IBM WEBSPHERE PROCESS INTEGRATION 6.0 – LAB EXERCISE

AutoClean – Business Rules and Selectors

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What this exercise is about

This exercise is about learning the basics of Business Rules and Selectors while learning how to use WebSphere Integration Developer V6 and the WebSphere Process Server V6.

Lab Requirements

List of system and software required for the student to complete the lab.

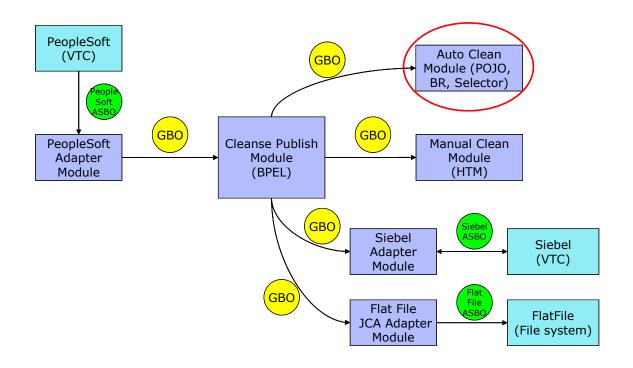
- WebSphere Integration Developer V6 installed
- WebSphere Process Server V6 test environment installed
- Sample code in the directory C:\Labfiles60 (Windows) or /tmp/LabFiles60 (Linux)

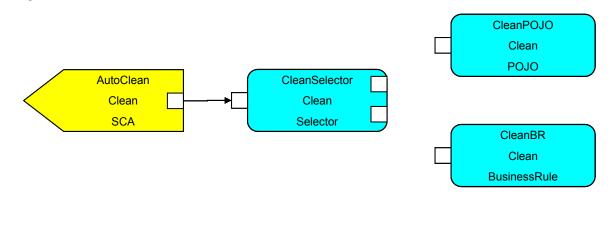
What you should be able to do

- Know how to import files into your integration projects
- Create and use Business Rule Groups, Business Rules, and Selectors
- Install and use the BRManager web tool

Introduction

In the diagram below, the CleansePublish Module in the middle acts as a Client. It sends a GBO or Generic Business Object to have the data in the GBO to be cleaned up for whoever is viewing that data by the AutoClean Module. The AutoClean Module is connected to the CleansePublish Module by way of an Export/Import. So in the lower diagram, the GBO is passed through a Selector called CleanSelector to determine which Target Implementation to use, either the CleanPOJO or the CleanBR business rule. This is choice is determined by a date, either the current date or a date variable mined using Java or Xpath parameters.





Description of the Module

Exercise Instructions

Some instructions in this lab might be specific for Windows platforms. If you run the lab on a platform other than Windows, you will need to execute the appropriate commands, and use appropriate files (for example .sh in place of .bat) for your operating system. The directory locations are specified in the lab instructions using symbolic references as follows:

Reference Variable	Windows Location	Linux Location
<wid_home></wid_home>	C:\Program Files\IBM\WebSphere\ID\6.0	
<wps_home></wps_home>	<wid_home>\runtimes\bi_v6</wid_home>	
<lab_files></lab_files>	C:\Labfiles60	/tmp/Labfiles60
<temp></temp>	C:\temp	/tmp
<solution></solution>	C:\Labfiles60\AutoClean\Solution	/tmp/AutoClean/Solution
<workspace></workspace>	C:\Labfiles60\eXchange\ AutoClean\workspace	/tmp/Labfiles60/eXchange/AutoClean/ workspace

Windows users: When directory locations are passed as parameters to a Java program such as wsadmin, you must replace the backslashes with forward slashes to follow the Java convention. For example, C:\LabFiles60\ would be replaced by C:/LabFiles60/

Part 1: Initialize the Workspace for this Lab Exercise

1. Follow the directions below to initialize the Workspace using the following values:

<WORKSPACE>

C:\Labfiles60\eXchange\AutoClean\workspace

<PROJECT_INTERCHANGE>

C:\Labfiles60\eXchange\CleansePublishLibrary\import\CleansePublishLibrary_PI.zip

<MODULE>

AutoClean

<DEPENDENT_LIBRARIES>

CleansePublishLibrary

Task: Initialize the Workspace for a Lab Exercise

This task is a common description for how to initialize your workspace for doing any one of the eXchange labs. The individual labs each specify variable values for you to substitute for the variables in this description. The variables are:

<WORKSPACE> - the directory path to the workspace.

<PROJECT_INTERCHANGE> - a project interchange file to import into your workspace (if required)

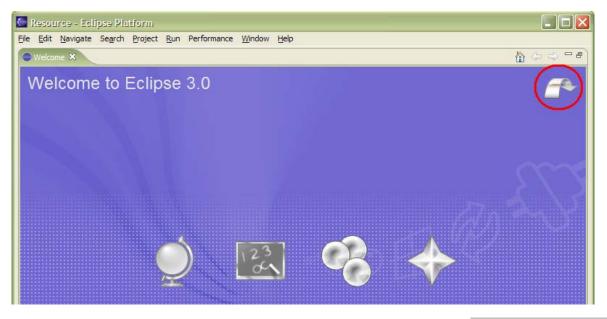
<MODULE> - the name of a new business integration module to be created (if required).

<DEPENDENT_LIBRARIES> - any libraries on which the module is dependent (if required).

- 2. Start WebSphere Integration Developer V6 with a new workspace located at **<WORKSPACE>**.
 - ____a. From Windows Explorer, navigate to the <WID_HOME> directory and double click on wid.exe
 - _ b. When prompted for workspace name, enter the value provided by the **<WORKSPACE>** variable for this lab and click **OK**

Workspace Launcher
Select a workspace
Eclipse Platform stores your projects in a directory called a workspace. Select the workspace directory to use for this session.
Workspace: C:\Labfiles60\eXchange\sample\workspace Browse Browse
Use this as the default and do not ask again
OK Cancel

_ c. When WebSphere Integration Developer V6.0 opens, close the Welcome page by clicking on the Go to the workbench icon (bent over arrow at top-right)



- ____ d. Ensure you are in the Business Integration perspective (See the task Switching Perspectives within a workspace)
- _3. If this lab requires you to import a project interchange file, setup the required libraries and modules for this lab by importing the project interchange file <PROJECT_INTERCHANGE>.
 - ____a. From the menu bar, select File -> Import...
 - ____b. In the Import dialog, scroll down and select Project Interchange

🔄 Import			×
Select Import a project and its de	ependent projects from a	a Zip file.	Ľ
Select an import source:			
 Log File Portal Probe Profiling file Project Interchange RAR file Security Certificate 			
	< <u>B</u> ack <u>N</u> ex	t > Einish	Cancel

___ c. Click Next

____d. In the Import Projects dialog, initialize the From zip file: field to <PROJECT_INTERCHANGE>

____e. Click the Select All button

Import Projects mport Projects Import Projects from		
From zip file:	C:\Labfiles60\eXchange\CleansePublishLibrary\import\CleansePublishLibrary_PI.zip	Browse
Project location root:	C: \Labfiles60 \eXchange \sample \workspace	Browse
Select All Desele	ct All Select Referenced	

____f. Click Finish

- _4. If this lab requires that you create a Business Integration module called **<MODULE>**, complete these steps
 - ____a. Right click on the background of the Business Integration view to access the pop-up menu
 - ____b. Select New > Module

Business Integration 🗙	
#	
CleansePublishLibrary	
New	Project
Open Dependency Editor Show Files	🖉 Module
Сору	🕍 Library

____ c. In the New Module dialog, enter **<MODULE>** for the Module Name

🔄 New Module		
	gration module. A module is a project that is used for gement, organizing resources, and deploying to the Create a new business integration module. A mod	dule is a project that i
Module N <u>a</u> me SampleMod Module Location ✓ Use <u>d</u> efault Directory: C:\Labfiles60\	ule) eXchange\sample\workspace\SampleModule	Browse,
	< Back Next > Einish	Cancel

____ d. Click Finish

- ____5. If this lab requires that <MODULE> needs any <DEPENDENT_LIBRARIES>, complete these steps
 - ____a. In the Business Integration view, right click on the **<MODULE>** you just created to access the pop-up menu
 - ____b. Select Open Dependency Editor

🐮 Business	Integration 🗙	- 8
	🕀 🖻	> 🖃 🔻
⊕… 🔁 Clear ⊡	nsePublishLibrary	
	New	- 1
	Open Dependency Editor	
	Show Files	

- ____ c. In the Dependency Editor, click the Add... button
- ____d. In the Library Selection dialog, select from the list the **<DEPENDENT_LIBRARIES>**
- ___e. Click **OK**
- ____f. Press Ctrl+S to save the dependencies for this module

Part 2: Import Simple Java Implementation (a POJO)

During the first iteration of the cleanse process a simple Java implementation will be created to handle the cleanse process. This means you need a Java implementation to start the process you are going to test. This process involves a Java implementation sending a message through a selector, where the selector chooses to use a POJO or a Business Rule given a certain date.

- _____1. Import the POJO (Java implementation)
 - ____a. Right-click the AutoClean folder in the Business Integration view, select Import...

🗄 Business Integration 🗙 📃 🗖		
	# 🗁 🖃 🔻	
⊡ 🔁 AutoClea 😚 Auto ⊕ 🚰 Busir 🤂 Data	New Open Dependency Editor Show Files	
	💢 Delete	
Exter	🚵 Import	
📗 Fi 🛋 CleanseFi	- A Export	

____b. Select File System, click Next

🚯 Import				×
Select Import resources from the	local file system			
Select an import source:				
Sexternal Plug-ins and	Fragments			
C€) FDL File				
ftg FTP				
l 🖴 ()				
	< Back	Next >	Finish	Cancel

File syst			×
Source	Import from directory Select a directory to import from.	<u>? ×</u>	
From	□ □ IabFiles60 □ □ □		Browse
Filte	Folder: import OK Cancel New Fo	lder	Browse

___ c. Click Browse, click My Computer, <drive>, labFiles60->eXchange->AutoClean->import

____d. Click the check box for **Component1.java**, enter **AutoClean/com/clipsandtacks/scm** for the Into Folder value, click **Finish**.

File system Import resources from the local file system.	
From directory: C:\Labfiles60\eXchange\Autor	Clean\import Browse Clean\import Component1Impl.java
Filter Types Select All Desele	ct All
Into folder: AutoClean/com/clipsandtacks/scm Options: Overwrite existing resources without warni C Create complete folder structure C Create selected folders only	
	< Back Next > Finish Cancel

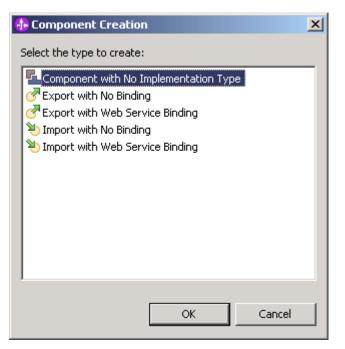
- 2. Create Java Component
 - ____a. Double Click AutoClean folder in Business Integration view to start Assembly Diagram: AutoClean



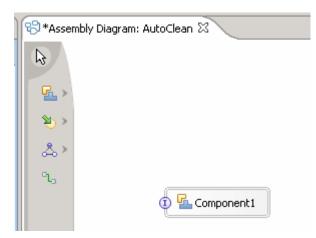
b. Drag the **Clean** interface from the CleasePublishLibrary->Interfaces folder on to the Assembly Diagram.

🗧 Business Integration 🗙	- 8	🕄 Assembly Diagram: AutoClean 🛛
	# 🗁 🖃 🔻	
 AutoClean AutoClean Business Logic Data Types Interfaces Mapping External Access CleansePublishLibrary CleansePublishLibrary Interfaces Interfaces Interfaces CleansePublish CleansePublish CleansePublish Publish Mapping Mapping 		

____ c. Accept Component with No Implementation Type, click OK



____d. A new Component1 will be created



Note: Optionally, the Component1 display name can be changed to a more descriptive name. Right-click, select show in properties, the display name could be edited. For this lab, it is recommended you leave it as Component1

- 3. Pick the Java implementation imported in previous step
 - ____a. Right-click on Component1 in the Assembly Diagram, select Select Implementation->Java

	۲) 🔛	
D Componer	ht1	-
	Undo Move	
\$	Redo	
	Add 🔸	
	Change Type	
	Export	
	Generate Implementation 🕨	
	Select Implementation 🕨	🗿 Human Task
	Open	🛃 Java
	Сору	2 Process
Ê	Paste	E Rule Group
×	Delete	State Machine
	Rename	
	Select All	
	Wire References to New	
	Wire to Existing	
	Wire (Advanced)	
	Test Component	
	Show in Properties	

Note: Optionally, a new java implementation could be generated using the **Generate Implementation...**

_b. Enter **Component1Impl** in the Select entries field, select **Component1Impl** from the Matching types field, click **OK**.

🚯 Pick Implementation
Select entries:
Component1Impl
Matching types:
Component1Impl
Qualifier:
🖶 com.clipsandtacks.scm - /AutoClean
OK Cancel

NOTE: What this does is import some java code that uses the Clean interface. Normally you would Generate Implementation and edit that code. However, in this lab there is no need to generate implementation since we have done it for you, and added the appropriate code to use in this lab.

4. Press **<ctrl>-s** to save the workspace. This will also build the workspace.

Part 3: Create a Business Rule Group

In this section, you will be creating a Business Rule Group. A Rule Group must be set up before creating a business rule implementation (Ruleset or Decision Table). The job of the Rule Group is to group like business rules, and is the SCA component that is exposed as a service (seen by other SCA services). In this example, you will create a Ruleset to see business rule features.

NOTE: You may receive errors in the Problems view as you create components. These errors will come and go as you save/build/finish building pieces.

____1. Create a Rule Group

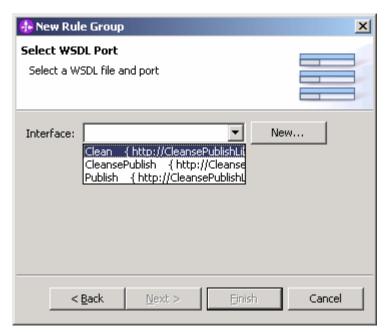
____a. Right click on the AutoClean -> Business Logic -> Rule Groups, select New->Rule Group

\mathbb{E} Business Integration \mathbb{X}		- 8	🔁 *Assembly Diagra
	⊕ 🕀	•	5
🖃 🔁 AutoClean			
		<u>G.</u> >	
🖃 / Business Logic			
Processes	(⇒>		
State Machi	nes		
Rule Groups			
🖙 🔜 Rules		📑 Projec	t
🦳 🧌 Human Tasl	Open		
🔤 🖓 Selectors		E Rule G	roup
🛱 Data Types	📄 Сору		
🕠 🔝 Interfaces	🔁 Paste	📸 Other.	Ctrl+N
🗄 🖓 📩 Mapping			
🗄 🖅 🔁 CleansePublishBPEL	Move	I I	
🗄 🔁 CleansePublishBSM	💢 Delete	1 1	
🗄 🕼 🔄 CleansePublishLibra			
🖃 🚔 Data Types	🚵 Import	1 1	
📋 Clip	🛃 Export	I I	
💼 ClipBG			
ClipItem	🔊 Refresh		
🖃 🔝 Interfaces		·	
Clean	Properties		

____b. Enter CleanseRuleGroup for the Name, click Next

Module:	AutoClean	•	New	
Namespace:	http://AutoClean	 	🔽 Default	
Folder:			Browse	
Name:	CleanseRuleGroup			

____ c. Select **Clean** for the Interface, click **Finish**.



____d. Click cleanseClip on the Clean Interface to open the Rule Group properties

**Note: an error will display on CleanseClip, but will go away once a selection is entered.

Part 4: Create a Business Rule Set

In this section, you will be creating a Business Rule Set from a Rule Group. The Ruleset is one of the two implementations of a Business Rule, and the easiest one to show how a Business Rule works.

NOTE: You may receive errors/warnings in the Problems view as you create components. These errors/warnings will come and go as you save/build/finish building pieces.

- ____1. Create a Rule Set
 - ____a. Select the **cleanseClip** under the **Clean** Interface and Left-click on the **Enter Destination** next to Default Destinations, and select **New Ruleset...**

*CleanseRuleGroup ×	
E General	•Active Destinations 🕂 🕌 💥
▼Interfaces 🚽 🕱	Ø Default Destination Enter Destination
	None
Clean	Start Date End Date New Ruleset
🛛 🎆 deanseClip	New Decision Table

____b. Accept the default values on the New Ruleset screen, click Finish.

File Name Specify the nan	ne and the location for the new file.		
Module:	AutoClean	New	
Namespace:	http://AutoClean	Default	
F <u>o</u> lder:		Browse	
N <u>a</u> me:	cleanseClip		
		Einish	Cancel

__ c. Click 🕈 to add a local variable. Enter **sizeRuleExecuted** for the name, **Boolean** for the Type.

•Variables 🕂 🐈 💥	
Name	Туре
sizeRuleExecuted	boolean

- ____ d. Click to add the first rule, click in the Action area and type outClipBG = inClipBG. You will notice that a Content Assist menu will appear when typing. Either use Content Assist or type in manually.
- ____e. Click **Enter** at the end of the line to enter the initialization of the sizeRuleExecuted variable. The rule should look as follows. If not, simply delete the text of the Action field and repeat selection.

NOTE: To advance to the next entry field in the Action entry, the space bar can be pressed to invoke the next menu.

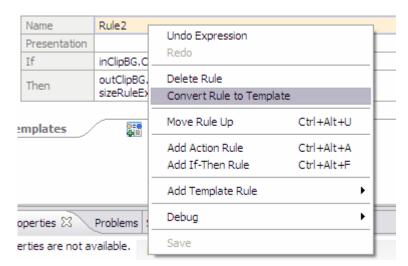
▼Ru	iles	X 🔍 🍇 🗊
	Name	Rule1
	Presentation	
	Action	outClipBG = inClipBG <u>sizeRuleExecuted</u> = false
		•

NOTE: There is no condition on Rule1 since it is an action, it will always be executed first. The reason outClipBG gets inclipBG is to initialize every element in the Business Graph. The sizeRuleExecuted variable is initialized to "false" so that you can test for "true".

_____f. Click to add an If-Then rule. Click in the If field and select or type **inClipBG.Clip.size**, and **==** from the menu, enter **"small"** for the If field. Click in the Then section and select or type **outClipBG.Clip.size** and **=** from the selection menu, enter **"small"**, hit enter to advance to the next line, select **sizeRuleExecuted**, and **=**, enter **true**

Name	Rule2
Presentation	
If	inClipBG.Clip.size == "small"
Then	outClipBG.Clip.size = "small" sizeRuleExecuted=true

NOTE: In order to use the Business Rule Editor web tool to modify the rules of an installed application, the rules must be expressed in the form of a template. This is why you are generating a template this Business Rule so later in this lab you can see it from the Business Rule Editor web tool.



_g. Right-click on Rule 2, and select Convert Rule to Template

- ___h. A template will be generated for Rule 2.
- ___j. Delete the booleanParam2 from the template since it is always set to true when the rule is executed.

Name	Template_Rule2						
Presentation	If inClipBG.Clip.size == (stringParam0) then outClipBG.Clip.size = (stringParam1) sizeRuleEs (
	Name		Туре	С	onstrai	nt	
Parameters	stringPar	ram0	string	N	one		
- arene cere	stringPar	ram1	string	N	one		
	boolean	Param2	boolean	Ν			
If	inClipBG.	Clip.size =	= stringParam0		Undo Expression Redo		
Then	outClipB	G.Clip.size	= stringParam1				
men	sizeRule	Executed =	-true		De	ete Parameter	
perties 🕅	Problems	Servers			De	ete Containers	
		Vaviable	haalaanDaw			ve Parameter Up	Ctrl+Alt+U
traint Variable - booleanParan		e - DooleanParar		1	d Template Parameter	Ctrl+Alt+Shift+P	
			De	bug	•		
					Sa	/e	
					_		

- The place holder for the Boolean variable {2} should be deleted from the presentation line also (above the Parameters area of template, at end of presentation line). ALSO delete the sizeRuleExecuted= from the Presentation area.
- ____k. The Presentation field can be changed to present the rule in a natural language form. The Presentation field will be displayed in the Business Rules Editor tool. Change the Presentation

field in Template_Rule2 to: If the incoming clip size is : {stringParam0}, set the clip size to the standard value : {stringParam1}. Delete sizeRuleExecuted= from the Presentation line.

NOTE: Changing the text in the Presentation field is important because this is all the Business Analyst will see when editing the Business Rules in the Business Rule Editor Web tool.

emplates	📰 🏭 🕽	6					
Name	Template_Rule2						
Presentation	If the incoming cli	If the incoming clip size is : (stringParam0), set the clip size to the standard value : (stringParam1)					
	Name	Туре	Constra	int			
Parameters	stringParam0	string	None				
	stringParam1	string	None				
If	inClipBG.Clip.size == stringParam0						
Then	outClipBG.Clip.size = stringParam1 sizeRuleExecuted =true						

___I. Creating a few rules from the template

1) Click , and select the only option... Template_Rule2



2) The presentation section should now be changed to

Presentation If the incoming clip size is : Enter Value, set the clip size to the standard value : Enter Value

То

Presentation If the incoming clip size is : regular, set the clip size to the standard value :

3) Repeat the above 2 steps to create 4 new rules from Template_Rule2.

NOTE: **<a blank>** means leave a blank. Delete 'Enter Value' in the output area.

- a) With values regular and <a blank>
- b) With values medium and <a blank>
- c) With values large and large
- d) With values jumbo and large
- ____m. Create a final rule to catch any other types of input
 - 1) Click 🛅 to add an If-Then rule.
 - 2) Click in the "If" field and select or type **sizeRuleExecuted == false**

3) Click in the Then section and select or type outClipBG.Clip.size = "?" + inClipBG.Clip.size. This outputs a question mark before the input text to show that a rule was not fired.

____n. Here is what the output of the addition of the Rules should look like :

Name	Rule1
Presentation	
Action	outClipBG = inClipBG sizRuleExecuted =false
Name	Rule2
Template	Template_Rule2
Presentation	If the incoming dip size : small , set the dip size to the standar value : small
Name	Rule3
Template	Template_Rule2
Presentation	If the incoming dip size : medium , set the dip size to the standar value :
Name	Rule4
Template	Template_Rule2
Presentation	If the incoming clip size : regular , set the clip size to the standar value :
Name	Rule5
Template	Template_Rule2
Presentation	If the incoming clip size : [arge], set the clip size to the standar value : [arge]
Name	Rule6
Template	Template_Rule2
Presentation	If the incoming dip size : jumbo , set the dip size to the standar value : large
Name	Rule7
Presentation	
If	sizRuleExecuted == false
Then	outClipBG.Clip.size ="?"+ inClipBG.Clip.size

Templates

Name	Template_Rule2			
Presentation	If the incoming o	lip size : strir	ngParam0	, set the dip size to the standar value ::stringParam1
Parameters	Name	Туре	Constr	aint
	stringParam0	string	None	
	stringParam1	string	None	
If	inClipBG.Clip.size == stringParam0			
Then	outClipBG.Clip.size = stringParam1 sizRuleExecuted = true			

- ____o. Save the Rule Set by pressing **<ctrl>-s**.
- ____p. Add CleanseRuleGroup to the Assembly Editor.
 - 1) Go to the **Assembly Editor** by double clicking the 😚 AutoClean folder
 - 2) Drag ^{CleanseRuleGroup} onto the assembly editor.

\$ •	Component 1
ది> ఒ	1 🔚 CleanseRuleGroup

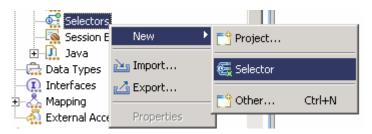
2. Save all, **File->Save All,** this will build the workspace.

👍 B	usine	ss Integra	tion - A	ssembly	Diagr	am: Auto	Clean	- IE
File	Edit	Navigate	Search	Project	Run	Window	Help	
New Alt+Shift+N		•						
	Close Ctrl+F4 Close All Ctrl+Shift+F4							
Save Ctrl+S								
Save As								
Nave All Ctrl+Shift+S								

Part 5: Create a Selector

A simple selector will be created to invoke the simple Java business rule, which at some time will switch to use the business rule. You created and imported the component destinations first so that creating the selector is easier since you already have the destination components in the drop down list.

- 1. Create a new Selector
 - ____a. Expand the AutoClean Module. Expand Business Logic
 - ____b. Right click on the AutoClean -> Business Logic -> Selectors folder, select New->Selector



2. Enter SelectClean for the Name, click Next.

New Select	or		×
File Name Specify the na	me and the location for the new file.		
Module:	AutoClean	▼ New	
Namespace:	http://AutoClean	🔽 Default	
Folder:		Browse	
Name:	SelectClean		

3. Select **Clean** for the interface, click **Finish**.

🚯 New Selector	×
Select WSDL Port	
Select a WSDL file and port	Đ
Interface: Clean { http://CleansePut	New
< <u>B</u> ack Mext > Einish	Cancel

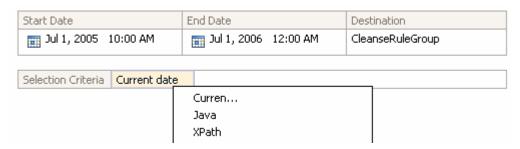
- _____4. Click on the cleanseClip icon 🌞 cleanseClip to open the Selector editor.
- 5. Click Enter SCA Destination next to Default Destination and select Component1

▼Ac	tive Destin	ations	+ ×
0 (Default Des	tination	Enter SCA Destination
			None
	Start Date	End Date	Component1)
			CleanseRuleGroup
			🗟 ManualCleanExport
	Selection Cr	iteria Cu	4
			1

- 6. Click on the **plus icon** ¹/₂ to add date selection entry.
- 7. Change the time to add **1 hour** to the current time under the Start Date field. You will be adding an hour so that in 1 hour, the selector will switch over from using Component1 (the POJO) to the Business Rule.
- 8. Click on the Enter SCA Destination and select CleanseRuleGroup.

Start Date	End Date	Destination
📺 Jul 5, 2005 12:00 AM	📰 Jul 5, 2006 12:00 AM	Enter SCA Destination
		Component1
Selection Criteria Current date		CleanseRuleGroup
		ManualCleanExport

9. Click Enter Method for Selection Criteria, select Current date



____10. Select File->Save All to save and build the workspace

🔂 B	usine	ss Integra	ition - As	ssembly	Diagr	am: Auto	Clean	- I
File	Edit	Navigate	Search	Project	Run	Window	Help	
ſ	Vew					Alt+Shif	t+N	۲
(Close Ctrl+F4							
Close All Ctrl+Shift+F4								
Save Ctrl+S								
Save As								
Land Ctrl+Shift+S Ctrl+Shift+S								

- ____ 11. Place Selector on Assembly Diagram
 - ____a. Double Click 2 AutoClean folder in Business Integration view to open the Assembly Diagram for the AutoClean module.
 - b. Drag 🔄 SelectClean onto the Assembly Editor
 - ____ c. Your Assembly Editor should look like this:

	1 🛃 Component 1
1 5 SelectClean	
	0 🗟 CleanseRuleGroup

NOTE: You cannot wire the Selector to the destination components. However, the Selector is already wired to the two target components - Component1 (the POJO) and the CleanseRuleGroup (the Business Rule). The selector is using dynamic wires to point at Component1 and the CleanseRuleGroup under the covers. Meaning the Selector is already "wired" to those destination SCA components. Any editing of the Target Implementations would need the Selector Editor and not the Assembly Editor.

Part 6: Create an Export on Assembly Editor

In order for these components to be accessed from other modules, you must add an Export. The Export acts like a door for other modules to access the modules inside. Export = Allow others to use this module's services.

- ____1. Open the Assembly Editor
 - ____a. Double Click 🖧 AutoClean folder in Business Integration view to open the Assembly Diagram: AutoClean if not already open. You should have Component1, CleanseRuleGroup, and Selector.
- 2. Create an Export on the Assembly Editor
 - ____a. Open and click the Export button on the Assembly Editor...



- ____b. After clicking the button, move the cursor over the Assembly Editor and click inside the Assembly Editor white space to place the Export on the editor. An Export1 icon will appear.
- _ 3. Change the **Display Name** and **Name** from **Export1** to **AutoCleanExport**. You are doing this because the AutoClean will be connected with the other modules through this export. Naming this export appropriately allows you to easily know what modules you are connecting to.
 - _a. Click on **Export1** in the Assembly Editor so that it is highlighted with focus. (Hint: click on text in icon for one click selecting)

•	Export1
Properties	23 Problems Servers Console
Description	🖄 Export: Export1 (No Binding)
Details	Display name: Export1 Name: Export1
Binding	Folder:

- ____b. Open the **Properties View** (found at bottom of Business Integration Perspective along with Servers, Problems, Console)
- ____ c. Change the Display Name and Name from Export1 to AutoCleanExport

	4 AutoCleanExport
•	
9	
Properties	Problems Servers Console
Description	🖄 Export: AutoCleanExport (No Binding)
Details	Display name: AutoCleanExport Name: AutoCleanExport
Binding	
	Folder:
	Descrip <u>t</u> ion:

- 4. Add the Clean interface to the Export. The reason you need to add an interface is to define the inputs and outputs of the module, so requests from clients know what datatypes the module uses.
 - ____a. Right click on the AutoCleanExport in the Assembly Editor and choose Add Interface.

AutoCleanExport	Undo Move	
	Add Interface	
	Generate Binding	

- ____b. Select the Clean interface when prompted by the Add Interface wizard and click OK.
- ____5. Wire the Export to the Selector. Wiring the Export to the Selector creates the bridge that allows other SCA services to use the Selector.



- ____a. Click the Wire button on the Assembly Editor toolbar
- b. Click on AutoCleanExport first, then on the SelectClean selector. You will notice a wire will follow wherever you click the second time. In this case, the first click is on the Export, then on the Selector. Click OK on any window that may pop up.
- 6. Your Assembly Editor should now look something like the screenshot below.

		Component1
D 🛃 AutoCleanExport	🗊 💽 SelectClean	
		1 🛱 CleanseRuleGroup

7. Select **File->Save All** to save and build the workspace.

🚯 B	usine	ss Integra	tion - As	ssembly	Diagr	am: Auto	Clean	- II
File	Edit	Navigate	Search	Project	Run	Window	Help	
New Alt					Alt+Shif	t+N	•	
Close						Ctrl+F4		
Close All						Ctrl+Shi	ft+F4	
🔚 Save Ctrl+S								
Save As								
آ <u>ي</u> ة	5ave A	.11				Ctrl+Shi	ft+S	

You now have created an export so this Selector/Business Rule module can be accessed and used by the other modules.

Part 7: Publish the AutoCleanApp

In order to see the Business Rules with the Business Rules Editor Web tool and to test the Business Rules using the Component Test feature in WebSphere Integration Developer, you must publish the application to the WebSphere Process Server. Along with the tooling there is a full version of the WebSphere Process Server that you can use to auto-publish to. You could manually install the application using the server Administrative Console. However, this can be accomplished much quicker by adding the project to the server from the tooling.

1. **Start server** from the Servers View and wait for it to start successfully.

Properties	Problems	👫 Servers 🗙	🗱 🕥	ð 🗇		14 🔁 – 🗖
Server					1	Host name
webSp	here Proce	ss Server v6.0	S	tart the se	rver	localhost

2. Right click on the WPS Server in the Servers View and choose Add and Remove Projects

	Add and remove projects
Đ, D,	Run universal test client Restart universal test client Run administrative console Reconnect debug process Create tables and data sources
Properties Problems 👯 Se Server WPS Server v6.0	C Run external admin script

3. Click the Add button to add the AutoCleanApp to the WPS server. Click Finish.

🚯 Add and Remove Project	ts	×
Add and Remove Projects Modify the projects that are c	onfigured on the server	
Move projects to the right to co	nfigure them on the server	
<u>A</u> vailable projects:		Configured projects:
		⊞…(a AutoCleanApp
	A <u>d</u> d >	
	< <u>R</u> emove	
	Add All >>	
	<< Remove All	
1		
	< <u>B</u> ack <u>N</u> ext >	<u>Einish</u> Cancel

4. WebSphere Integration Developer will start the server automatically to publish the application if the server is not already started.

Update Business Rules using the Business Rule Editor Web tool

The Business Rule Editor web tool allows a Business Analyst or a less technical/more business minded person to make business rule changes

1. The Server should already be started and the BRManager Web application already installed.

NOTE: For this lab, we have already installed the BRManager for you. If you are not using a lab system or you are trying this lab on your own system, you can follow the specific steps to install the BRManager Web Tool provided below.

The BRManager Web tool is used to edit, delete and create Business Rules that have been "templatized" and are running on the WebSphere Process Server or WPS. You can only see Business Rules that have been converted to a template. For instance, Business Rules converted in the tooling or WebSphere Integration Developer (WID) can be seen in the BRManager web tool. The Business Rule Editor web tool allows a Business Analyst or less technical, more business-minded person to make business rule changes without having to restart the server or the application. The web tool is part of the runtime (WPS), and not part of the tooling (WID).

This task assumes that you have WebSphere Integration Developer V6 and the WebSphere Process Server V6 test environment that comes with WebSphere Integration Developer V6 started.

The following files, included in the runtime, are needed to install the Business Rule Editor web tool:

1.) installBRManager.jacl	(located at <was_home>/bin)</was_home>
2.) brmanager.war	(located at <was_home>/installableApps)</was_home>

These two files are provided for you.

There are **3** requirements to use the jacl file.

- Any security setting of WAS is set to be disabled
- Code page of command prompt or shell is set to be US environment
- WPS Server must be started

Install instructions

- 2. Run shell (for LINUX) or open a command prompt (for Windows) and change directory to <WAS_HOME>/bin (ex: cd C:\WID\runtimes\bi_v6\bin)
- 3. Make sure the code page is set to US by typing chcp 437 on Win32 machines, LANG=C then LC_CTYPE=C for LINUX machines
- _____ 4. Run the following command

Win32 : wsadmin.bat -f installBRManager.jacl LINUX : ./wsadmin.sh -f <full_path>/installBRManager.jacl

5. The business rule Web tool will now be installed and started. You will be able to see the app in the Admin Console under Enterprise Applications (application is named BRManager in list of apps).

Access the web tool by opening a browser and plugging in this URL http://localhost:9080/br/webclient/

Access the BRManager Web Tool by opening a browser and entering in this URL <u>http://localhost:9080/br/webclient/pages/index.jsp</u>



NOTE: If the BRManager does not pick up any business rules at first time, simply restart the server.

6. Once you can access the application, open the CleanseRuleGroup by clicking the **plus box [+]** and open cleanseClip in the same way. Open the cleanseClip ruleset by double clicking the **lower cleanseClip link**.



Welcome Logout He	2lp		
Publish and Revert Rule Books			
Rule Books			
🗆 脑 CleanseRuleGroup	Business Rules Resources	Description	Action
cleanseClip	🗆 🐚 <u>CleanseRuleGroup</u>		
Ecleansechp	🖃 💼 <u>cleanseClip</u>		Edit
	<u> </u>		Edit

7. These are the rules that were deployed when you published the AutoClean Application. Click the **Edit** button at top to edit the templates you set up

🏶 Web Browser 🗙					
http://localhost:9080/br/webclient/	/pages/index.	jsp		💽 🕨 🐄	• 🗢 🗉 🔗
Welcome Logout H	lelp				
Publish and Revert	cleans	clip Ruleset			
Rule Books GeanseRuleGroup CleanseClip CleanseClip	Bac	Edit Copy			
a cleanseClip	Last Published Description		Jul 14, 2005 11:00 (Local Time)	Status	Original
	Rules				
	Name	Rule			
	Rule2	If ithe incoming clip	o size is : small , set the clip size to the standard size : small		
Rule3 If ithe incoming clip size is : regular, set the clip size to the standard size :					
	Rule4 If ithe incoming clip size is : medium , set the clip size to the standard size :				
	Rule5	If ithe incoming clip	o size is : large , set the clip size to the standard size : large		
	Rule6	If ithe incoming clip	o size is : jumbo , set the clip size to the standard size : large		

8. With the Web tool, you can change template values, move rules up or down for order of execution (top first, bottom last), and the ability to delete a templatized rule. If the rule is not templatized, you or a business analyst will not be able to see those rules in the Web tool.

Web Browse	rX		
http://localhos	t:9080/br/webclient/pages/ind	x, jsp	💽 🕨 🎋 • 🗇 🗉 🤣
Welcome	Logout Help		IBM.
> CleanseRul	eGroup > cleanseClip		
Edit Mod	le:cleanseClip - Rul	eset	
Save	Cancel M	essages:	
General Info	ormation		
Last Publis	shed	Jul 14, 2005 11:00 (Local Time)	Status *Original
Description	n		A V
Rules			
New	Rule from Template		
Name	Rule		Action
Rule2	If ithe incoming clip size	is : small , set the clip size to the standard size : small	4 Delete
Rule3	If ithe incoming clip size	is : regular , set the clip size to the standard size :	👌 😯 Delete
Rule4	If ithe incoming clip size	is : medium , set the clip size to the standard size :	🕀 😚 Delete
Rule5	If ithe incoming clip size	is : large , set the clip size to the standard size : large	🕹 😚 Delete
Rule6	If ithe incoming clip size	is: jumbo , set the clip size to the standard size : jumbo	分 Delete

9. Go to the rule with Jumbo and change the result string from **large** to **jumbo**

	1.000			
ittp://localhos	st:9080/br/webclient/pages/index.	isp		🛉 😽 • 🗇 🔶 🚳 🔗
	leGroup > cleanseClip de:cleanseClip - Rules	et sages:		
General Inf				
Last Publi	shed	lul 14, 2005 11:00 (Local Time)	Status	*Original
Descriptio	n			×
Rules	Rule from Template			
Name	Rule		Actio	n
1	Rule	: small , set the clip size to the standard size : small	Action	n Delete
Name	Rule If ithe incoming clip size is	: small , set the clip size to the standard size : small		International Action of the Ac
Name Rule2	Rule If ithe incoming clip size is If ithe incoming clip size is		\$	Delete
Name Rule2 Rule3	Rule If ithe incoming clip size is If ithe incoming clip size is If ithe incoming clip size is	: regular, set the clip size to the standard size :	\$ \$	Delete

____ 10. Click the **Save button**

🖗 Web Browse	×	
http://localhos	t:9080/br/webclient/pages/index.jsp	💽 🕨 🎋 • 🗇 🖷 🔗
Welcome	Logout Help	
> CleanseRul	eGroup > cleanseClip	
Edit Mod	e:cleanseClip - Ruleset	
Save	Cancel Messages:	
General Info	rmation	
Last Publis	hed Jul 14, 2005 11:00 (Local Time)	Status *Original
Description	1	A
Rules		
New	Rule from Template	
Name	Rule	Action
Rule2	If ithe incoming clip size is : small , set the clip size to the standard size : small	👴 Delete
Rule3	If ithe incoming clip size is : regular , set the clip size to the standard size :	🚯 😚 Delete
Rule4	If ithe incoming clip size is : $\verb medium $, set the clip size to the standard size :	🕀 😚 Delete
Rule5	If ithe incoming clip size is : large , set the clip size to the standard size : large	🕀 😚 Delete
Rule6	If ithe incoming clip size is : $jumbo$, set the clip size to the standard size : $jumbo$	分 Delete

_____ 11. Click the **Publish and Revert** link to publish the changes to the application server

tp://localhost:9080/br/webclient	X						
Welcome Logout H	Help						
Publish and Reven	cleans	eClip - Rules					
Rule Books	Back	Edit Copy	Messages: "cleanseClip" has been temporar You may publish the changes from		" page.		
a cleanseClip	General Information						
	Last Published Description		Jul 14, 2005 11:00 (Local Time)	Status	Local Change		
	Rules						
	Name	Rule					
	Rule2	If ithe incoming clip size is : small , set the clip size to the standard size : small					
	Rule3	If ithe incoming clip size is : $\ensuremath{\text{regular}}$, set the clip size to the standard size :					
	Rule4	If ithe incoming clip size is : medium , set the clip size to the standard size :					
	Rule5	If ithe incoming clip size is : large , set the clip size to the standard size : large					
	Rule6	If ithe incoming clip size is : jumbo , set the clip size to the standard size : jumbo					

12. Once here, you can either revert the changes you made or publish them. Click the **Publish** button.

tp://localhost:9080/br/webclient	/pages/inde>	<.jsp			▶ 🎭 • 🗇 → 🔳
Velcome Logout F	lelp			0	
Publish and Revert	Publi	sh and Revert			
 Rule Books CleanseRuleGroup cleanseClip cleanseClip 		Rusiness Bures Resources	22		
		rt local changes, press "Revert" butto	in.		
		rule pages to publish.			
		rule pages to publish. Resources	status	Description	Action
		rule pages to publish.	Status	Description	Action
		rule pages to publish. Resources		Description	Action

Now, if we were running this application on a production server the input "jumbo" would produce "jumbo", instead of "large" like we initially set up in the business rule.

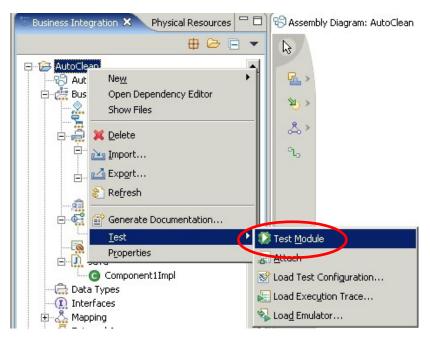
NOTE: If you would like to see how you can edit Selector information, open the Administrative Console by right clicking on WebSphere Process Server V6.0 in the Servers View, and selecting **Run Administrative Console**. Log in using any username and navigate to Application servers > server1 > Selectors and take a look at the options.

Part 8: Test the Business Rule using Component Test

After wiring the components together, its time to test and see if the business rule works. In this section, you will learn to test a business integration module using the component test feature of WebSphere Integration Developer v6.0.

Component test is a feature of the Eclipse-based WebSphere Rational products from which WebSphere Integration Developer is built upon.

- 1. Make sure the server is started. Component Test will not run if not started.
- 2. Run Component Test on the cleanseClip Business Rule
 - ____a. Right click on the module (in this case the AutoClean module, top most folder) and chose Test > Test Module....



NOTE: You can also open the AutoClean Assembly Editor and right click on the component you would like to test and select Test Component.

____b. Look under detailed properties section of the Component Test

Under configuration, you should have **Default Module Test**. For Module, you should have **AutoClean** Under Component you should have **CleansRuleGroup**. If you do not, select the drop down menu and choose **CleanseRuleGroup**. CleanseRuleGroup is the Rule Group that points to cleanseClip rule set. The interface you will be using is the **Clean** interface, and the operation you are testing is

The interface you will be using is the **Clean** interface, and the operation you are testing is **cleanseClip**.

Again, for the initial request parameters, change the **inClipBG.Clip.size** to equal **small**. This will send the Clip size of "small" through the flow and should output "small".

After the detail properties are set, click the Continue button just below the Detail Properties

 General Properti 	25				
 Detailed Properti 	ies				
Configuration: Default Module Test					
Module: AutoClean Component: CleanseRuleGroup					
Operation: clean	seClip		-		
Initial reguest parame	ters		76		
Name	Туре	Value			
🖃 inClipBG	ClipBG				
🖃 Clip	Clip				
clipID	string	<null></null>			
GLN	string	<null></null>			
clip	string	<null></null>			
size	string	small	*		
color	string	<nul></nul>			
brand	string	<null></null>			
retailItems	ClipItem	<null></null>			
sequence	int	<null></null>			
L					
			Continue		

- ____ c. Your return parameter should be **small**. If you have a ? before small, that means the Business Rule did not fire. If you did not get a return, then Component Test did not run correctly, run again.
- _____d. Run the test again with jumbo and regular to check correct returns

Homework question: Why is it when you test with jumbo as the input, you get jumbo as the output (large is still the response for jumbo in the tooling)?

- 3. Clean up test environment.
 - ____a. In the Servers view, right-click on WPS Server v6.0 and select Add and remove projects....
 - ____b. Select AutoCleanApp and click < Remove. Click Finish.
 - ____ c. Right-click on WPS Server v6.0 and select Stop

What you did in this exercise

In this lab you imported a Java implementation for running a selector/business rule scenario. You then created a rule group in order to create a business rule (rule set). Once the business rule implementation was set, you created a selector and finished wiring the example. When all was wired, you tested using the component test feature within WebSphere Integration Developer. To change the business rule templates, you installed and used the Business Rule Editor application.

Solution Instructions

1. Follow the directions in the task <u>Initialize the Workspace for a Lab Exercise</u>, using the following values:

<WORKSPACE>

C:\Labfiles60\eXchange\AutoClean\workspace

<PROJECT_INTERCHANGE>

C:\Labfiles60\eXchange\AutoClean\solution\AutoClean_PI.zip

<MODULE>

n/a

<DEPENDENT_LIBRARIES>

n/a

2. Continue with Part 7: Publish the AutoCleanApp