Deploying XML Converters™ on Microsoft® BizTalk® Server

Introduction

Microsoft® BizTalk® Server is a Business Process Manager (BPM) enterprise solution that allows users to connect diverse software and then both create and modify the process logic that uses that software. Data inside a BizTalk Server application always moves as XML. Because of this, .NET users often need to integrate conversion operations in the context of BizTalk to manage EDI or legacy formats.

DataDirect XML Converters can be deployed on BizTalk Server, enabling your BizTalk applications to work with business data in any number of non-XML formats — Electronic Data Interchange (EDI) and comma-separated values (CSV) are examples of two file formats commonly found in both business-to-business (B2B) and numerous small- and medium-size business applications.

This document describes how to deploy DataDirect XML Converters for .NET on Microsoft BizTalk to help control the input and output ports of BizTalk applications that need to convert data in native formats to XML.

The BizTalk Architecture – Sending and Receiving Messages

One of the key elements of the BizTalk architecture is processing business messages in XML. BizTalk assumes, therefore, that incoming messages are already in XML, or that they get translated to XML upon reception. Because not all business data is XML, BizTalk provides a mechanism to plug-in third-party components — like DataDirect XML Converters — to convert input and output data from and to XML.

In order to have a flexible architecture, BizTalk allows you to configure a pipeline on input (receive) and output (send) ports that provides a way to manipulate and transform the data before it is stored in the MessageBox. BizTalk stores all messages in SQL Server, as shown in Microsoft BizTalk Server illustration on the following page.

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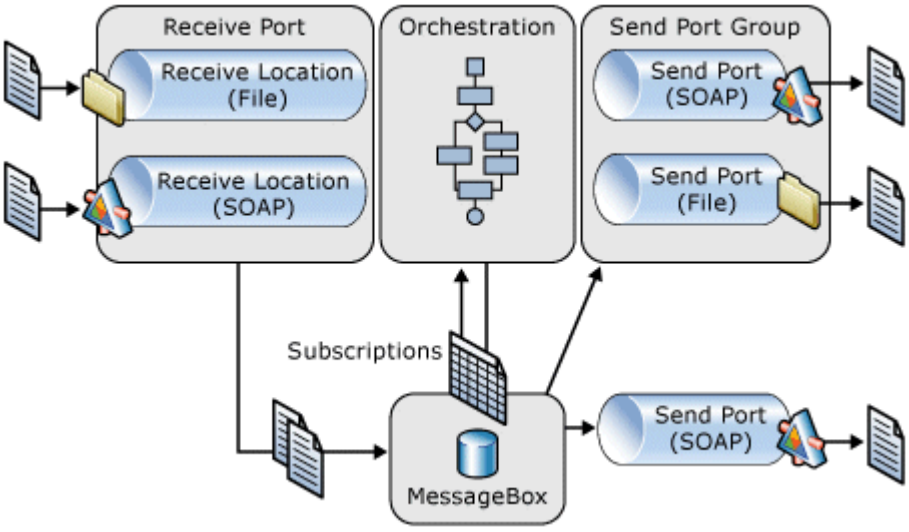
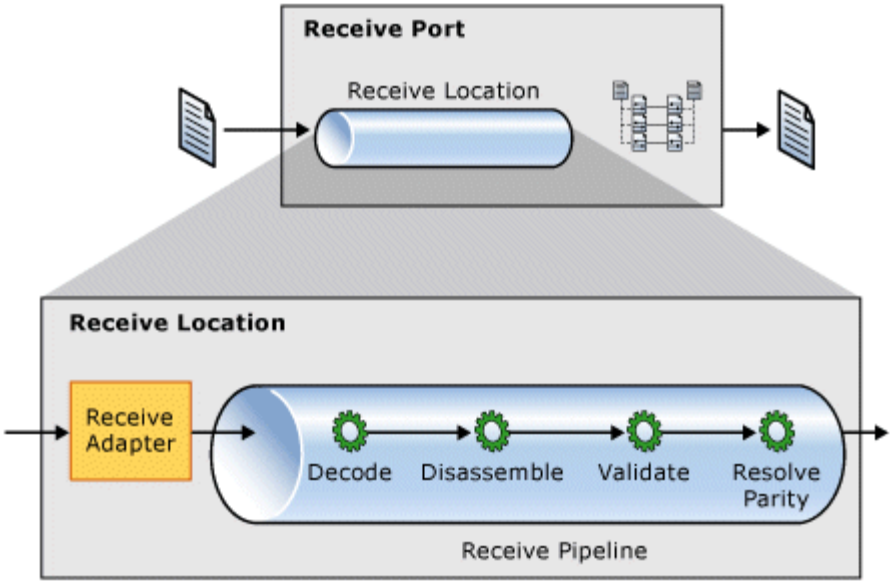
DataDirect TECHNOLOGIES



XmlConverters Disassembler

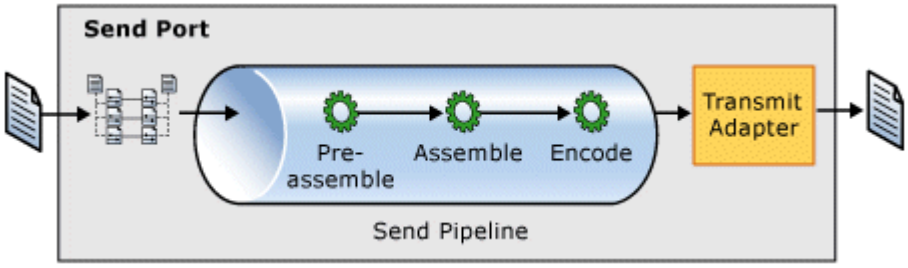
Pipeline processing deals with both message content and message context. Message content is generally handled in the decoding, disassembling, and validating stages, as shown in the following Microsoft BizTalk Server illustration:



The job of the disassembler is to process an incoming message from an adapter, disassembling it into many messages, and parsing the message data. By definition, it expects that data is being converted from a native format to XML. XML Converters provides a disassembler implementation that can be used to convert a variety of flat file formats into XML.

XmlConverters Assembler

When a message is ready to be sent from BizTalk, it undergoes a complementary process in the send port. Maps are applied to messages before the send pipeline is executed, allowing a message to be transformed to a customer- or application-specific format before being processed by the pipeline and sent through the adapter. In the send pipeline, properties are demoted from the context into the message, instead of being promoted into the message context, as shown in the following Microsoft BizTalk Server illustration:



The job of the assembler is to process an outgoing message to an adapter, and to serialize the message data. The DataDirect XML Converters assembler implementation can be used to convert XML into a variety of flat file formats.

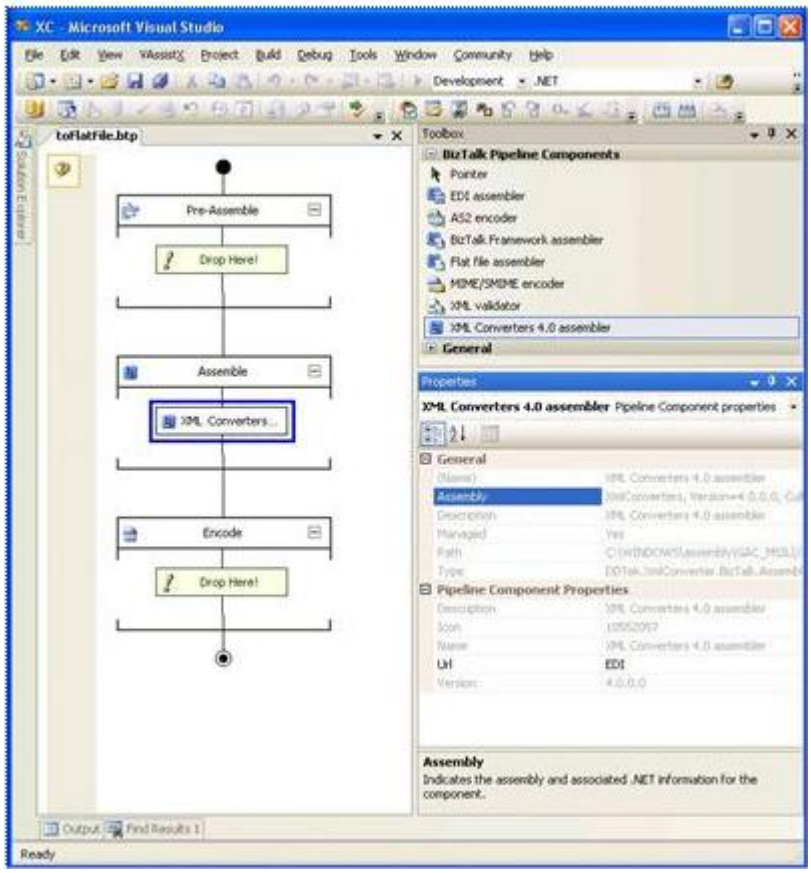
Next Steps

Now that you know a little about the BizTalk Server architecture and how DataDirect XML Converters fit into the overall scheme, let's get started. The first step is to register DataDirect XML Converters as a BizTalk component.

Registering DataDirect XML Converters as BizTalk® Server Components

In order to use DataDirect XML Converters in the BizTalk pipeline visual editor, you need to register the component in Microsoft Visual Studio. To get started:

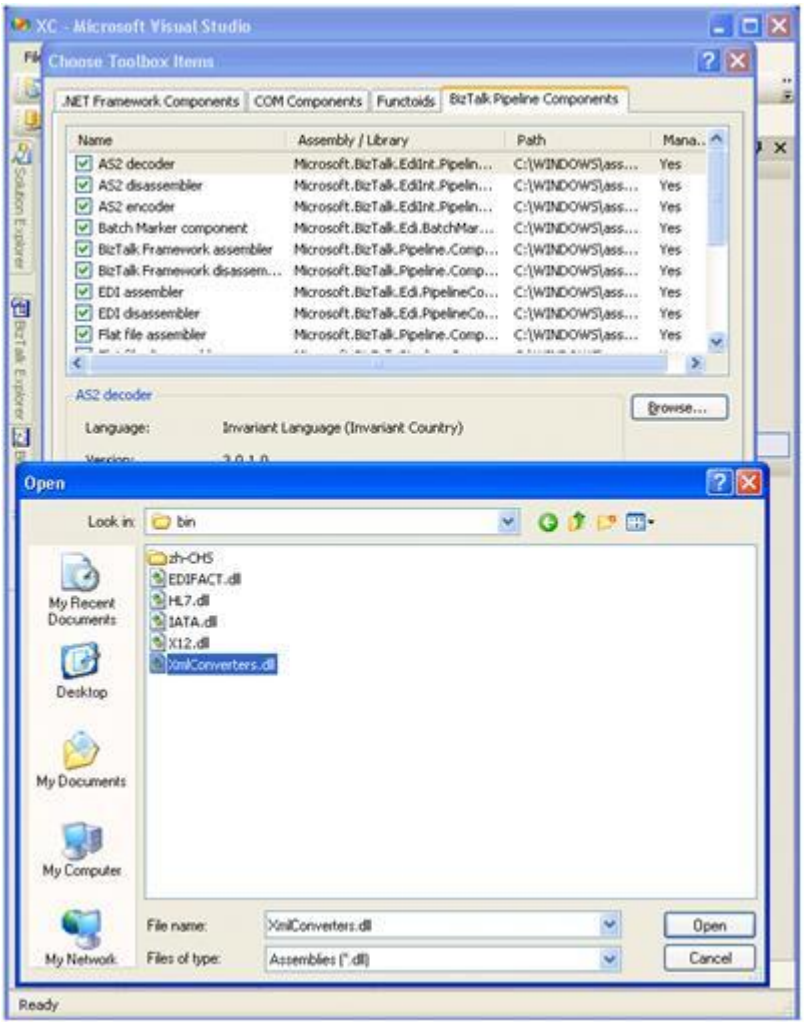
1. In Microsoft Visual Studio, right-click BizTalk Pipeline Components toolbox and select Choose Items.



The Choose Toolbox Item dialog box appears (see next page).

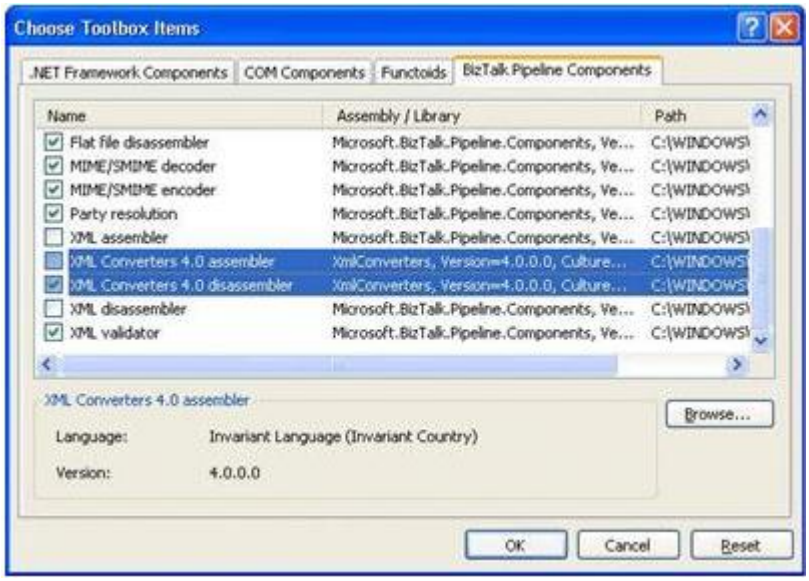
2. In the Choose Toolbox Item dialog box, select the BizTalk Pipeline Components tab and click the Browse button.

   The Open dialog box appears.



3. Navigate to the folder where you installed DataDirect XML Converters, and select XmlConverters.dll and click the Open button.

   XML Converters assembler and XML Converters disassembler appear in the list box.



Next Steps

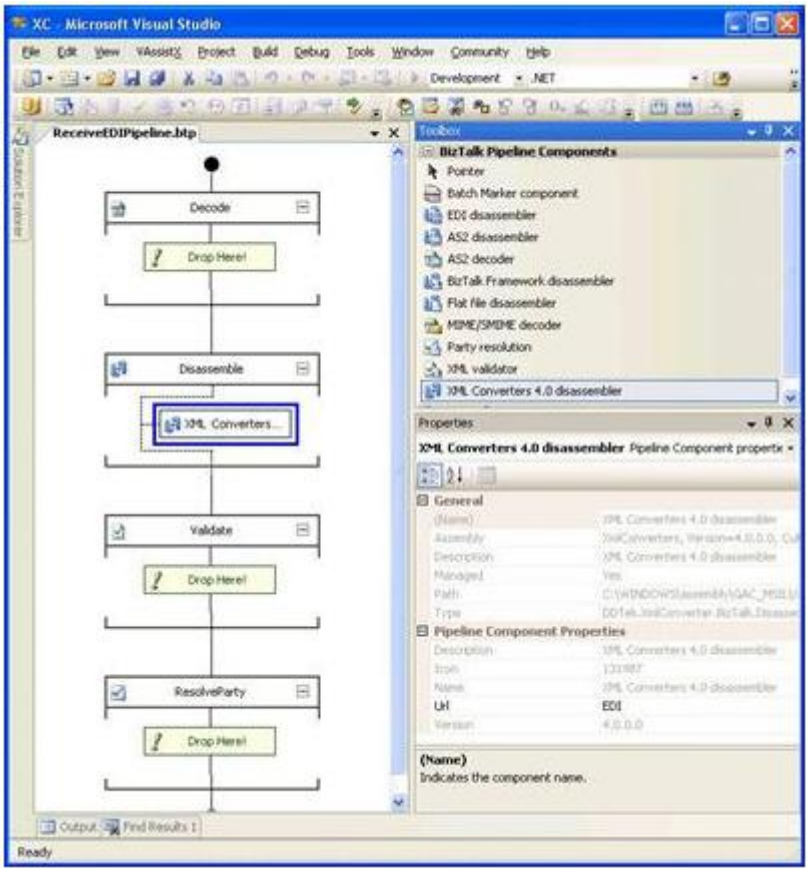
Once you've registered DataDirect XML Converters as BizTalk components, you can build BizTalk send and receive pipelines, as described in the following section.

Building BizTalk® Server Receive and Send Pipelines

Once the registration of the DataDirect XML Converters components is complete, you can manipulate the assembler and disassembler components as you would any other BizTalk components.

Building a BizTalk Receive Pipeline

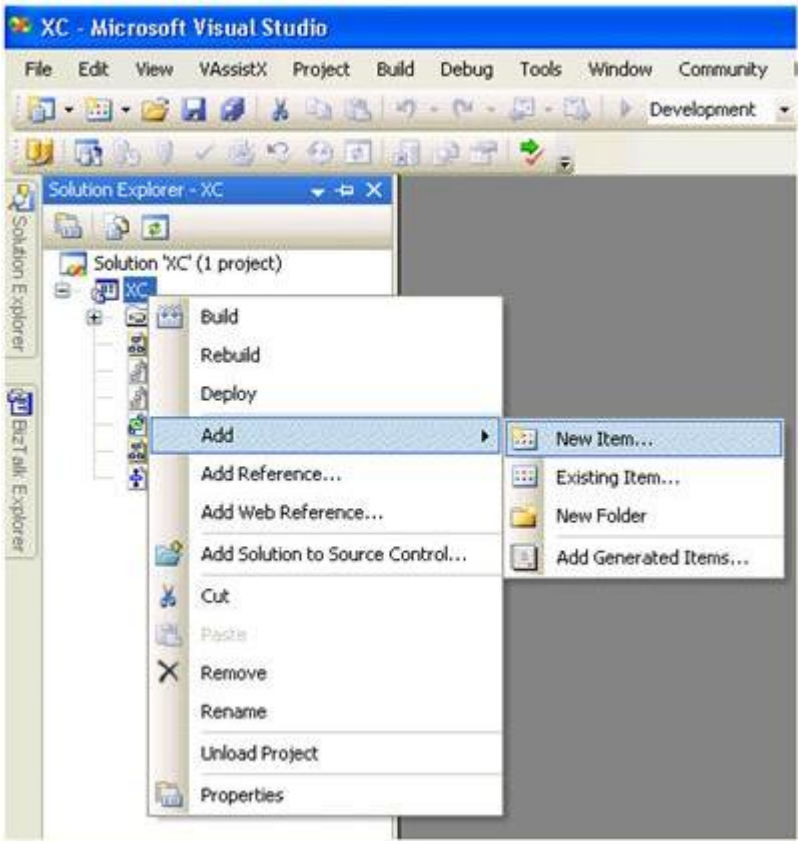
In our case, we want to drag and drop the DataDirect XML Converters disassembler component into the disassemble block in the diagram that represents our receive pipeline, as shown in the following illustration.



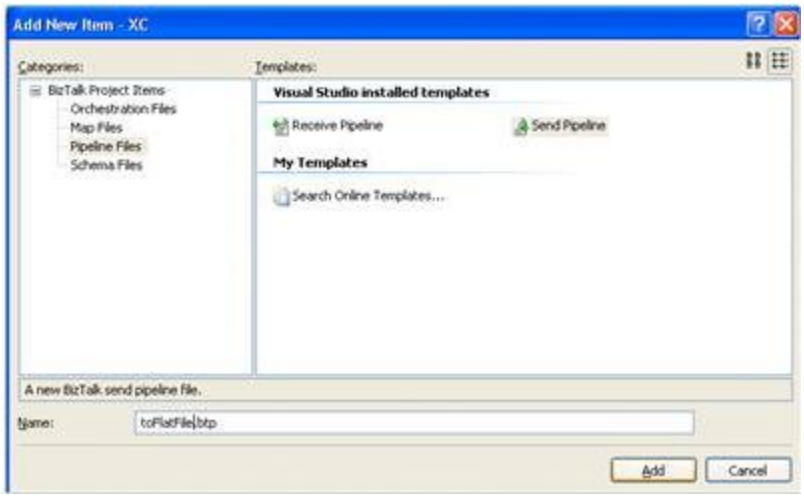
Building a BizTalk Send Pipeline

To create a send pipeline that uses the XML Converters assembler:

1. In Microsoft Visual Studio, right-click on the BizTalk project in the Solution Explorer and choose **Add** > **New Item**.



The Add New Item dialog box appears:



2. Select Send Pipeline and then click the Add button.

   The XML Converters assembler is now listed in the BizTalk Pipeline Components Toolbox and can be added to the send pipeline.

Next Steps

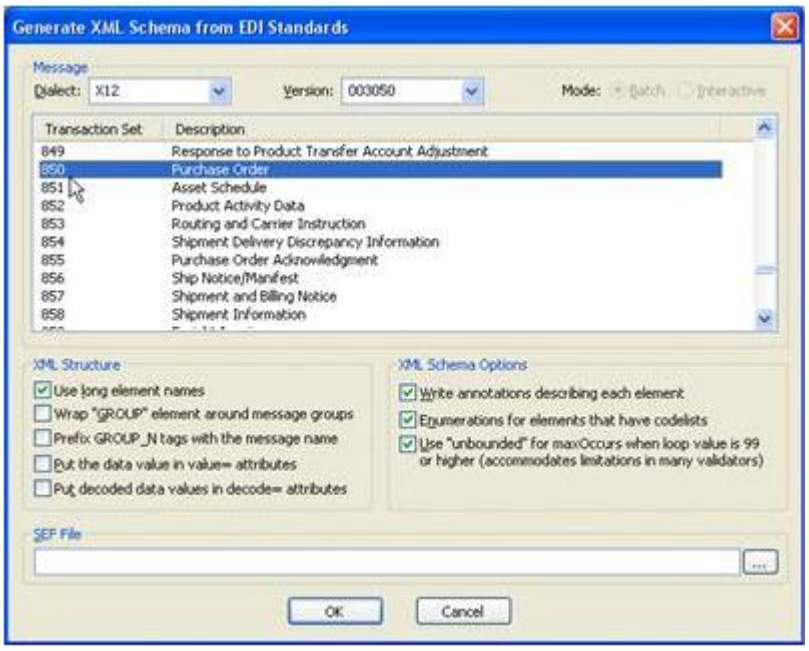
Now that our BizTalk Send and Receive pipelines have been created, let's take a look at an example.

Example: Using a BizTalk Server Process to Convert EDI to XML

To create our BizTalk process, we will build a BizTalk map that translates the purchase order into the order system flat file structure. In order to accomplish this, we need one XML Schema that describes the incoming purchase order and another that describes the outgoing order system flat file. We can use Stylus Studio XML Enterprise Suite to create both XML Schema.

Creating XML Schema from EDI

The Stylus Studio EDI to XSD document wizard lets you create XML Schema from numerous EDI dialects and message types:



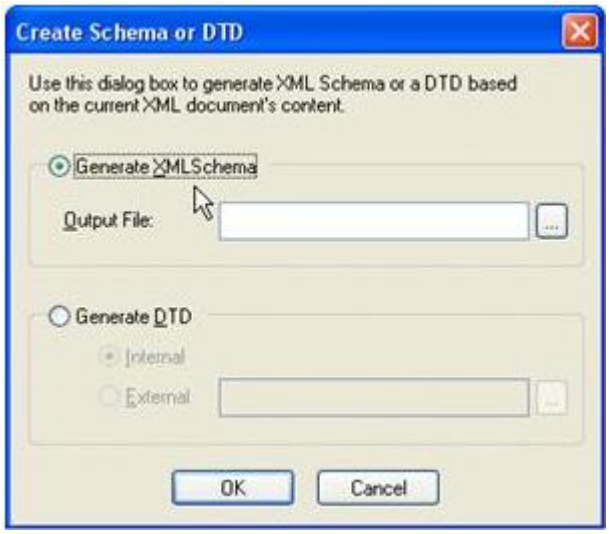
To run this wizard, select **File** > **Document Wizards** from the Stylus Studio menu, and then select **XML Editor** > **EDI to XSD**.

Creating XML Schema from a Flat File

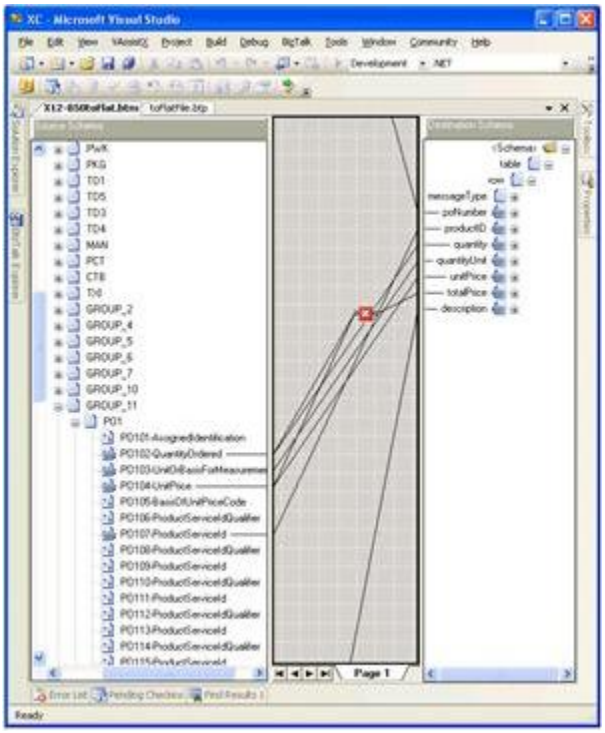
Stylus Studio XML Enterprise Suite also has tools that can help you create XML Schema from other file formats, like CSV (Comma-Separated Values).

To create an XML Schema from a flat file in Stylus Studio XML Enterprise Suite:

1. Load an example of the order system flat file in Stylus Studio.
2. Open it using Stylus Studio's built-in CSV converter, which converts the sample CSV file to XML.
3. Create an XML Schema based on the converted XML – select **XML** > **Create Schema from XML Content** from the Stylus Studio menu.



Once we have XML Schema describing the format of both the purchase order and the order system document formats, we can create a BizTalk map to represent the conversion process, as shown in the following illustration:



Summing Up

DataDirect XML Converters make it easy to use data from numerous file types as XML. You can use DataDirect XML Converters in your Microsoft BizTalk Server applications to access data stored in almost any format as XML.

We welcome your feedback! Please send any comments concerning documentation, including suggestions for other topics that you would like to see, to:

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