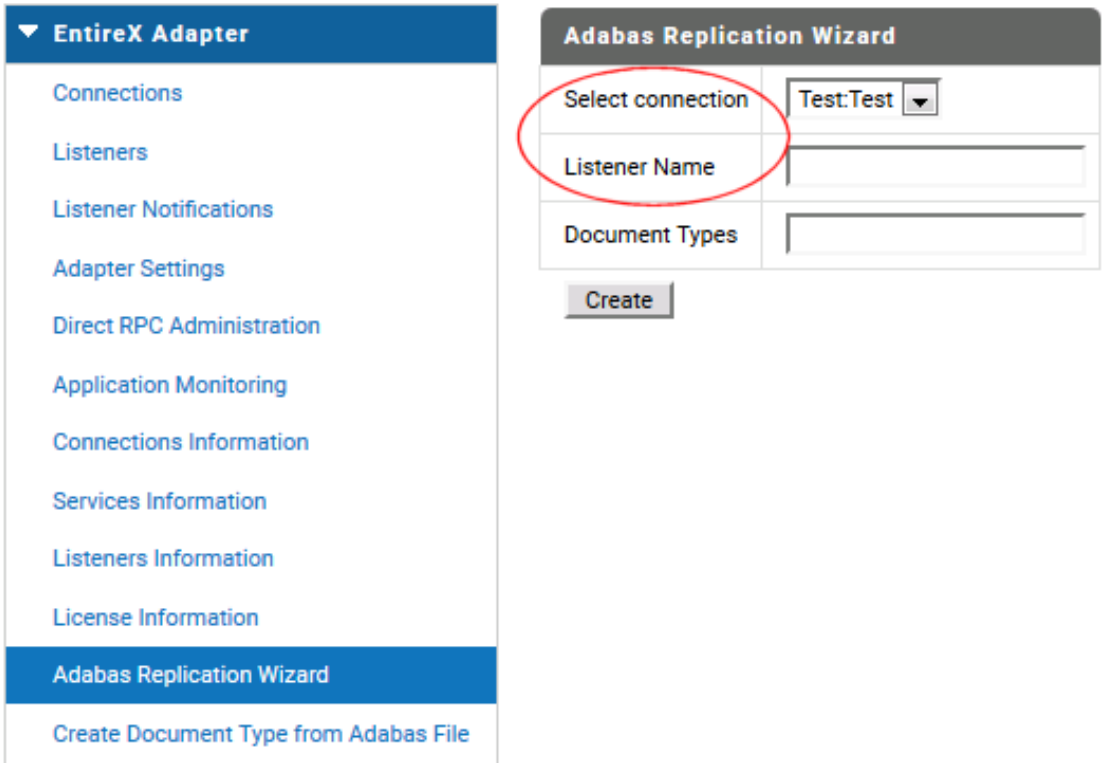
Step 2 - Create Listener Objects with the Adabas Replication Wizard

To generate a listener and all required objects for an existing connection

1 In the webMethods Integration Server, choose **Adapters > EntireX Adapter > Connections** and make sure the connection you created in the previous step is enabled.



2 In the Integration Server, choose **EntireX Adapter** > **Adabas Replication Wizard**.



3 Select the connection you created previously.

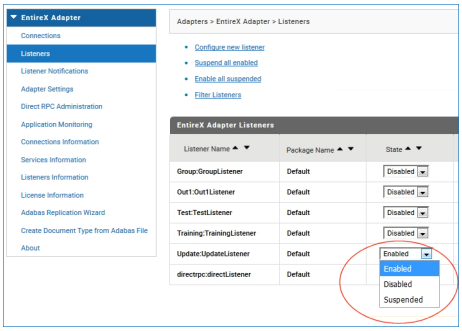
4 Enter the name of the new listener.

5 Choose Create.

The listener will be stored in the same location as the connection.

Note: Document types can be optionally created to restrict the scope of the listening operation. See **Create Document Type from Adabas File**.

6 Make sure the listner you created is enabled. Choose **Enabled** from the drop-down menu.

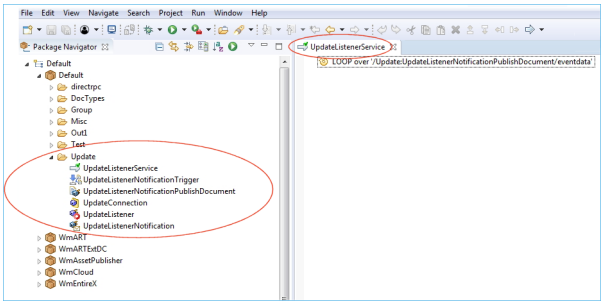


Step 3 - Create Processing Logic for Flow Services

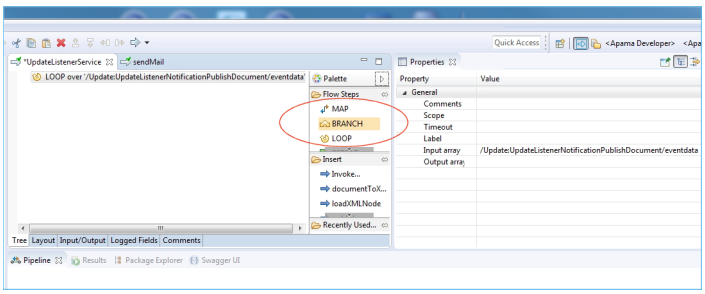
In the previous step you created the required listener objects with the Adabas Replication Wizard. Now you can add your own logic to perform the actions you require. In the example below we are sending an email with the updated data in XML format.

To customize the newly created flow service

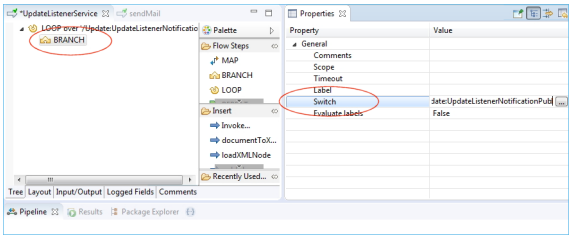
1 Open the flow service created in the previous step to add your custom logic.



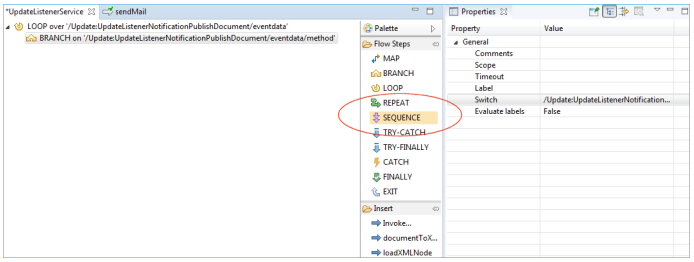
2 Add a flow step **BRANCH** within the **LOOP**. This enables you to decide on a specific action for a particular field.



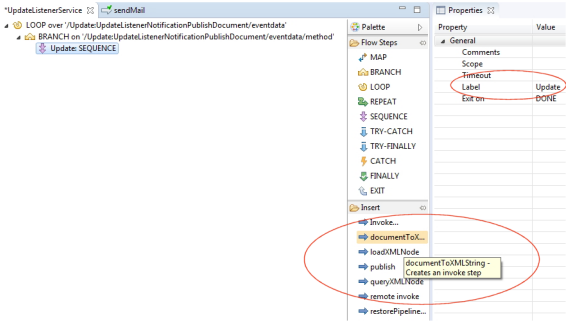
3 In the **Switch** property, set the path to an attribute of the event data. In this case it is the `method` attribute of the event data.



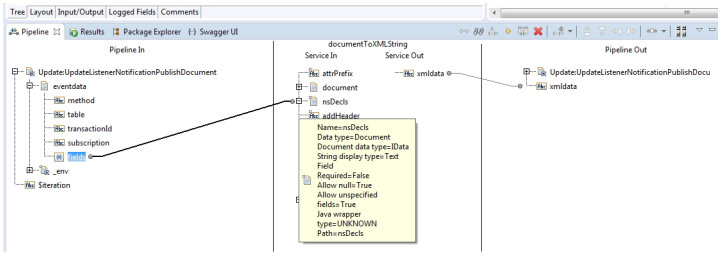
4 Under flow step **SEQUENCE**, specify what happens when the method has a particular value.



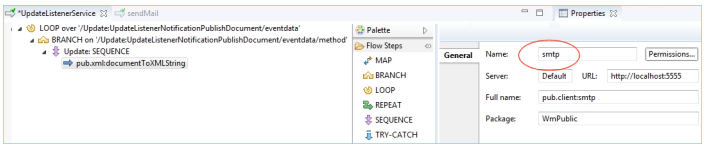
5 Set **Label** to **Update** and map document (the input format) to XML string.



6 Use the `pub.sml:documentToXMLString` service from the `WmPublic` package to create, from a document, an XML string that can be sent via email.



7 Specify the mail protocol, in our example "smtp". To send the mail you can use the public flow service `pub.client:smtp` from the `WmPublic` package.



8 Set the SMPT parameters.

- Some fields are coded manually, for example **to**.
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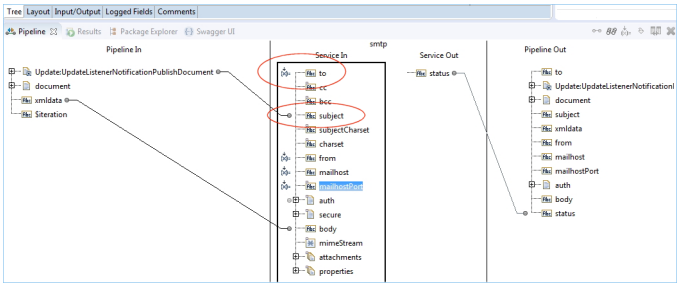
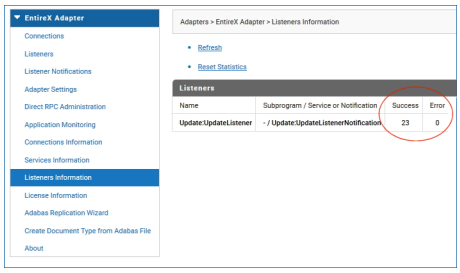


The result of these steps is an email where

- the subject is dynamically filled with the value from the flow service
- the addresse is coded manually in a mapping operation
- the body is converted to XML and contains the fields that have been updated

17 Troubleshooting