



Informatica™

Informatica® B2B Data Transformation
10.0

Agent for BizTalk

Informatica B2B Data Transformation Agent for BizTalk
10.0
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Table of Contents

Preface	6
Informatica Resources.	6
Informatica My Support Portal.	6
Informatica Documentation.	6
Informatica Web Site.	6
Informatica How-To Library.	6
Informatica Knowledge Base.	7
Informatica Support YouTube Channel.	7
Informatica Marketplace.	7
Informatica Velocity.	7
Informatica Global Customer Support.	7
Chapter 1: Integrating Data Transformation with BizTalk	8
Integration Overview.	8
Data Transformation Services.	8
About BizTalk.	9
How Data Transformation Enhances BizTalk.	9
Integration Approach.	9
Installation.	10
System Requirements.	10
Installing.	10
Uninstalling.	10
Upgrading to a New Version.	10
Chapter 2: Using Data Transformation with BizTalk	11
Usage Overview.	11
Background: BizTalk Objects.	11
Steps for Using.	12
Creating a Data Transformation Service.	12
Building a BizTalk Server Pipeline.	12
Building a Receive Pipeline that Uses Data Transformation.	12
Building a Send Pipeline that Uses Data Transformation.	13
Deploying the BizTalk Project.	14
Redeploying.	14
Using the Pipeline in a BizTalk Scenario.	15
Assigning a Send Pipeline to a Send Port.	15
Assigning a Receive Pipeline to a Receive Location.	15
Assigning a Pipeline to an Orchestration Port.	15
Running the BizTalk Application.	16
Troubleshooting.	16

Data Transformation Components not in Toolbox.	16
Viewing the Windows Event Log.	16
Changing the Type of a Service.	17
Example: Creating a File-Transfer Scenario that Uses Data Transformation.	17
Preliminaries.	17
Creating a Disassembling Process.	17
Creating an Assembling Process.	19
Running the Scenario.	19
Index.	20

Preface

Data Transformation Agent for BizTalk is written for developers who want to transform structured or unstructured data in the Microsoft BizTalk Server environment. The book explains how to install, configure, and use the Data Transformation integration features that operate within BizTalk.

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CHAPTER 1

Integrating Data Transformation with BizTalk

This chapter includes the following topics:

- [Integration Overview, 8](#)
- [Installation, 10](#)

Integration Overview

Data Transformation can enhance the capabilities of Microsoft BizTalk Server by supporting the conversion of many document formats that BizTalk does not natively support. Some examples of the formats that Data Transformation can interface with BizTalk are Microsoft Word documents, HL7 messages, and COBOL data structures.

Data Transformation can work with BizTalk either in the parsing or serialization direction. In BizTalk terminology, parsing is called disassembly and serialization is called assembly.

Data Transformation Services

The integration features described in this document allow you to run Data Transformation services in BizTalk. A service has one of the following types:

- **Parser.** Converts any format to XML.
- **Serializer.** Converts XML to any format.
- **Mapper.** Converts XML to XML.
- **Transformer.** Modifies the data in any format.
- **Streamer.** Splits large inputs into portions for processing by the other transformation types.

For example, you can use a parser service in a BizTalk pipeline to transform binary or text inputs to XML. The inputs can contain structured, semi-structured, or unstructured data.

Similarly, you can use a serializer service in a BizTalk pipeline to transform XML to other data formats. By combining a parser and a serializer, you can use Data Transformation to transform any data format to any other data format, via XML.

For more information about creating and deploying services, see the *Data Transformation Getting Started Guide* and the *Data Transformation User Guide*.

About BizTalk

Microsoft BizTalk Server is an integration system that moves data between business applications. The following table describes the levels at which BizTalk can operate:

Level	Description
BizTalk messaging	<p>BizTalk uses a pipeline messaging structure to receive an input message, transform the message to another format, and send the message to a destination.</p> <p>You can think of BizTalk messaging as a way to transmit messages from point A to point B, optionally transforming the data on the way. The message movement is linear, without branch points or conditional logic control.</p>
BizTalk orchestration	<p>Orchestration allows you to define a message flow. The flow can contain multiple steps and conditional logic that determine how to process a message.</p> <p>Orchestration allows an application to have multiple inputs and outputs, with any flow of data between them.</p>

How Data Transformation Enhances BizTalk

Internally, BizTalk works with messages in XML format. The role of Data Transformation is to transform external data formats to and from XML.

Data Transformation provides an integration component, called the Data Transformation Agent for BizTalk, that you can insert in a BizTalk messaging pipeline. The Agent runs a Data Transformation service that performs the transformation.

If you insert the Agent on the input end of a pipeline, it must run a Data Transformation service whose output is XML. This is typically a parsing service.

If you insert the Agent on the output end of a pipeline, it must run a Data Transformation service whose input is XML. This is typically a serialization service.

Optionally, you can insert Data Transformation Agents on both the input and output ends. BizTalk runs the two Agents sequentially on the data. The result is that Data Transformation converts an external format, via XML, to another external format.

You can incorporate a pipeline that uses the Data Transformation Agent in a BizTalk orchestration flow. In this way, you can use Data Transformation in orchestration applications.

Integration Approach

The approach for integrating Data Transformation with BizTalk is as follows:

1. Use Informatica Developer to configure a transformation.
2. In Informatica Developer, deploy the transformation as a service that can run in Data Transformation Engine.
3. Create a BizTalk project that uses the Data Transformation Agent.
4. Configure the Agent to run the Data Transformation service.

For more information about steps 3 and 4, see [Chapter 2, "Using Data Transformation with BizTalk" on page 11](#).

Installation

This section explains how to install the Data Transformation Agent for BizTalk on a Microsoft Windows platform.

System Requirements

You can install the Data Transformation Agent for BizTalk on a system meeting the following requirements:

- A Microsoft Windows platform supporting Data Transformation. For more information about the Windows platform requirements, see the *Data Transformation Administrator Guide*.
- Microsoft BizTalk Server, version 2004 or 2006, installed on the same computer.
- If you install Informatica Developer on the same computer as BizTalk Server 2004, you must install the Microsoft SP2 service pack for BizTalk Server.

Installing

To install the Data Transformation Agent for BizTalk:

1. Confirm that BizTalk is installed on the system and operates properly.
2. If BizTalk is currently running, stop it.
3. Run the Data Transformation setup file, and follow the on-screen instructions.

You must install at least the following components:

- Data Transformation Engine, which is required for the Agent operation
- Data Transformation Agent for BizTalk

On the Service Repository Path Selection page, be sure to enter a real drive and directory path. Data Transformation Agent for BizTalk does not support a virtual repository location, such as one that is defined in the `subst` command.

Uninstalling

To uninstall the Data Transformation Agent for BizTalk:

1. Open the Windows Control Panel and double-click Add and Remove Programs.
2. Remove the Data Transformation software.

Upgrading to a New Version

To upgrade to a new version of the agent:

1. If you are upgrading from version 8.5 or earlier of the agent, uninstall the existing version by using the Control Panel > Add or Remove Programs option.
2. Install the new version.

CHAPTER 2

Using Data Transformation with BizTalk

This chapter includes the following topics:

- [Usage Overview, 11](#)
- [Creating a Data Transformation Service, 12](#)
- [Building a BizTalk Server Pipeline, 12](#)
- [Deploying the BizTalk Project, 14](#)
- [Using the Pipeline in a BizTalk Scenario, 15](#)
- [Running the BizTalk Application, 16](#)
- [Troubleshooting, 16](#)
- [Example: Creating a File-Transfer Scenario that Uses Data Transformation, 17](#)

Usage Overview

Data Transformation integrates into Microsoft BizTalk Server as a custom disassembler, which converts source documents to XML, or as a custom assembler, which converts XML to an output format.

Specifically, you can configure a BizTalk scenario that runs a Data Transformation service on the message. The scenario receives a message, transforms it, and transmits it to a destination.

BizTalk can run a scenario independently, or it can incorporate a scenario in an orchestration application.

The following sections provide detailed instructions for configuring a scenario that uses Data Transformation.

Note: Depending on your BizTalk version, the appearance of the BizTalk windows might differ slightly from the illustrations in this chapter.

Background: BizTalk Objects

In this chapter, you will work with several BizTalk objects.

A BizTalk scenario has a receive port and a send port, which are the input and output ends, respectively.

To use Data Transformation as a custom disassembler (parser), you will build a receive pipeline. You will associate the pipeline with the receive port. More specifically, you will associate the pipeline with a receive location of a scenario.

To use Data Transformation as a custom assembler (serializer), you will build a send pipeline. You will associate the pipeline with the send port of a scenario.

You can also associate receive and send pipelines with orchestration ports.

Steps for Using

To create and use a custom disassembler or assembler, you can perform the following steps:

1. Use Informatica Developer to create a parser, serializer, mapper, or transformer, and deploy it as a Data Transformation service.
2. In Microsoft Visual Studio 2005, create a BizTalk project, and configure a receive pipeline or a send pipeline that uses the Data Transformation service.
3. Deploy the BizTalk project.
4. In a BizTalk scenario, assign the pipeline to a send port, receive location, or orchestration port.
5. Run and test the BizTalk application.

The following sections provide detailed instructions for the steps. At the end of the chapter, we provide a step-by-step example that illustrates how to perform the procedures in a file-transfer scenario.

Creating a Data Transformation Service

In Informatica Developer, create a parser, serializer, mapper, or transformer that processes the desired data, and deploy it as a Data Transformation service (Project > Deploy), which will be available to any Receive Port.

If you plan to use Data Transformation as a disassembler, the output of the service must be XML, and the input must not be XML. Typically, the service runs a parser or a streamer.

If you plan to use Data Transformation as a custom assembler, the input of the service must be XML. The output can have any format. Typically, the service runs a serializer.

For more information about deploying services, see the *Data Transformation User Guide*.

Building a BizTalk Server Pipeline

You must create one or more BizTalk pipelines that use Data Transformation. Each pipeline has one of the following types:

- **Receive pipeline.** Uses Data Transformation as a disassembler.
- **Send pipeline.** Uses Data Transformation as an assembler.

The following paragraphs explain the procedures.

Building a Receive Pipeline that Uses Data Transformation

1. Open Microsoft Visual Studio 2005.
2. To create a new BizTalk project, click File > New > Project.

3. In the New Project window, select BizTalk Projects, select Empty Biztalk Server Project, assign a name such as `Transformation Pipelines`, and select a location for the project.
4. To create a receive pipeline:
 - In the Solution Explorer, right-click the project and click Add > Add New Item > Receive Pipeline.
 - Assign a name to the pipeline such as `DT Receive Pipeline`.The pipeline file, `DT Receive Pipeline.btp`, appears under your project in the Solution Explorer.
5. Configure the pipeline to use Data Transformation as the disassembler:
 - View the toolbox and select the BizTalk Pipeline Components.
 - Find the `DT Disassembler` component in the toolbox, or add it if necessary. For more information, see [“Data Transformation Components not in Toolbox” on page 16](#).
 - Drag `DT Disassembler` to the Disassemble box of the pipeline.
6. Set `DT Disassembler` to work with a specific Data Transformation service:
 - Click `DT Disassembler` in the Disassemble box.
 - In the Properties window, set the `Service` property to the name of the Data Transformation service that the pipeline runs.
7. If you plan to use the pipeline in an orchestration project that uses the BizTalk promote-to-context feature, set the `SchemaPath` property. The property must point to an XSD schema file that defines the XML structure generated by the Data Transformation service, including the elements that are promoted. See the Microsoft BizTalk documentation for an explanation.
8. If the Data Transformation service runs a streamer, you can set the `StreamerChunkSize` property. The property is a buffer size that the system passes to the streamer. The chunk size affects the performance but has no effect on the output. The default is 1024 KB.
9. Right-click the project in the Solution Explorer and click Build.

Building a Send Pipeline that Uses Data Transformation

1. Open Visual Studio 2005
2. To create a new BizTalk project, click File > New> Project.
3. In the New Project window, select BizTalk Projects, assign a name such as `Transformation Pipelines`, and select a location for the project.
4. Create a send pipeline:
 - In the Solution Explorer, right-click the project, and click Add > New Item > Pipeline Files > Send Pipeline.
 - Assign a name to the pipeline, for example, `DT Send Pipeline`.The pipeline file (`DT Send Pipeline.btp`) appears under your project in the Solution Explorer.
5. Configure the pipeline to use Data Transformation as the assembler:
 - View the toolbox, and select the BizTalk Pipeline Components.
 - Find the `DT Assembler` component in the toolbox, or add it if necessary. For more information, see [“Data Transformation Components not in Toolbox” on page 16](#).
 - Drag `DT Assembler` to the Assemble box of the pipeline.

6. Set `DT Assembler` to work with a specific Data Transformation service, typically a serializer. You cannot run a streamer service in an assembler.
 - Click `DT Assembler` in the Assemble box.
 - In the Properties window, set the Service property to the name of the Data Transformation service that the pipeline runs.
7. Right-click the project in the Solution Explorer and click Build.

Deploying the BizTalk Project

After you create a receive or send pipeline that uses Data Transformation, you must deploy the BizTalk project.

This section presents typical instructions for deploying the project. For more information, see the Microsoft BizTalk Server documentation.

1. Confirm that a BizTalk database exists:
 - In Visual Studio 2005, click View > BizTalk Explorer.
 - If no database exists, right-click BizTalk Configuration Databases and click Add Database. Type a period (.) in the SQL Server box. For the database, select `BizTalkMgmtDb`, and click OK.
2. Create a Visual Studio 2005 strong name key for your project:
 - Open a Windows command prompt.
 - Change to the folder where the BizTalk project is stored.
 - Run the `sn.exe` utility with the `-k` switch to create a strong name key file. The utility is located in the Microsoft Visual Studio 2005 installation folder, in the subfolder `SDK\v2.0\Bin`.
 - The command displays a message stating that a key pair has been written.

For example, to create a file called `DTPipeline.snk`, type the following at the command prompt:

```
"c:\Program Files\Microsoft Visual Studio 8\SDK\v2.0\Bin\sn.exe" -k DTPipeline.snk
```

3. Return to Visual Studio 2005, and add the strong name key file to your BizTalk project:
 - In the Solution Explorer, right-click the project and click Properties.
 - In the left pane of the project properties, select Assembly, which is located under Common Properties.
 - In the right pane, find the Assembly Key File property. Click the option at the right of the property, and browse to the strong name key file.
 - Click OK to accept the new property setting.
4. Right-click the project in the Solution Explorer and click Deploy. This deploys the project.

Redeploying

If you later edit the BizTalk pipeline, you must redeploy the project.

To redeploy:

1. Confirm that the project is marked to allow redeployment:
 - Right-click the project in the Solution Explorer and click Properties.

- In the left pane, select Deployment, which is located under Configuration Properties.
 - In the right pane, set Redeploy to True and click OK.
2. Right-click the project in the Solution Explorer and click Deploy. This redeploys the project.

Using the Pipeline in a BizTalk Scenario

After you deploy the BizTalk project, you are ready to use the pipeline in a BizTalk scenario.

You can assign a send pipeline to the send port of the scenario. You can assign a receive pipeline to a receive location belonging to the receive port of a scenario. You can assign either type of pipeline to an orchestration port.

Assigning a Send Pipeline to a Send Port

The following procedure assumes that you already have a BizTalk scenario to which you will add a pipeline.

1. In Visual Studio 2005, use the View menu to open the BizTalk Explorer.
2. Right-click the database and click Refresh.
3. Under the Send Ports node, double-click CM SendPort.

The Static One-Way Send Port Properties Configurations Send General page appears.

4. In the left pane of the Static One-Way Send Port Properties Configurations Send General page, select Send Pipeline. If a send pipeline does not exist, you can create one. For more information, see [“Creating a Disassembling Process” on page 17](#).
5. In the right pane click Send Pipeline, and select the send pipeline from the drop-down list to its right.
6. Refresh the database again.

Assigning a Receive Pipeline to a Receive Location

1. Open the BizTalk Explorer.
2. Right-click the database and click Refresh.
3. Under the Receive Ports node, expand the tree of the receive port. Double-click the receive location.
4. In the Receive Location properties, assign the receive pipeline.
5. Refresh the database.

Assigning a Pipeline to an Orchestration Port

In addition to the above options, you can assign pipelines that use Data Transformation to orchestration ports. You must set the binding of the orchestration port to declarative with a shortcut or to dynamic. For more information, see the Microsoft BizTalk documentation.

Running the BizTalk Application

When you have completed the configuration steps described above, you can run the application in BizTalk Server and test that it works correctly with Data Transformation.

To run the BizTalk application:

1. Close Visual Studio 2005.
2. Open the BizTalk Administration Console.
3. In the left pane, right-click the BizTalk Server and start it.
4. Supply an appropriate input.

For example, if the Data Transformation service is a parser that processes text files, drag an appropriate text file to the receive location. If the service is a serializer, drag an XML file to the receive location.

5. BizTalk processes the file and writes the output to the destination that you defined for the send port. Confirm that the output is correct.

Troubleshooting

The following paragraphs provide some troubleshooting instructions for BizTalk applications that use Data Transformation.

Data Transformation Components not in Toolbox

If the `DT Disassembler` or `DT Assembler` components are not in the BizTalk Pipeline Component toolbox, add them.

To add the Data Transformation components to the toolbox:

1. Click **Tools > Choose Toolbox Items**.
2. Click the **BizTalk Pipeline Component** tab.
3. In the **Name** column, find `DT Disassembler` and `DT Assembler` and check their boxes.

If the components do not appear, click the **Browse** button and select `Itemfield.ContentMaster.BizTalkPipeline.dll` from the Data Transformation installation folder.

4. Click **OK**.

The `DT Assembler` and `DT Disassembler` components appear in the toolbox.

Viewing the Windows Event Log

If your application did not create an output file in the destination folder, BizTalk or Data Transformation might have encountered an error. You can view the error message in the Windows application event log. Look for errors having a BizTalk or Data Transformation label.

To view the event log, navigate to **Console Root/Event Viewer/Application** in the BizTalk Administration Console. Alternatively, open the **Event Viewer** from the Windows Control Panel. Double-click an event to view its details.

You can also view the Data Transformation event log. For more information about the event log, see the *Data Transformation Engine Developer Guide*.

Changing the Type of a Service

If you change the startup component of a transformation in Informatica Developer, for example, from a parser to a streamer, BizTalk may take several minutes to display the new type. You can update the type immediately by restarting the BizTalk service.

Example: Creating a File-Transfer Scenario that Uses Data Transformation

In the above sections, we assumed that you already have a BizTalk scenario, and we provided instructions for using Data Transformation in it.

In this section, we provide a step-by-step example of how to create a simple file transfer scenario. The scenario uses Data Transformation either to disassemble (parse) a source document or to assemble (serialize) the transferred data.

Preliminaries

Before you start creating the scenario, perform these steps, if you have not already done so:

1. Deploy a parser, mapper, or serializer as a service. For more information, see [“Creating a Data Transformation Service” on page 12](#).
2. Create a BizTalk pipeline that uses the Data Transformation service.
If you deployed a parsing service, create a receive pipeline. For more information, see [“Building a Receive Pipeline that Uses Data Transformation ” on page 12](#).
If you deployed a serialization service, create a send pipeline. For more information, see [“Building a Send Pipeline that Uses Data Transformation” on page 13](#).
3. Deploy the BizTalk project in which the pipeline is defined. For more information, see [“Deploying the BizTalk Project” on page 14](#).

Then continue as described below.

Creating a Disassembling Process

If you deployed a Data Transformation parsing service, perform the following steps. The steps create a BizTalk disassembling process that uses your receive pipeline.

If you deployed a serialization service, you must modify the procedure slightly. For more information, see [“Creating an Assembling Process” on page 19](#) before proceeding. Then return here and continue the configuration.

1. In Visual Studio 2005, open the BizTalk project that you created above, if it is not already open.
2. Create a receive port, which will use the Data Transformation receive pipeline that you defined above.
 - In the BizTalk Explorer, right-click Receive Ports and click Add Receive Port.
 - Select a Static One-Way Port and click OK.
 - Assign a name to the port, such as `MyReceivePort1`, and click OK.
3. Define a receive location for the receive port:

In the BizTalk Explorer, right-click the Receive Locations node, which is under the receive port that you created. Click the Add Receive Location option.

Assign a name to the receive location.

4. In the receive-location properties, select Configurations/General and change the Transport Type to FILE.
5. Click the ... symbol to the right of Address (URI). In the dialog box:
 - Enter a receive location, which is a folder path where the receive port will find its input data.
 - Enter a file mask such as *.txt, defining the file type that is processed by the receive port. The file mask should be the file type that your Data Transformation parser accepts as input.
 - Click OK.
 - Set the Receive Handle property to BizTalkServerApplication.
 - Set the Receive Pipeline property to the name of the receive pipeline that you defined above.
 - Click OK.
6. Create a send port as follows:
 - In the BizTalk Explorer, right-click Send Ports and click Add Send Port.
 - Select a Static One-Way Port and click OK.
 - Assign a name to the port, such as MySendPort1, and click OK.
7. In the left pane of the send-port properties, expand the tree and select the Configurations/Transport/Primary node. In the right pane, change the Transport Type to FILE.
8. Click the browse button at the right of Address (URI). At the prompt, enter a destination location, which is a folder path where the send port stores its output.

For the filename, enter OF%MessageId%.xml. The %MessageID% variable means that the send port inserts a unique message ID for each output file that it generates. For example, the send port might output a file called OF{16ADAD18-F50D-4345-8F4B-C2F0CAFBC06F}.xml.
9. Click OK to return to the send-port properties window.
10. Select the Configurations/Send/General node. In this node, you can assign a pipeline to the send port.

Since you are using Data Transformation in the disassembling direction, do not assign the Data Transformation pipeline here. Instead, assign a BizTalk default pipeline that does not change the data. From the drop-down pipeline list, select the following entry:

```
Microsoft.BizTalk.DefaultPipeline.PassThruTransmit
```
11. Bind the receive port that you created to the send port:
 - Select the Configurations/Filters & Mpas/Filters node.
 - Click the right hand side to add a row.
 - In the new row, click the Property column and select BTS.ReceivePortName.
 - In the Value column of the same row, enter the name of your receive port and click OK.
12. Start the send port:
 - In the BizTalk Explorer, right-click the send port and click Enlist.
 - Right-click the send port again, and click Start.
13. Enable the receive location:
 - In the BizTalk Explorer, right-click the receive location, and click Enable.

Creating an Assembling Process

If you deploy a Data Transformation serialization service instead of a parsing service, you must perform the same configuration as for a disassembling process, with one significant exception. You must assign the Data Transformation pipeline to the send port instead of the receive port.

Follow the same steps as for a disassembling process, with the following changes. For more information, see [“Creating a Disassembling Process” on page 17](#).

- In the receive-location properties (step 4), change the file mask to `*.xml`. This means that the input is an XML file.
- In the receive-location properties (step 4), assign the BizTalk default pass-through pipeline, instead of the Data Transformation pipeline.
- In the send-port properties (step 8), change the file name to the appropriate file type. For example, if the Data Transformation serializer outputs text files, change the file name to `OF%MessageID%.txt`.
- In the send-port properties (step 10), assign the send pipeline that uses the Data Transformation service, instead of the BizTalk default pipeline.

Running the Scenario

You can now run the scenario in BizTalk. For more information, see [“Running the BizTalk Application” on page 16](#).

INDEX

A

Agent
for BizTalk [9](#)

B

BizTalk
concepts [11](#)
deploying project [14](#)
integrating with [8](#)
integration procedure [9](#), [12](#)
overview [9](#)
pipelines [12](#)
receive pipeline [12](#)
running application [16](#)
scenario [15](#)
send pipeline [13](#)
system requirements [10](#)
troubleshooting [16](#)

D

deployment
BizTalk project [14](#)

O

orchestration ports
BizTalk [11](#)

P

pipelines
BizTalk [11](#), [12](#)
BizTalk receive [12](#)
BizTalk send [13](#)
ports
BizTalk [11](#)

promote to context
in BizTalk XSD schema file [12](#)

R

receive locations
BizTalk [11](#)
receive pipelines
BizTalk [11](#)
receive ports
BizTalk [11](#)

S

scenario
BizTalk [11](#)
scenarios
BizTalk [15](#)
creating BizTalk [17](#)
send pipelines
BizTalk [11](#)
send ports
BizTalk [11](#)
services
using in BizTalk [8](#)
system requirements
BizTalk integration [10](#)

U

uninstalling
Agent for BizTalk [10](#)

X

XSD schema files
BizTalk promote to context feature [12](#)