VS Process Designer

Tutorial 2: Receiving, Modifying, and Returning Data

In this tutorial, you will learn how a BPEL process can receive data as an input, manipulate it, and return an output. You will also use the XPath Expression Editor for the first time.

Prerequisites:

- Micro Focus Verastream Process Design Studio

- Micro Focus Verastream Process Server, installed and running

- Internet browser

- Some familiarity with XML Schema, WSDL, XPath, BPEL, and Web service standards
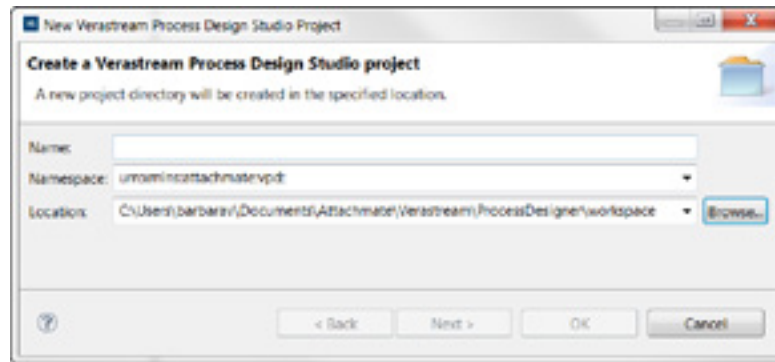
Let's get started.

## CONTENTS

Creating a project

To create the Echo project:

1. From the File menu, select **New Project**.

2. Name the new project **Echo**, then click **OK**.

In this project you can delete the DoSomethingHere sequence. It won't be used in this tutorial.

To delete DoSomethingHere, in the BPEL Editor, either select it and press the Delete key, or right-click it and choose **Delete** from the context menu. The DoSomethingHere sequence includes an AssignValue activity. This will also be deleted.
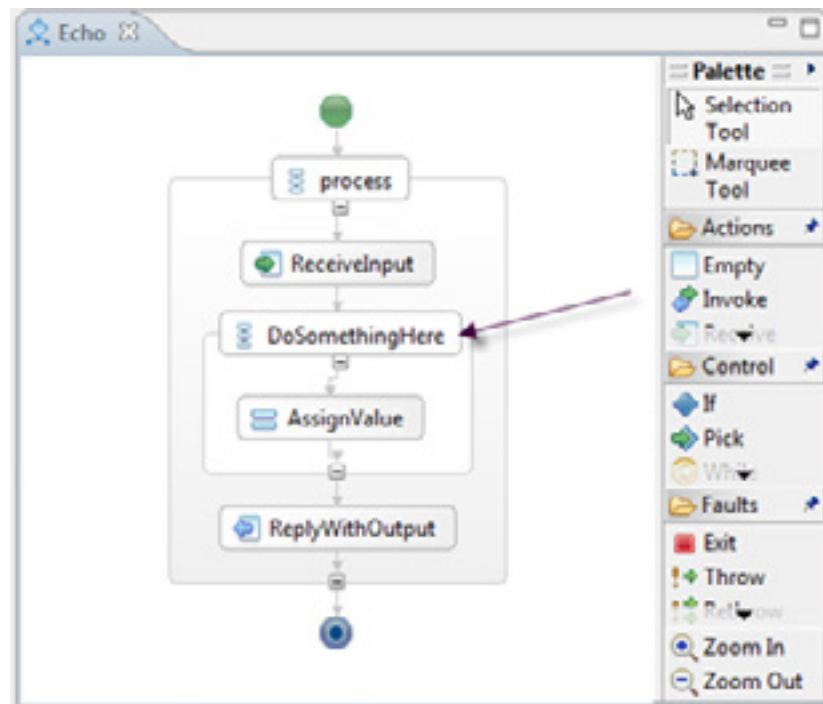
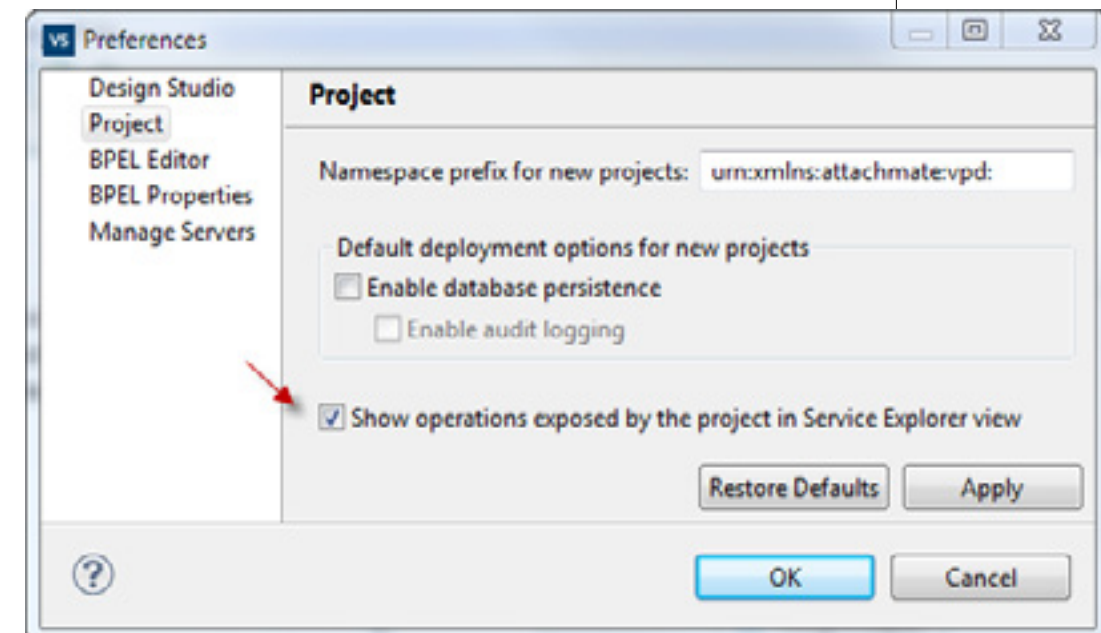## Setting project preferences

You can set project preferences that determine how your project functions. To set preferences, from the Window menu, select Preferences. In the online Help under Setting Preferences you can learn about all the options available to you.

In this tutorial you are going to become familiar with two:

• **Automatically Initialize Variables** - the Process Design Studio initializes variables automatically by default. This preference is set in the BPEL Properties panel of the Preferences dialog box and is enabled by default.

• Enable **Show Operations Exposed by the Project in Service Explorer View** to view the operations for your project. When you select this option, the operations for your project become visible in the Service Explorer section of the Process Design Studio. You can right-click on each operation and select **Rename Operation** to provide a meaningful name to your project operations. This preference is set on the Project panel of the Preferences dialog box.

1. Open the Project panel of the Preferences dialog box.

2. Select Show Operations Exposed by the Project in Service Explorer View. A node called VPD Operations displays in the Service Explorer.

Using the Assign activity

An activity is a step in a BPEL process. It can describe an interaction with a Web service, or it can perform internal process functions.

*A process must contain at least one activity.*

The Process Design Studio groups the available activities in the Palette, which is located on the right side of the designer.

A BPEL process receives, manipulates, and sends data using XML variables. Variables receive data as an input, and pass it as an output.

In the next step you will use an Assign activity. The BPEL Assign activity is used for simple data manipulation. Most of your projects are likely to include at least one Assign to assign value to a variable.

Assign activities can contain one or more copy rules. Copy rules do the actual work--they place a value in a variable's input or output. To get started, you will insert an Assign activity between ReceiveInput and ReplyWithOutput.

1. Locate the Assign activity in the Actions section of the Palette.

2. Select it using your mouse. When you click on the activity the cursor becomes a selection tool.

3. In the BPEL graphical editor, click between ReceiveInput and the ReplywithOutput to add the Assign activity.
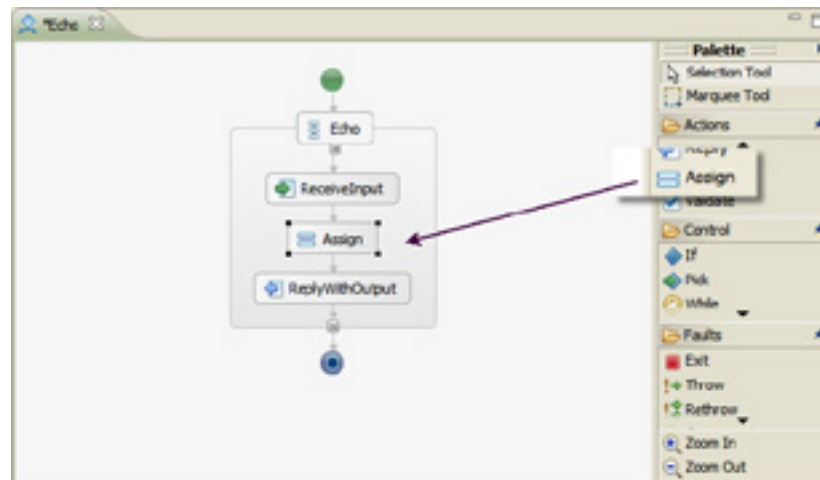
4. Select the Assign activity in the BPEL graphical editor.

5. On the Description tab of the Properties view, replace Assign with whatever name you want to use. (This tutorial will continue to refer to it as simply **Assign.**)
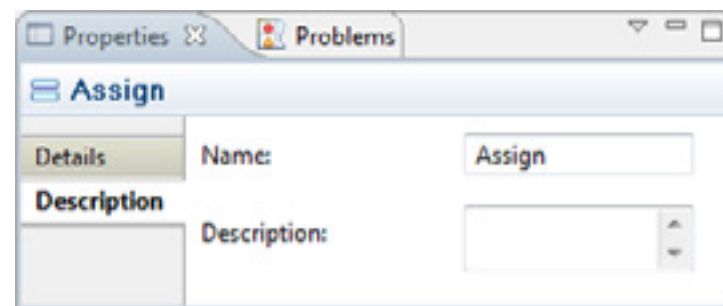
6. Return to the Details tab of the Properties view.

Creating a copy rule

You use copy rules to assign values to variables.

1. To create a copy rule, select the Assign activity, then open the Create Copy Rule dialog box by clicking the green plus sign.

A copy rule is made up of two parts: a "From" and a "To". From can be a fixed value, a variable, or the result of an expression. The value of the From part is assigned to the To part.

The goal of this tutorial is to "echo" the input to the process back to the caller, but with some modification. To modify the input we will use an XPath expression.

2. From the From drop down list, select **Expression**.
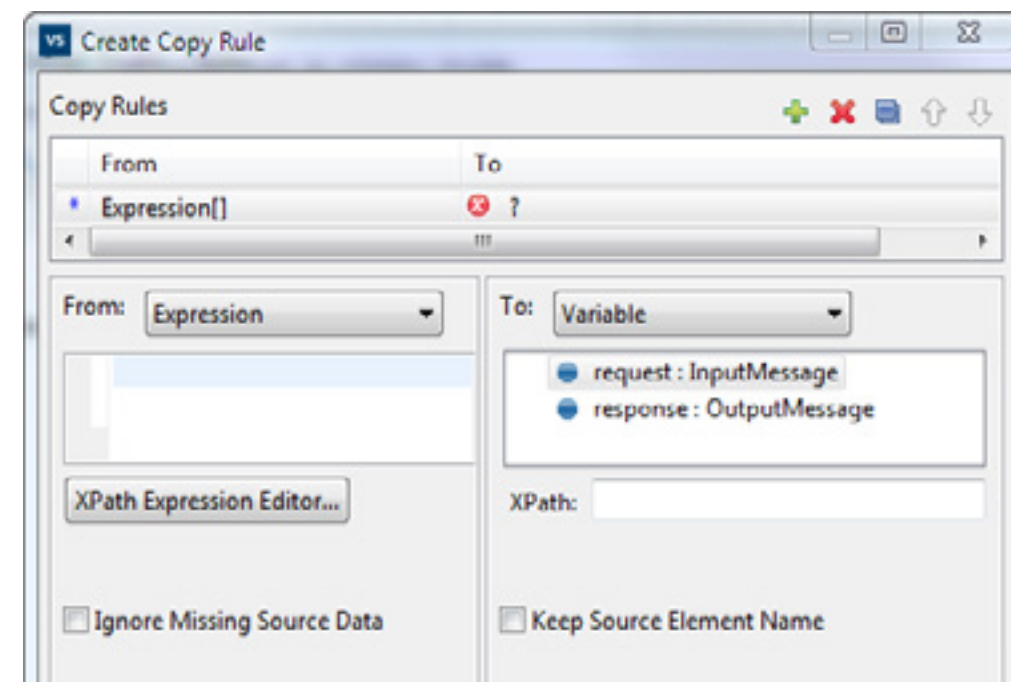
3. Click XPa**th Expression Editor...**.

You can type an XPath expression directly into the editor, but it is much easier to use the XPath Expression Editor.

The XPath Expression Editor contains the variables, functions, and operators available to you.

Your output will be created by concatenating "Echo", a string input by the user, and "right back at you!", so you will use the concat function.

1. In the Functions tree, expand the String node and double-click **concat**. The concat function is copied to the Expression window at the bottom of the editor.

2. Highlight **anyAtomicType_Arg1**. Type **'Echo'** to replace it. The single quotes are required.

3. Highlight **anyAtomicType_OptionalArgs**. Type **'right back at you!'** Remember to include the single quotes.

4. In the Variables tree, expand the list of available input variables, locate the input variable, Input:string.

5. Highlight **anyAtomicType_Arg2** and double-click **Input:string**. This replaces anyAtomicType_Arg2with the input variable.

6. Click OK to close the XPath Expression Editor and return to the Copy Rule dialog box.
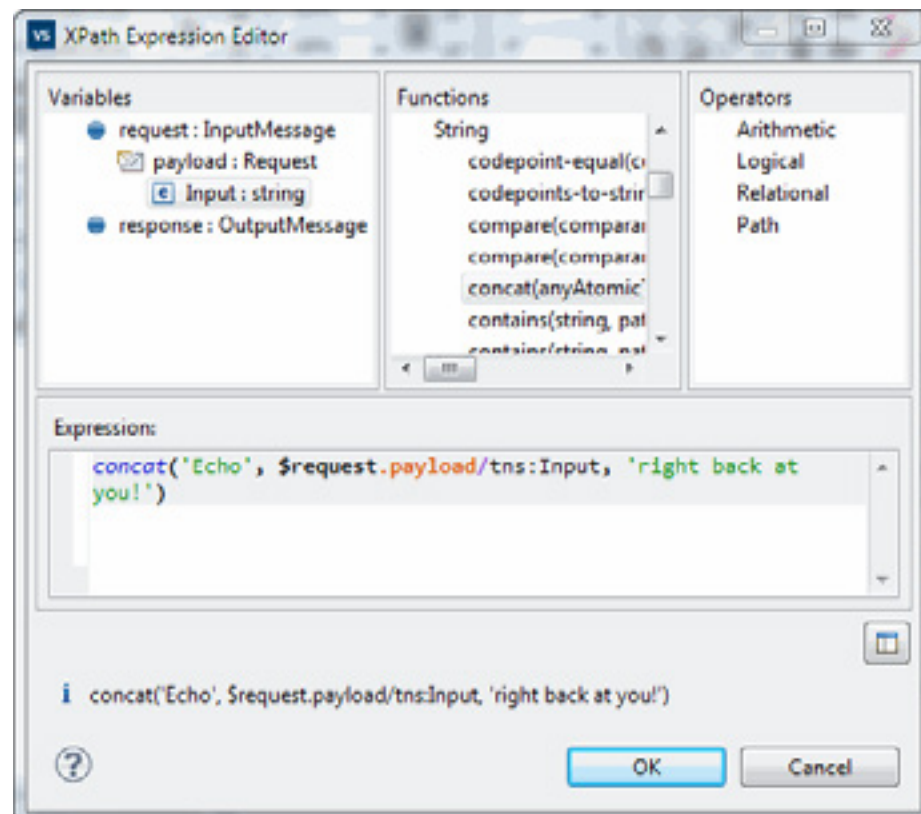

If you decide to manually write your own XPath expressions, you can rely on the XPath Expression Editor to warn you if you make XPath errors. Warnings display at the bottom of the XPath Expression Editor.
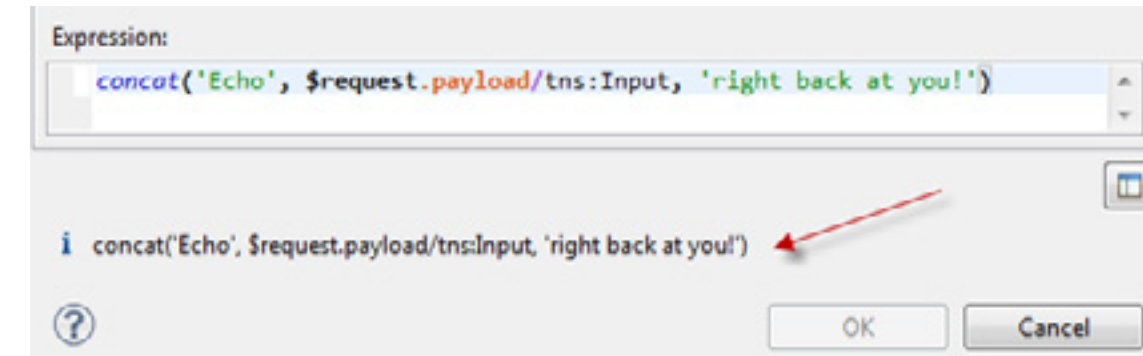
The next step is to assign the result of the expression (which includes the input), to the output variable.

1. On the TO side of the dialog box, expand the output variable, then expand `payload:Response` and then select `Output:string`.

2. Click OK. A new copy rule displays in the copy rule area of the Properties view.

3. Save the project.
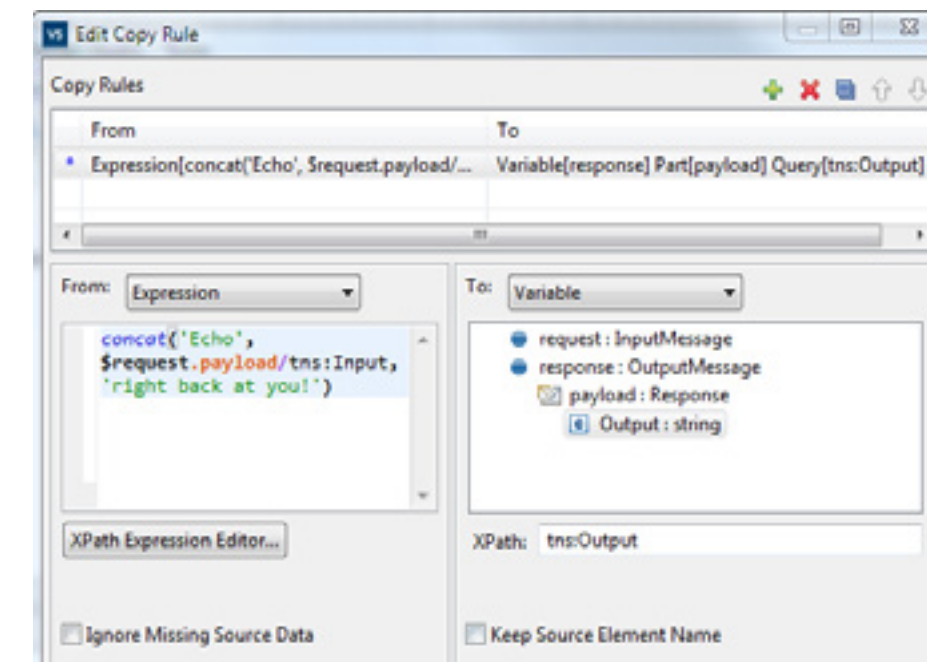
Deploying the process

Your project is complete. The next step is to deploy the project to the Process Server and test it. These steps are the same steps you walked through in the first Hello World tutorial.

To deploy the BPEL project to the process server:

1. From the File menu, select **Deploy to Process Server...**.

2. Enter the name, username and password for the server. The defaults are:

   name: **localhost**   username: **admin**   password: **secret**
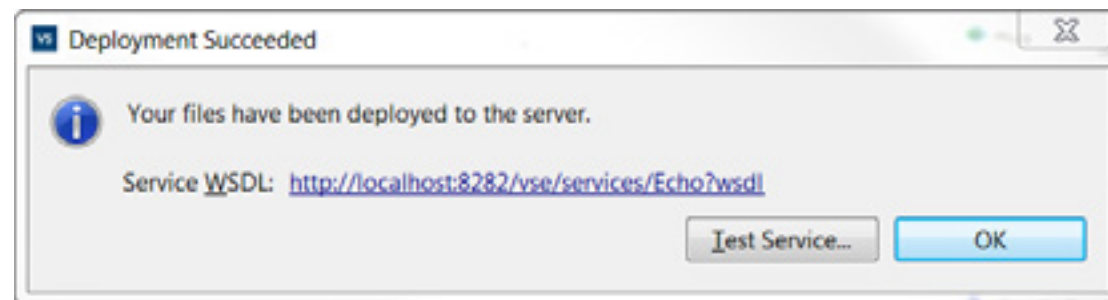
Testing the process

To test your deployment from inside the Process Design Studio:

1. Click **Test Service** (on the Deployment Succeeded dialog) to open the Web Services Explorer in your default Web browser.

2. Select the SOAP11Binding to test against.

3. Enter something in the field below the EchoRequest string. In this example, 'the input'.
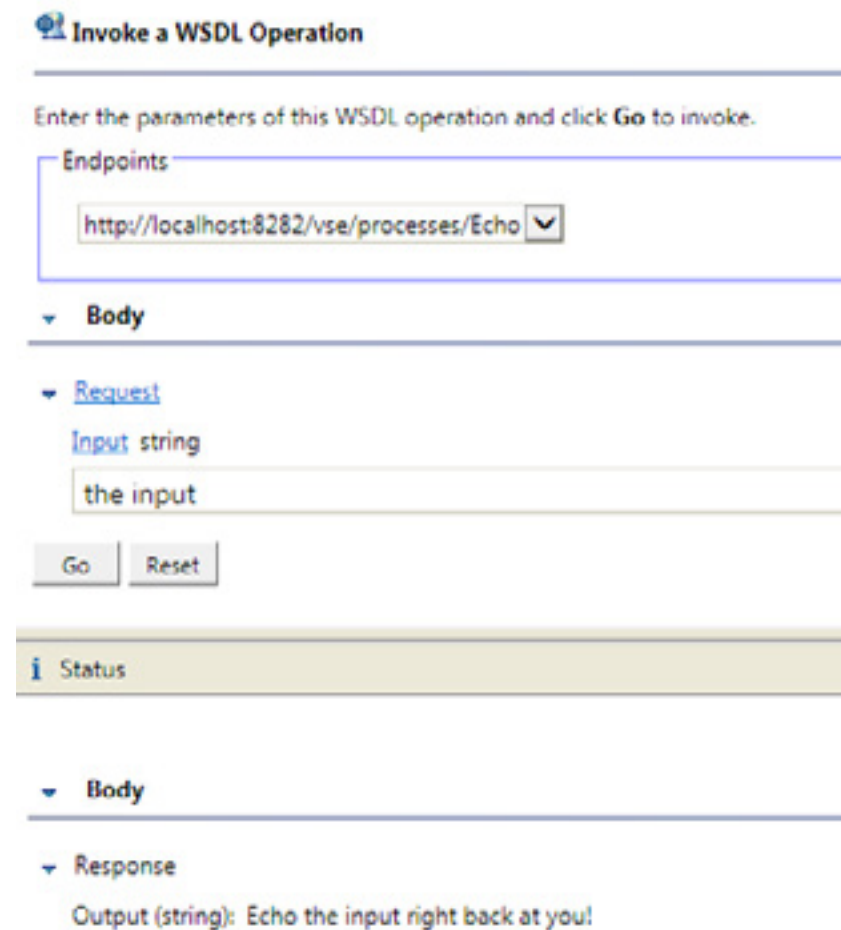
4. Click **Go**. The process response displays in the Status field.