



Clips and Tacks: Getting started with the IBM BPM suite of products

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Chapter 1. Introduction

This end-to-end tutorial introduces you to IBM[®] business process management (BPM) functionality by showing you how to build and deploy a business process using IBM[®] WebSphere[®] Business Process Management Version 6.2. No prior knowledge of the BPM products is required to complete the steps in this tutorial.

Printable version of this tutorial

This tutorial focuses on the technical details that are related to building, running, and monitoring the sample application. One Lotus[®] form is used throughout the process to convey information from one user to the next. You will use WebSphere[®] Business Modeler to model the sample and WebSphere Integration Developer to complete the development. You will use WebSphere Business Services Fabric to select the best shipping service endpoint based on policies, WebSphere Process Server and WebSphere Business Monitor Server to run the completed sample and WebSphere Business Monitor to monitor the business process and view business performance using a dashboard. The dashboard is created in Business Space powered by WebSphere, which provides an integrated visual environment.

In addition to this introduction, the tutorial has four major sections:

Overview

Explains the scenario used in this tutorial, the data model, and the human tasks that are involved.

Build it yourself

Contains step-by-step instructions to build the sample from scratch.

Run the sample

Explains how to run the sample using either the artifacts that you download or the artifacts that you created in the Build It Yourself section.

Download and import the sample

Explains how to install the downloaded pre-built solutions for this sample

Time required

This tutorial could take approximately four to five days to complete, depending on your familiarity with the products.

Skill level

This tutorial-style sample is designed for new users. Step-by-step instructions are provided to guide you through the process development life cycle, from the beginning to setting up a test runtime server, to designing and developing a process, to finally monitoring the process. You are expected to have some familiarity with the eclipse environment.

System requirements

The sample that is included with this tutorial runs on Microsoft[®] Windows[®] operating systems.

Prerequisite software

Before you build the sample, you must install the following products. For the tutorial steps, it is assumed that the products are installed according to the instructions provided in the *Installation Details* section.

Any deviation from the specific versions or instructions may result in differences from the tutorial steps or screenshots. You are advised to follow the installation instructions exactly.

- WebSphere Business Modeler Advanced V6.2.0.1
- WebSphere Integration Developer V6.2.0.1
- WebSphere Business Monitor development toolkit V6.2.0.1
- WebSphere Business Services Fabric tool pack V6.2.0.1
- Lotus[®] Forms Designer V3.5
- Lotus Forms Viewer V3.5 Fix pack 1
- Lotus Forms Server V3.5

Note: Lotus[®] Forms Designer and Lotus Forms Viewer are included with WebSphere Business Modeler and WebSphere Integration Developer. Lotus Forms Server is included with WebSphere Integration Developer.

For more information about the products that are involved in this tutorial, refer to the product documentation.

Installation Details

1. Install the WebSphere V6.2 products

There are two options for installing the required WebSphere products, choose the appropriate option for your environment.

a. WebSphere Dynamic Process Edition (WDPE) Installation

Use this option if the machine you are installing on does not have any other products installed with IBM Installation Manager. Check in your Start > Programs menu for IBM Installation Manager. If you see this entry, skip this step and continue at step 1b: Individual Product Installation

- 1) Extract the files of the WDPE V6.2 installer. This will create the following directory structure:
 - installers
 installers
 icense
 WDPEInst
 MonitorInst
 WBMInst
 WBSFInst
 WIDInst
- 2) Download the files for each product and extract them into the appropriate subdirectory in WDPEInst
- 3) Run installers/install_wdpe_win.exe and follow the instructions in the installer

Continue at Step 2: Update the WebSphere Products to V6.2.0.1

b. Individual Product Installation

Run this installation procedure only if you did not install the WebSphere Dynamic Process Edition in step 1a.

- 1) Install WebSphere Integration Developer with the following features:
 - Integrated development workbench (selected by default)
 - The test environment without a profile. Be sure to uncheck the profile



Note: IBM Installation Manager will install or upgrade with the first product that is installed from the IBM WebSphere Dynamic Process Edition suite. In this sample, the IBM Installation Manager will be installed when WebSphere Integration Developer is installed.

- 2) Install WebSphere Business Modeler Advanced V6.2
 - a) Install into the WebSphere Integration Developer package group

A package gro existing packa	oup is a location that age group, or create	contains one or more a new one.
Install) Licenses	Location
Uncleate a ti	ew package group	
Package Gro	up Name	

b) Use default installation features:



- 3) Install WebSphere Business Monitor Toolkit
 - a) Install into the WebSphere Integration Developer package group as you did for WebSphere Business Modeler
 - b) Select features:
 - Monitor Development Environment: Monitor Model Editor
 - Monitor Development Environment: WebSphere Integration Developer support for monitor model generation
 - Monitor Test Environment: WebSphere Business Monitor profile on WebSphere Process
 Server

Features	
😑 🗹 🗍 IBM® WebSphere® Business Moni	tor Development Toolkit 6.2.0.0
🚊 🔽 🕼 Monitor Development Environ	ment
🛛 <table-cell> 🏇 Monitor Model Editor</table-cell>	
	eveloper support for monitor model generation
Asset repository client	
🗄 🗹 🕼 Monitor Test Environment	
WebSphere Business Moni	tor profile on WebSphere Application Server
WebSphere Business Moni	tor profile on WebSphere Process Server
WebSphere Business Moni	tor profile on WebSphere ESB
Show dependencies	🍻 - Required by features you selected

4) Install WebSphere Business Services Fabric tool pack V6.2 into WebSphere Integration Developer with the **Files Only** and the **Install Composition Studio** features selected.

IIStall Fe	ackages							
Select the fea	tures to install.							
Install	Licenses		Location		Features	\supset	Summary	
Features		22.223						1200
🗆 🗖 🖗 ів	M WebSphere Bu	isiness	Services F	abric To	ol Pack 6.2.0	.0		
	Files Only							
····· V	Install Compos	ition S	tudio					
	CONFERENCES INCOMPRESSION							

- 5) Augment the Monitor server profile with Fabric functionality.
 - a) In order to start the augmented monitor profile without exceptions the OSGi cache needs to be flushed. Delete all folders starting with org.* in <WID62_Install>\pf\WBMonSrv_wps\ configuration.
 - b) Run the Profile Management Tool (PMT). This can be found at: <WID62_Install>\runtimes\ bi_v62\bin\ProfileManagement\pmt.bat.
 - c) Click **Augment** to augment the existing monitor profile. If the defaults were used this will be named *WBMonSrv_wps*.
 - d) Select WebSphere Business Services Fabric as the augment to apply to the monitor profile.
 - e) Select **Typical profile augmentation** as the profile augmentation option.
 - f) Enter the user id and the password for the monitor profile created during the installation of the WebSphere Business Monitor toolkit. The default username is *admin* and the default password is also *admin*.
 - g) Review the summary and then click Augment

🛱 Profile Management Tool	
Profile Augmentation Summary	E S
Review the information in the summary for correctness. If the information is correct, click Augmen previous panels.	${\bf t}$ to start augmenting this profile. Click ${\bf Back}$ to change values on the
WebSphere Business Services Fabric augmentation profile type: Fabric Stand-Alone Profile	
Location: C:\IBM\WID62\pf\WBMonSrv_wps	
Disk space required: 889 MB	
Profile name: WBMonSrv_wps	
Make this profile the default: False	
Cell name: WBMonSrv_wps_Cell	
Node name: WBMonSrv_wps_Node	
Host name: mariwade.raleigh.ibm.com	
Enable administrative security (recommended): True	
Administrative console port: 9060	
Administrative console secure port: 9043	
HTTP transport port: 9080	
HTTPS transport port: 9443	
Bootstrap port: 2809	
SOAP connector port: 8880	
Create a Web server definition: False	
Configure Business Rules Manager: False	
Common Database product: Derby Embedded	
Common Database name: WPRCSDB	
Fabric Database product: Derby Embedded	
Fabric Database name: FABRICDB	
L∕s	
	Augment Enish Cancel

- h) Validate that the augment was successful by reviewing the log. The log is located at <WID62_Install>\bi_v62\logs\mangeprofiles\WBMonServ_sps_augment.log. Near the end of the log, there should be a message Profile augmentation succeeded.
- 2. Update the Websphere Products to V6.2.0.1
 - **a.** Use IBM Installation Manager to update the products to V6.2.0.1. All products are installed into the WebSphere Integration Developer package, so this is the only package that needs to be updated.

ckage Group Name	Directory
🔩 IBM WebSphere Integration Developer	C:\Program Files\IBM\WDPE\WID62

b. On the next screen, select Show All and select Version 6.2.0.1 for each product

Note: Other versions may be recommended and highlighted, however the steps and screenshots in this tutorial are for Version 6.2.0.1 and are not guaranteed to be the same in later versions.



Note: You may receive a message informing you that you need to update the IBM Installation Manager. If this is your first time using the IBM Installation Manager to update an installed package. Select **yes**.

Follow the prompts for the remainder of the update installation.

3. Create the FabricAdministrators group and add the admin user to that group

Note: Even though there is a user created by the installer that has WebSphere Process Server administrative privileges, this user does not automatically have Administrator privileges to do Governance in Business Space. To grant this user Administrator privileges, a group called FabricAdministrators must be created and the admin user (or other users) must be added to the group. In this sample, which uses the default *VMM*, this can be done in the WebSphere Process Server administrative console. If you were using LDAP, Local OS, etc. you would create this group in the appropriate system.

- a. Start WebSphere Integration Developer with the default workspace
- b. In the Servers view, right click the server **WebSphere Business Monitor Server** and select **Start**. (This will take a few minutes)
- c. When the Server status is **Synchronized**, right click the server again and select **Administration** > **Run administrative console**
- d. Log into the WebSphere Monitor Server admin console. Navigate to "Users and Groups/Manage Groups". Create a new group with name FabricAdministrators.

Create a Group	
* Group name	
FabricA dministrators	
Description	

e. Add user ID admin to the FabricAdministrators group.

Add Users to Group name	a Group				
FabricA dminist	rators]			
Search for use	rs that will be	members of thi	s group.		
Search by	*Search for	*Maximum r	esults		
User ID	admin	100			
Search					
L users match admin 🖂	ed the search	criteria.			
Lusers match admin	ed the search	criteria.			

- f. Close the Administrative console.
- g. In the servers view, right click the WebSphere Business Monitor server and select stop.
- h. After the server status changes to stopped, exit WebSphere Integration Developer.
- 4. Install Lotus Forms Designer V3.5 into WebSphere Integration Developer. This will also enable it in WebSphere Business Modeler.
 - a. Create a directory called forms_designer in the same parent directory where you extracted the Websphere Integration Developer installation files. This directory should now contain 3 directories: disk1, disk2 and forms_designer.
 - b. Extract the Lotus Forms Designer V3.5 files in the new forms_designer directory.
 - c. Run the WebSphere Integration Developer launchpad and select the option to Install Lotus Forms Designer
 - d. During the installation you will be prompted for a valid installation directory where an IBM Software Development Platform package is installed. This is the WebSphere Integration Developer directory. For example, if you installed using the WDPE installer, the default directory is C:\ProgramFiles\IBM\WDPE\WID62. If you installed the WebSphere products individually, the default directory is C:\ProgramFiles\IBM\WID62

Refer to Installing Lotus Forms software in the WebSphere Integration Developer product documentation for full install information.

5. Install Lotus Forms Viewer V3.5 Fix pack 1 into WebSphere Integration Developer. This will also enable it in WebSphere Business Modeler.

Because this is a fix pack, You must use a different install procedure, not the launchpad. To install IBM Lotus Forms Viewer 3.5 fix pack 1 perform the following steps:

- a. In your Web browser, go to http://www.ibm.com/support/fixcentral.
- b. Download IBM Lotus Forms Viewer 3.5 fix pack 1.
- c. Double-click the downloaded file.
- d. Follow the instructions in the installation wizard.
- e. When prompted for the install location, enter the WebSphere Integration Developer installation directory.

Refer to Installing Lotus Forms software in the WebSphere Business Modeler product documentation for full install information.

6. Install Lotus Forms Sever into WebSphere Integration Developer.

Refer to Installing Lotus Forms software in the WebSphere Integration Developer product documentation for full install information.

- a. Create a directory called forms_server in the same parent directory where you extracted the Websphere Integration Developer installation files. This directory should now contain 4 directories: disk1, disk2, forms_designer and forms_designer.
- b. Extract the Lotus Forms Designer V3.5 files in the new forms_designer directory.
- c. Run the WebSphere Integration Developer launchpad and select the option to Install Lotus Forms Server - API
- d. When prompted for the install location, enter the WebSphere Integration Developer directory.
- e. Install the SDK version of the server



f. Select the checkbox for deploy to WebSphere Process Server



g. For the location of the server, use <WID62_Install>\runtimes\bi_v62

Enter the location of your existing WebSphere Application Server or WebSphere Process Server:

C:\Program Files\IBM\WDPE\WID62\runtimes\bi_v62

Browse

Chapter 2. Overview

Clips and Tacks is a fictional office supply company. In this business scenario, Clips and Tacks is processing orders for office supplies and shipping them to customers.

The following sequence of events describes the Clips and Tacks business process for handling incoming orders.

- 1. The business process is initiated when a customer submits an order.
- 2. A business rule evaluates the data from the order form and determines whether the order can be automatically approved or if it needs human approval. When the total purchase price of the order is \$750.00 or less, the order is automatically approved. When the total purchase price of the order exceeds \$750.00, it is sent to a person for review.
- **3.** For orders that are automatically approved, the customer account is checked to determine if it is in good standing. If the customer account is in good standing, the order is sent for shipment; otherwise, the order is sent to a person for review.
- 4. If the order is approved by reviewer, then it is sent for shipment; otherwise, the order is canceled and a notification is sent to the customer.
- 5. The orders that are ready for shipment are given a packaging slip number and are sent to the customer.

Clips and Tacks recently determined that it could save money by using external shipping carriers instead of shipping all orders directly. Initially, Clips and Tacks decided to use Better Shipping for large domestic orders (an order that is greater than \$50), which charges a flat fee of \$8 per order. For small or large international orders, Clips and Tacks decided to use International Express[™], which charges a flat fee of \$25. (Better Shipping and International Express are fictional shipping companies.) For small domestic orders, Clips and Tacks decided to continue shipping directly, which costs \$10 per order.

Change 1

A few months after this new shipping structure was implemented, Clips and Tacks decided to outsource all domestic shipping to Better Shipping, even for small orders at the same flat fee of \$8 per order.

Change 2

After another few months, Clips and Tacks was offered a great deal for shipping in and around North Carolina. LocalShippers charges a flat fee of \$5 for small and large orders for customers located in North Carolina, South Carolina, and Virginia. Clips and Tacks decided to change to the following shipping structure:

- LocalShippers for orders in and around North Carolina, South Carolina, and Virginia at a flat fee of \$5 per order
- Better Shipping for all other domestic orders at a flat fee of \$8 per order
- International Express for all international orders at a flat fee of \$25 per order

Data model

There are two business objects (also known as business items) in this tutorial. A business object called Order stores the following information for the business process:

- Customer information
- Items ordered
- Automatic approval field, which the business rule uses
- Current[®] status of the order, which is modified as the order progresses through the process
- The packing slip number, which is used to ship the order

• The shipping charges, which are set after it is determined which shipping service is used

The Notification business object is used to send notification to a customer about a canceled order. It has two fields: a text field and an e-mail field. There are two ways to generate business objects:

- By importing the complete object from an XSD file
- By manually creating the object through the authoring tools

To create the Order business object you will use the authoring tools, and to create the Notification business object you will import Order.xsd.

Human tasks

There are three human tasks in this business process:

- A human task for entering data into the order entry form. This human task starts the business process. It is not modeled in the process; it is the process-initiating action.
- A modeled human task that represents the employee activity of reviewing the order when the total purchase amount is more than \$750.00 or when the customer account is not in good standing.
- A modeled human task that represents the employee activity of shipping the order to the customer.

Lessons in this module

1. "Modeling the business process" on page 11

Use WebSphere Business Modeler to build a model that represents the Clips and Tacks business process for handling incoming orders.

- "Integration development" on page 55
 Import the generated model into WebSphere Integration Developer to convert it into a runnable
 business process that includes business rules, Java[™] components, and a user interface.
- **3.** "Identifying WebSphere Monitor Server on WebSphere Process Server ports" on page 70 Identify the WebSphere Monitor Server ports for use in later lessons.
- "Creating a WebSphere Business Services Fabric project" on page 70 Create a project to act as a container for all the WebSphere Business Service Fabric artifacts created.
- "Creating the Clips and Tacks Business Space" on page 76 Create a Business Space to enable an integrated and customized user experience allowing access to business process information from a single user interface.
- "Leveraging Business Services" on page 84
 Use WebSphere Business Service Fabric policies and assertions to enable dynamic business processes.
- "Monitoring the Order Handling business process" on page 109
 Import the monitor model generated by WebSphere Business Modeler into WebSphere Business
 Monitor Server V6.2 and add the missing elements to the monitor model.
- 8. "Testing the Order Handling business process" on page 128 Use the Business Space dashboard to run process instances.
- "Creating a business dashboard in Business Space" on page 129
 Create a business dashboard in Business Space to monitor the Order Handling process.

Chapter 3. Build it yourself

As you complete this tutorial, check your work carefully. Consider working from a printed copy of the documentation so that you can check off each step as you do it.

Before you begin, you must install all items listed in "Prerequisite software" on page 1.

The following artifacts are used in building the application. Refer to Chapter 5, "Download and import samples," on page 141 for download instructions and copy the files now to a convenient location on your local machine.

Order.xsd

The XML schema to be used in WebSphere Business Modeler.

Order.xfdl

The Lotus[®] form used in this tutorial. It is imported in WebSphere Business Modeler.

ClipsAndTacksEndpoints.zip

Web service endpoints to be called by WebSphere Business Services Fabric. These are not really Business Process Management artifacts, but rather external artifacts necessary to run the application.

CancelOrderandSendNotificationImpl.java

The Java file used to generate notifications. It is the implementation for one of the components in the WebSphere Integration Developer.

CreditRating.java

The Java file used to check the customer account status. It is the implementation for one of the components in the WebSphere Integration Developer.

ContextExtractorImpl.java

A file used by the Dynamic Assembler component in Websphere Integration Developer to extract data from the incoming request and pass it to Websphere Business Services Fabric.

ClipsAndTacks-Core_ontology.fca

Custom ontology (vocabulary) required for Websphere Business Services Fabric.

ClipsTacks_initial_scenario-owl.zip

WebSphere Business Services Fabric repository project.

DeclinedOrderEvent.xsd

An XML schema for the Declined Order event that is monitored in Websphere Business Monitor.

LateAverageOrderShippedEvent.xsd

An XML schema for the Order Fulfillment event that is monitored in Websphere Business Monitor.

Modeling the business process

During the modeling phase, use WebSphere Business Modeler to build a model that represents the Clips and Tacks business process for handling incoming orders.

To model the process, complete the following tasks:

- 1. Create the basic process by performing these steps:
 - a. "Creating the business process" on page 12.
 - b. "Importing the Order business item and related data types" on page 15.
 - c. "Building the model of the Order Handling process" on page 17.

- d. "Connecting the tasks and associating data" on page 21.
- 2. Replacing the generated form:
 - a. "Associating a form to the human tasks" on page 24.
 - b. "Replacing the generated form" on page 26.
- 3. Add details for the process to run by performing these steps:
 - a. "Creating the notification business item" on page 30.
 - b. "Implementing the decision branch conditions" on page 31.
 - c. "Setting the input criterion for the process" on page 35.
 - d. "Setting the input specification for the process" on page 35.
 - e. "Synchronizing forms and human tasks" on page 36.
 - f. "Implementing the business rule for automatic approval" on page 37.
- 4. Add details for process monitoring by performing these steps:
 - a. "Specifying monitoring criteria" on page 42.
 - b. "Creating a location dimension" on page 43.
 - c. "Creating the Percentage of Orders Shipped key performance indicator" on page 44.
 - d. "Creating the Average Process Duration key performance indicator" on page 46.
 - e. "Creating the Price per Order instance metric" on page 48.
 - f. "Creating the Order Price Total aggregate metric" on page 49.
 - g. "Creating the Order Price Average aggregate metric" on page 50.
- 5. Export the model by performing this step: "Exporting the model for further development" on page 52.

Creating the business process

In this lesson, you will create the business process.

- 1. Start WebSphere Business Modeler Advanced V6.2. The Workspace Launcher wizard opens.
- 2. Create a new workspace for this tutorial, such as C:\Documents and Settings\Administrator\IBM\ wbmodeler6.2\ClipsAndTacks. Do not select **Use this as the default and do not ask again**. Click **OK**.

😳 Workspace Launcher		×
Select a workspace		
IBM WebSphere Business Modeler Advanced Version 6.2 stores your projects in a folder Choose a workspace folder to use for this session.	called a works	pace.
Workspace: C:\Documents and Settings\Administrator\IBM\wbmodeler6.2\ClipsAndTack	5	Browse
Lyse this as the default and do not ask again		
	ОК	Cancel

- 3. On the Welcome window, click Close Product Welcome. The Start Process Modeling wizard opens.
- 4. Enter ClipsAndTacksF1 as the project name, leave Processes as the process catalog name, and enter OrderHandling as the business process name. Select Design a process that can run and choose WebSphere Business Services Fabric as the runtime target. Then click Next.

Project name	ClipsAn	dTacksF1
Process catalog name	Process	:85
Business process name	OrderH	andling

5. Clear the **Create business item** check box and then click **Next**.

💋 Start Process Modeling		
Start creating the data object	ts for your business process	
Data catalog name		
Business items		
Create business item Business item name Example: Customer Order		
Business item 1		

6. Select **BPMN style** and click **Finish**.

Choose whether to apply sw groups diagram elements, fo	wimlanes to your process diagram. The swimlane layout of your process diagram. The swimlane layout or example, based on the roles needed for tasks.
Select a look for your diagram	ms
💿 BPMN style	
Original style	
O Free Free Investo	
Tree-form layout	
Swimlane layout	
Swimlane layout	
Swimlane layout	Browse.
Classifier	Browse.
Classifier	Browse.

The project and the business process are created. The Order Handling process opens.

7. Click the **Apply 4-Pane Layout** icon 🔲 in the toolbar at the top of the window.

😝 Business Modeling - OrderHandling - IBA	M WebSphere Business Modeler Advanced Version 6.2 - C: 🔚 🔲 🔀
File Edit Modeling View Search Window Help	
⊡•⊒≧ ≣• ∎ 2 ≎•≎•	🕴 🕐 🗄 🗖 📄 🕌 🎇 🍘 🕴 🖏 🖽 🛱 😭 Business Mod
Project Tree 22 Project Tree 23 Project Tree 24 Project Tree 25 Prodefined elements (WebSphere Business M	OrderHandling S Palette Palette Annotation Rectangle Activities Task Human Task Business Rules Task 2P Process
	Cacteways Data Events Attributes - 0 23 Business Mea to Error View Technical Attr
S Outine S3 H P O	General Inputs Outputs Forms More This section provides general information about this process. Name OrderHanding Description

8. Optional: If the **Technical Attributes** view is not showing, you can display it by selecting **Window** → **Show View** → **Other**, expanding **Business Modeler Views**, and selecting the **Technical Attributes** view.

Show View
type filter text
😟 🗁 Asset Management Views 📃 🔺
🚊 🗁 Business Modeler Views
📲 📶 Audit Trail
Business Measures
Change Analysis View
Control Panel
😳 Dynamic Analysis
Error View
Fields View
Hierarchy View
History
Query View
Repositories
Servers
2 Static Analysis
E Storyboard
Storyboard Form
Technical Attributes
E CVS
Use F2 to display the description for a selected view.
OK Cancel

Importing the Order business item and related data types

In this lesson, you will learn how to import the business items and identify and import related data types.

The files needed for this tutorial are available in Chapter 5, "Download and import samples," on page 141, such as the data definition file Order.xsd.

1. In the navigation tree, right-click ClipsAndTacksF1 then select Import.

िः: Project Tree 🛛		
	↓↑ 田 ⊟ 沙 静	
Ei⊖ ClipsAndT∢ Ei⊙ Predefined	New	
	Import	
	Export	
	Report	
	Delete	
	Rename	
	Search	
	Edit Reference Group	
	Focus on "ClipsAndTacksF1"	
	Business Service Search	
	Version 🕨	
	Static Analysis	
	Update from Fabric Repository	
	Publish	

2. Select **Type definition XML schema (.xsd)**, and then click **Next**.

WebSphere Business Modeler Import	
elect type	0-1
Select a product or format for import and click Next.	<u></u>
Турез	
WebSphere Business Modeler project (.mar, .zip) WebSphere Business Morbior results (.xml) WebSphere Business Morbior results (.xml) WebSphere Business Morbior VML (.xml) WebSphere Business Integration Workbench V4.2.4 (.org) WebSphere Business Integration Workbench V4.2.4 (.org) WebSphere Business services and service objects (.wsd, .xsd) WebSphere Business services and service objects (.wsd, .xsd) WebSphere Business Services Fabric Repository elements WebSphere Business Services Fabric Repository classification system	
	<back. next=""> Einsh Cancel</back.>

3. Click **Browse** and select the directory containing the downloaded tutorial artifact files, then select 0rder.xsd from the list of files. Click **Next**.

WebSphere Business Modeler Import	
port options	\$-F
lick Finish to import.	<u> </u>
iource directory	
C:\TEMP	Browse
Files	
Target project	
ClipsAndTacksF1	New New
Overwrite existing elements	

4. Click Finish.

The Order business item is imported with three other business items (CustomerRecord, OrderItem, and OrderProcessingData) that the Order business item requires. All of the business items are imported into a catalog called ClipsAndTacks, which was also defined in the XSD file.

🕀 😹 ClipsAndTacksF1
Ca Business items
😑 🛱 ClipsAndTacks
🗄 🛱 Order
- 🗂 CustomerRecord
- C) Order
- 🗂 OrderItem
🛄 🗍 OrderProcessingData
🖻 🏝 Processes
- Resources

Building the model of the Order Handling process

In this lesson, you will build the model of the Order Handling process.

1. If the **OrderHandling** process is not open already, expand **ClipsAndTacksF1 >Processes > OrderHandling**, and then double-click **OrderHandling**.



Tip: The canvas is currently much larger than the area visible within the window. From the toolbar, click the **Resize Diagram** icon and choose from the options to resize the process diagram. To reduce the width of the canvas, use the Decrease Horizontal Space icon . To reduce the height of the canvas, use the Decrease Vertical Space icon .

2. On the palette, click **Business Rules Task** and then click the canvas. Rename the local business rules task to Check Order Handling Policy for Automatic Approval. You can resize the task to fully display the text if you want.

Tip: You can also drag elements from the palette to the canvas.

Add new elements to the right of the previously added item. An image with all the elements in the process is included in the "Connecting the tasks and associating data" on page 21 section.

Expression Build	der			_ 0
ecision branc	ch condition			V IS
) A decision branch	h condition defines the rules that determ	nine which decision branch to take. The b	uilt expression must evaluate to "Boolean", to be valid.	~=?
$_{\mathbf{y}} \approx \varphi \Rightarrow \varphi$	† ‡			
imple binary expre Treate a sequence ton.	ession of subexpressions, and specify the ope	rators that connect the subexpressions.	To create a more complex expression, click the Full Expression	
Operator	Expression text			
	<use composer<="" expression="" td="" the=""><td>to create the expression.></td><td></td><td></td></use>	to create the expression.>		
				Add
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xpression Compos	ser			
First term: Modeling artifact		Operator:	Second term:	10
Pinet terms and		 Select operator is equal to 	Consultant details	
Medeling artifactu	, .	is not equal to	Beelese unknow	
initiation in the second seco	erHandling	a	true	
ē.	Approve Without Review? Input Cotomer CotalPrice OrderNamber OrderProcessingPreference automaticApproval PackIngElphumber OrderProcessingPreference CotalProcessingPreference CotalProcessingProcessingPreference CotalProcessingProcessingPreference CotalProcessingProcesingProcessingProcessingProces			Luc
			l ox	Cancel

- **3**. On the palette, click **Gateways** to expand it. Click **Simple Decision**, and then click the canvas. Rename the simple decision to Approve Without Review?
- 4. On the palette, click **Task**, and then click the canvas. Rename the task to Check Customer Account Status. The generic task icon can be used to represent any call to an automated service.

Note: You might experience errors during this part of the tutorial because you are in the Fabric mode by default. If you do not want to experience those errors, change to the Basic mode.

50 *OrderHandling 🔀		Charlen Star and Statute		
Palette Palette				
월 Human Task Ⅲ Business Rules Task 양 Process			50,0% Yes	Ē
* _☉) While Loop C⇒ Gateways	1	Check Order		Check Customer
 ⊘ Simple Decision ⇒ Multiple-Choice D ⇒ Merge 		Policy for Automatic Approval	50.0% No Approve Wrbour	Account Status
⊕E Fork ∃⊕ Join			Review?	
🗁 Data	1			
🗁 Events	<			Ш

- 5. Click **Simple Decision**, and then click the canvas to the right of the **Check Customer Account Status** task. Rename the simple decision to Account in Good Standing?
- 6. On the palette, click Merge, and then click the canvas.

Tip: Place the merge elements on the canvas from left to right as you define them.

7. On the palette, click **Human Task**, and then click the canvas. Rename the human task to Review Order.



8. Add a simple decision called Acceptable Credit Risk? to the right of the previous item, a merge item to the canvas to the right of the Acceptable Credit Risk? simple decision, and a task called Calculate Shipping Charges to the canvas to the right of the merge item.



9. You can now indicate what type of task this represents. Select **CalculateShippingCharges** and select the **Implementation** tab in the Technical Attributes view. Scroll down and select Dynamic Assembler for the **Implementation Type**. This setting enables you to add dynamic behavior to the process.

🕞 Attributes - CalculateShippingChargesD 🗍	Business Measures $\left[{}^{d} {}_{igodot D}$ Errors (Filter matched 21 of 21 it	tems) 🗁 Technical Attributes 🛛 🔍 🗖 🗖
		BY ▼
Interface Request Response Impleme	ntation	
	x	-
Implementation type		
Dynamic Assembler		

- 10. Add a human task called Ship Order to Customer, a task called Update Order Database, and a task called Cancel Order and Send Notification to the canvas. Note: Exact spelling and capitalization is required for the Cancel Order and Send Notification task. In the integration section of this tutorial, you will associate an implementation to this task. The implementation file is supplied for you and the name must match.
- 11. Set the implementation types for the Check Customer Account Status, Update Order Database, and Cancel Order and Send Notification tasks to Java.



- **12**. Add a Terminate node by clicking the **Terminate** icon on the palette and then clicking the canvas. (The Terminate icon is located under the Events group.)
- **13**. Add a second Terminate node.



Connecting the tasks and associating data

In this lesson, you will connect tasks, subprocesses, and other elements to model the flow of control and data through the business process.

Connecting tasks is also called wiring the tasks. There are two parts to wiring the tasks: you must create a wire to show that the output from one element becomes the input to another, and then you must indicate what data is passed between those two elements.

1. Hover over the inner edge of the process diagram until you see an arrow.



2. Click and hold the left mouse button. Move the mouse with the connection to the **Check Order Handling Policy for Automatic Approval** task. Release the left mouse button to form a connection.



3. Right-click the newly created connection and select **Associate Data**. Navigate to the ClipsAndTacksF1 project, select **Order**, and then click **OK**.

Tip: An alternative method is to drag a business item from the project tree to a connection.

Type Selection Select type You can use F3 or F4 to highlight previously used types.	×
O Basic type	V
Complex type	Show all projects
Available states	V
	OK Cancel

4. Wire the remainder of the process diagram by repeating steps 1 and 2 for all of the elements, but review these tips before proceeding with wiring:

Important:

- All of the links must have the Order business item with the exception of the link from **Cancel Order and Send Notification** to the Terminate node.
- If the **Order** icon is not automatically added to the link, add it using the **Associate Data** context menu option before continuing with the wiring.
- Press Ctrl+Z or click Edit > Undo to reverse your last change instead of deleting recent work.
- If the **Connections** wiring tool is still enabled, select the white arrow icon at the top of the palette to enable the regular mouse pointer before you try to right-click an item. Alternatively, pressing the Esc key disables the connection tool.
- To prevent yourself from inadvertently creating extra input or output ports on the elements, click the center of each element that you are connecting.

The following three images show the completed wired diagram. The first image shows the left half and the second image shows the right half. The third image is the completed wired diagram.







- **5**. Right-click the canvas and select **Auto-Layout left to right**. Save your work by using one of these combinations:
 - Click File → Save
 - Click File → Save All
 - Press Ctrl+S.

Note: When you save your work errors appear on some elements. These errors are corrected during the following lessons when you provide more details in your model.

Associating a form to the human tasks

In this lesson, you will associate an Order form with the two human tasks, **Review Order** and **Ship Order to Customer**.

An Order form has been created and is available for download. Refer to Chapter 5, "Download and import samples," on page 141 to get the Order.xfdl Lotus[®] form. In this lesson you generate a placeholder form within WebSphere Business Modeler. Later you will replace the placeholder form with the one that you downloaded.

1. In the process that you just created, select the **Review Order** human task and, in the lower pane, click the **Attributes Review Order** tab, and then click **Forms**.

Vou can associate a form with a human task as the task input, the task output, or both the task input and output. If the human task inputs or outputs do not match the form data, they will be replaced by the form data. I Use the input form as the output form Input form New Field name Type	Attributes - Review Order	8 Forms Primary Owner	do Errors (Filter matched 6 of 6 ite	ms) 📄 Technical Attributes
Input form New Browse Edit.,, Disassociate	ou can associate a form wit f the human task inputs or o Use the input form as	h a human task as the task inpu uutputs do not match the form o the output form	it, the task output, or both the task ii lata, they will be replaced by the forn	nput and output. n data.
Field name Type	Input form		New] [B	rowse] Edt.,,] Disassociate
	Field name		Туре	

- 2. Because you will use the same form for the input and output, leave the check box selected. Then click **New** for the input form.
- 3. Enter Order for the name of the form and click Finish.

🗊 Create a form	
Create a form Click Finish to create the new element in the location selected below.	
ClipsAndTacksF1	
Name of form Order	
Description of form	
	×
Einish	Cancel

- 4. Right-click the **Ship Order to Customer** human task, select **Associate Form**, and click **Browse**.
- 5. From the ClipsAndTacksF1 tree, select Order and click OK. Click OK on the Associate Form window.

💱 Select Form	×
Select a form	
Click OK.	
	Show all projects
ClipsAndTacksF1	
New Form	
	OK Cancel

6. Save your work.

Replacing the generated form

In this lesson, you will replace the generated form with the provided order form to provide the appropriate fields necessary to complete this tutorial.

Refer to Chapter 5, "Download and import samples," on page 141 to get the Order.xfdl Lotus[®] form.

- 1. Switch to the Resource perspective, which contains the underlying implementation files. To see them, click the **Open Perspective** icon 🔛 and select **Other**.
- 2. Select Resource and click OK.

😨 Open Perspective 📃 🗆 🗙
 Advanced Lotus Forms Designer Business Modeling (default) CVS Repository Exploring Database Debug Database Development Debug IBM Lotus Forms Designer JavaScript JPA Profiling and Logging Resource Standard Lotus Forms Designer Team Synchronizing Test Web
Show all
OK Cancel

3. Expand the ClipsAndTacksF1 tree to expose the Order.xfd1 form.



- 4. Right-click the Order.xfdl entry and select Delete. Click OK.
- 5. From a file system explorer window, drag the Order.xfdl form to the Order folder in the Modeler Project explorer.
- 6. To check that you have the correct form, right-click the 0rder.xfdl form and select **Open With** → **System Editor**.

	New	•	hile Loop
	Open	F3	ateways
	Open Wit <u>h</u>	•	Text Editor
E) Conv	Chrl+C	XFDL Editor
	Paste	Chd+V	X XML Editor
8	Delete	Delete	P Suctors Editor
~	Move	20000	 E jystem Editor To Diaco Editor
	Rename	F2	Default Editor
	-		- <u> </u>
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	j Exp <u>o</u> rt		
j Lie) Transform Lotus Form		
60	Refresh	F5	
	Links	,	•
:	Validate		
1	<u>R</u> un As	•	,
	<u>D</u> ebug As	•	•
	Profile As	•	· • •
	T <u>e</u> am	•	
	Comp <u>a</u> re With	•	, asks 🛛
	Replace With)	ls .
	Source	•	, ! Description
	Properties	Alt+Enter	

7. Validate that the form was replaced.

BIBM Lotus Forms Viewer - PAGE1	- - - - - - - - - - -
Customer Information	
Customer Number	Street Address
Company Name	City
Contact First Name	Country
Contact Last Name	Postal Code
Rating	Email
Available Credit	
Order Number	
Order Information	
Product Name Product Num Description	n Price Quantity Item Price
Shippi	ng Total Price \$0.00
For Office Use Only	
Order Status Select Status V	Packing Slip Number

- 8. Close the window that opens.
- 9. Associate the new order form with the Review Order and Ship Order to Customer human tasks. Right-click each human task and select **Associate Form**. Click **Browse** and select **Order**. Click **OK** and then click **OK** again.

💱 Select Form	E	×
Select a form		
You can use F3 or F4 to highlight previously used forms.		
		_
	Show all projects	
ClipsAndTacksF1 È- & Processes i		
New Form		
	OK Cancel	

10. Save your work

Creating the notification business item

In this lesson, you will create a new business item called Notification.

The Cancel Order and Send Notification task does not use Order as an output business item. To send notification to customers that their orders were canceled, you need to create a new business item.

To create the Notification business item, complete the following steps:

- 1. Switch to the Business Modeling perspective.
- 2. From the Project Tree, right-click Business items and click New > Business Item.
- 3. Name the new business item Notification and click Finish. The Notification business item appears.
- 4. Under Business item attributes, click Add, replace the new attribute name with e-mail, and select Text for the type. Repeat this step to add the second attribute named text with the same type.

OrderHandling 🗍 🗂 *Notifica	ition	×				
Notification						
arent template None	<u>}</u>	Browse.	Edit Pare	ent		
Attributes are properties or signi	ficant	features. Inherited attributes	can only be e	dited in the pa	rent template.	
Name		Туре	Minimum	Maximum	Read only	St
e-mail	1	Text	0	1	False	Fa
text	d	Text	0	1	False	Fa
						_
	_					
	-					-
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	_					-
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•						F
Add Remove				Move	Up Move Do	WTI

- 5. Save your changes and then close the Notification business item panel by clicking the X on its tab.
- 6. Right-click the wire between **Cancel Order and Send Notification** and the Terminate node and select **Associate Data**. Select **Notification** from Business Items and click **OK**.



Implementing the decision branch conditions

In this lesson, you will set the criteria, based on the input data, for which branch to take when decisions are made in the business process.

The decision elements of the process currently have errors because there is no automated way to determine which branch should be taken for a given order.

The branch options are listed in the following table.

Table 1. Summary of Decision Criteria

Decision	Criteria
Approve without Review?	The previous task set the value of the OrderProcessingPreference - automaticApproval input field. Check if this field is true or false. If this field is true, then the order is automatically approved. If this field is false then the order must be reviewed before it is approved.
Account in Good Standing?	Check whether the total price of the order is less than the customer's available credit.
Acceptable Credit Risk?	In the previous task, the reviewer sets the value of the OrderStatus field. Check this field for APPROVED .

1. In the process diagram, click the **Approve Without Review**? simple decision. In the Attributes view, click the **Attributes – Approve without Review**? tab and then click the **Output branches** tab.

Diagram	Specification Visual Attributes Page	Layout Technical Specification			
🔒 Attrib	utes - Approve Without Review? 🕅	Technical Attributes View Business Measures	Static Analysis Errors (Filter ma	tched 0 of 0 items)	
General	Inputs Outputs	Input branches Output branches			
Output b	branches				
This sec	tion shows the output branches for th	is decision.			
Nar	me	Contents		Condition	Probability (%)
Yes		Output		Yes	65.0
No		Output:2		No	35.0

- a. Click the **Yes** cell and change the probability field to 65. Similarly, change the **No** probability field to 35. These probabilities are used during simulation.
- b. Click the **Yes** cell again. Scroll down to the Expression field and click **Edit** (you can size the panes in the 4-pane layout by selecting and dragging the borders). The Expression Builder wizard opens.

Diagram 5	pecification Visual Attributes Page Layout Tec	chnical Specification				
Attribu	tes - Approve Without Review? 🙁 Technica	al Attributes View Business Mea	asures Static Analysis	Errors (Filter matched 0 of 0 items)		
General	Inputs Outputs Input b	oranches Output branch	es			
	Decision Branch Condition					
	No					
	Description					
	Expression					
						~
					Clear	Edit

- c. In Expression Builder, complete the following steps:
 - 1) Click Add.
 - 2) Under the **Expression Composer**, ensure Modeling artifact is selected as the first term. Expand **Processes** → **OrderHandling** → **Approve Without Review**? → **Input** → **OrderProcessingPreference** and select **automaticApproval**.
 - 3) For Operator, select is equal to.
 - 4) For the second term, select **Boolean** and set the Boolean value to true.

vision bro	h condition			
decision branc	n condition defines the rules that determi	ne which decision branch to take. The b	uilt expression must evaluate to "Boolean", to be valid.	X
				-
ple binary expre ate a sequence	ission of subexpressions, and specify the oper	ators that connect the subexpressions.	To create a more complex expression, click the Full Expression	
perator	Expression text			
a.	<use composer<="" expression="" td="" the=""><td>to create the expression. ></td><td></td><td></td></use>	to create the expression. >		
				Add
				Remov
				Move L
				Move Do
ression Compos st term:	er		Second term:	
odeling artifact		Select operator	Boolean	
First term del	tails:	is equal to is not equal to	Second term details:	
odeling artifact:		2	Boolean value:	
E-SP Orde	arHandling ▲ Approve Without Review? ∑ Input B C Customer TotalPrice OrderNumber		true	<u> </u>
	ConderStatus ConderProcessingPreference CondentCondentCondent PackingSlipNumber Condenttance Co			

5) Click Apply, and then click OK. You might need to scroll down to find the OK button.


- 2. In the process diagram, click the Account in Good Standing? simple decision. In the Attributes view, click the Output branches tab and change the Yes probability to 85 and the No probability to 15.
 - a. Select the Yes line, scroll down and click Edit under the Expression field.
 - b. In the Expression Builder, complete the following steps:
 - 1) Click Add.
 - 2) Ensure that **Modeling artifact** is selected as the first term. Under **First term details**, expand **Processes** → **OrderHandling** → **Account in Good Standing**? → **Input** and select **TotalPrice**.
 - 3) For the **Operator**, select **is less than or equal to**.
 - 4) For the second term, select **Modeling artifact** and then expand **Processes** → **OrderHandling** → **Account in Good Standing** → **? Input** → **Customer** and select **AvailableCredit**.

Expression Builder			
Decision branch condition) A decision branch condition defines the rules tha	t determine which decision branch to take,		X+Y =?
	y the operators that connect the subexpres	sions. To create a more complex	
Operator Expression text			
			Add Remove Move Up Move Down
First term:	Operator:	Second term:	
Modeling artifact	Select operator	Modeling artifact	~
First term details:	is not equal to is greater than is greater than or equal to is less than is less than or equal to	Second term details:	talCode
1		ОК	Cancel

- 5) Click Apply, click OK, and then save your work.
- **3**. Click the **Acceptable Credit Risk?** task. In the Attributes view, select the **Output branches** tab. Make the following changes:
 - a. Change the Yes probability to 70 and the No probability to 30.
 - b. Select the Yes line, scroll down and click Edit under the Expression field.
 - c. In Expression Builder, complete the following steps:
 - 1) Click Add.
 - 2) Ensure **Modeling artifact** is selected as the first term. Under **First term details** expand **Processes** → **OrderHandling** → **Acceptable Credit Risk** → **Input** and select **OrderStatus**.
 - 3) For Operator, select is equal to.
 - 4) For the second term, select Text and enter the value as APPROVED.

xpression Bu	uilder			
ision branch decision branch Boolean", to be	n condition n condition defines the rules that d valid.	etermine which decision branch to t	ake. The built expression must evaluate to	X+ =?
$\nexists_{h} \diamondsuit \gtrsim$				
imple binary reate a sequenc pression, click t	r expression e of subexpressions, and specify t he Full Expression icon.	he operators that connect the sube	expressions. To create a more complex	
Operator	Expression text			1
	<use compos<="" expression="" td="" the=""><td>er to create the expression.></td><td></td><td></td></use>	er to create the expression.>		
				Add
				- Aud
				Remove
				Move Up
				Move Down
Expression	Composer			Move Down
Expression First term	Composer :	Operator:	Second term:	Move Down
Expression First term Modeling arti	Composer : fact	Operator: Select operator ic equal to	Second term: Text	Move Down
Expression First term Modeling arti	Composer : fact v term details:	Operator: Select operator is equal to is not equal to	Second term: Text Second term details:	Move Down
Expression First term Modeling arti	Composer : fact v eerm details:	Operator: Select operator is equal to is not equal to	Second term: Text Second term details: Text value:	Move Down
Expression	Composer : fact term details:	Operator: Select operator is equal to is not equal to	Second term: Text Second term details: Text value: APPROVED	Move Down
Expression	Composer : fact term details: Drut Customer CordenNumber CordenNumber CordenProcessin DrderProcessin DrderClarbar	Operator: Select operator is equal to is not equal to	Second term: Text Second term details: Text value: [APPROVED]	Move Down

5) Click **Apply**, click **OK**, and then save your work. You should have no more errors (red Xs) on the decision elements of your process diagram.

Setting the input criterion for the process

In this lesson, you will set the input criterion for the process to ensure that the input parameter name matches the name in the form.

Complete the following steps:

- 1. Click the canvas and then click the Attributes OrderHandling tab and then the Inputs tab.
- 2. Select the Input row.
- 3. For the name, type 0rder.

eral Inputs C	utputs Forms More				
section provides of	letailed information about the inp	uts.			
Name	Associated data	State	Minimum	Maximum	
Order	Order		1	1	
					Ac

4. Save your work.

Setting the input specification for the process

In this lesson, you will set the input specification for the process to ensure that the input and output parameter names for the human tasks match the names in the form.

Complete the following steps:

- 1. Click the **Review Order** human task icon, then click the **Attributes Review Order** tab and then the **Inputs** tab.
- 2. Select the Input row.
- 3. For the name, type 0rder and save your work.

General Inputs Outputs	s Forms Primary Owner Additional R.	esources More				
This section provides detailed	d information about the inputs.					
Name	Associated data	State	Minimum	Massimum	Input source	
Deder	Order		1	L	now	
						~00
						Renor

- 4. Click the **Review Order** human task icon and the **Attributes Review Order** tab again, but this time select the **Outputs** tab.
- 5. Select the **Output** row.
- 6. For the name, type 0rder and save your work.
- 7. Repeat these steps for the Ship Order to Customer human task.

Note: Errors are expected for both human tasks. You will correct these errors in "Synchronizing forms and human tasks."

Synchronizing forms and human tasks

In this lesson, you will synchronize the Order form and the available human tasks to avoid XPath problems when exporting the Project Interchange file to WebSphere Integration Developer.

Complete the following steps:

1. Right-click the Review Order human task and select Synchronize Forms.

Associate Form	
Disassociate Form	۲
Generate Form	
Synchronize Forms	
Input and Output	۲
Change Image	F
Convert to	۲
Move into	۲
o∉ Cut	
🗎 Сору	
Create Business Measure	۲

- 2. Select Match the input form with the task inputs and make sure that the Update the form content but not the layout entry is selected.
- 3. Click Synchronize.

🕏 Synchronize Forms 🛛 🗙
Update the forms to match the human task inputs or outputs
 If you use the input form as the output form, you only need to update the input form
✓ Match the input form with the task inputs
 Update the form content but not the layout
Regenerate both the form content and layout
Match the output form with the task outputs
O Update the form content but not the layout
O Regenerate both the form content and layout
Synchronize Cancel

The errors are corrected.

Note: Because the two human tasks, **Review Order** and **Ship Order to Customer**, use the same form, you do not need to repeat the previous steps for the Ship Order to Customer human task.

Implementing the business rule for automatic approval

In this lesson, you will set up a business rule to allow automatic approval of certain orders.

The business rules task uses the Order business item as the input and checks the TotalPrice variable. If the total price is less than or equal to a specified fixed amount (in this case \$750.00), then the rules task sets the AutomaticApproval variable in the Order business item to true; otherwise, the variable is set to false. The business rules component returns the modified Order business item as the output.

To implement the business rules task, you will first create a template and then create an if-then rule instantiating the template.

- 1. In the process diagram, click the **Check Order Handling Policy for Automatic Approval** task and then, in the Attributes view, click the **Business Rules** tab.
- 2. Click Add. The Define Business Rule wizard opens.
- 3. Enter AutoApprovalF1 as the name of the business rule.
- 4. Click the **Rule Templates** tab and then click **Add Template**.
- 5. Change the template name from Rule template: 1 to AutoApproval Template by selecting the name and typing over it.
- 6. Under Rule parameters, click Add.
- 7. Define the rule parameter by completing the following steps:
 - a. Change the parameter name to totalPriceMax by selecting it and typing over the generated name.
 - b. Select **Decimal (double-precision)** as the type.
 - c. For the description, enter maximum purchase price for automatic approval.

, and rate logic up a sec	or in-citell rules				
or modify one or more if-then ru	ies that define the logic	c of the business rule. To cre	ate rule conditions and action	ns, the business rules task must have inputs a	nd outputs defined.
me					
toApprovalF1					
escription					
portant					
reuse rule conditions and action	s or allow their parame	ter values to be changed in a	an application at runtime, crea	ate a rule template.	
	1				
Rule Templates	hen Rules				
Definition					
o specify rule conditions and ac	tions, create any requi	red rule parameters. Also en	sure that the business rules t	ask has inputs and outputs defined.	
Template name Rule o	ondition	Ru	le action	Template description	
AutoApproval Templati		100		<type description="" h<="" td="" the=""><td>Add Template</td></type>	Add Template
					Remove Template
					Move Up
					Move Down
					PIOVE DOMIT
Rule parameters					
o change parameter values at r	untime or add paramet	ters to either the rule condition	on or action, specify rule para	meters. Add constraint information as a desc	ription.
Parameter name	Type		Description		
totaPriceMax	Decima	al (double-precision)	maximum purchas	e for automatic approval	Add
		,			
					Remove
Rule template presenta	ition				
Determine how the rule templat	e is presented to users	at runtime for modification	of the rule parameter values.		
 Automatically generate the 	text for the rule templa	ate presentation			
O Customize the text for the r	ule template presentati	ion			
					<u>~</u>

- 8. In the Rule Templates table, click the rule condition cell for **AutoApproval Template** and then click the **Condition** wizard.
- 9. In the Expression Builder for the rule condition, complete the following steps:
 - a. Add a simple binary expression by clicking Add.
 - b. For the first term, select Modeling Artifact. Expand Check Order Handling Policy for Automatic Approval → Input and select TotalPrice.
 - c. For the **Operator**, select is less than or equal to.
 - d. For the second term, select Modeling Artifact. Expand Check Order Handling Policy for Automatic Approval and select totalPriceMax.

Expression Bu	ilder			-0
ule Condition) In an if-then rule,	, a rule condition must be satisfied for a rule	action to take effect. The built expression	on must evaluate to "Boolean", to be valid.	X+) =?
8. ¥ Ø 5				
Simple binary expre Greate a sequence icon.	ession of subexpressions, and specify the operati	ors that connect the subexpressions. To	create a more complex expression, dick the Full Expression	F
Operator	Expression text 'Check Order Handling Policy for Au	tomatic Approval.Input.TotaPrice' is less	than or equal to 'totalPriceMax'	
				Add
				Move Up
Expression Compos	ser - Root expression		Second term:	Move Down
Modeling artifact	V	-Select operator	Modeling artifact	×
First term de Modeling artifact:	tals:	is equal to is not equal to is greater than	Second term details: Modeling artifact:	
8 8 Creck 0 8 - D Ins. 8 - D	Inter Handing Policy for Automatic App t t Customer TotaPrice OrderStatus OrderStatus Paders[3]pNumber OrderStatus OrderStatus	is greater than or equal to is less than or equal to	⊕ Check Order Handling Policy for Auto ⊕ D Input ⊕ D Output ⊡ totalPriceMax	matic Approv
<			<]	>
				Apply
	CONTRACTOR OF A			

e. Click Apply, and then click OK.

10. Click in the **Rule action** cell for AutoApproval Template and then click the \square .

Rule Templates If-1	Then Rules				
o specify rule condition	ons and actions, create any required rule parameters. Also ens	ure that the business rules task has input	s and outputs de	fined.	
Template name	Rule condition	Rule action		Template description	
AutoApproval Templ	ate 'Check Order Handling Policy for Automatic Approval.Input				Add Template
					Remove Template
					Move Up
-					Move Down

The Specify Rule Action wizard opens.

- 11. Specify the rule action by completing the following steps:
 - a. Expand and select Check Order Handling Policy for Automatic Approval → Output → OrderProcessingPreference → automaticApproval. Then select Value specification → Specific value and True. Click OK.

Details for task inp	uts and outputs, assign a value t	o the input, the output	t, or one or	more inpu	t or output attributes.	Value specification The value must match the	type.
Name		Type	Minim	Maxi	Value	Ollana	
😑 🚑 Ch	eck Order Handling for Automatic	None				Onone	
ΘΣ	Input	Order	1	1		 Specific value 	
٠	Customer	CustomerRecord	1	1		True	
	TotalPrice	Decimal (double-pr	1	1		Compagian	(T-4)-
	GrderNumber	Integer (long)	1	1		Expression	Edit.
	DrderStatus	Text	1	1			
H	OrderProcessingPreference	OrderProcessingD	1	1			
	PackingSlipNumber	Text	1	1			
	OrderItems	OrderItem	1	n			
Ξ 🔉	Output	Order	1	1			
۰	Customer	CustomerRecord	1	1			
	TotalPrice	Decimal (double-pr	1	1			
	🔂 OrderNumber	Integer (long)	1	1			
	🕞 OrderStatus	Text	1	1			
	OrderProcessingPreference	OrderProcessingD	1	1			
	automaticApproval	Boolean	1	1	True		
	PackingSlipNumber	Text	1	1			
۰	OrderItems	OrderItem	1	n			
	totalPriceMax	Decimal (double-pr					

The following figure shows the completed business rule template.

The business Rule	e						_ [
fy the rule logic	as a set of if-the	n rules					
or modify one or mor	e if-then rules that defi	ine the logic of the business rul	le. To create rule o	onditions and actions, the business n	ules task must have inputs a	nd outputs defined.	
ame							
utoApprovalF1							
escription							
							~
							~
nportant	and a stress of all so the						
reuse rule conditions	and actions or allow th	er parameter values to be cha	anged in an applica	tion at runtime, create a rule templat	e.		
Rule Templates	If-Then Rules						
Definition							
To specify rule conditi	ions and actions, create	e any required rule parameters	. Also ensure that	the business rules task has inputs an	d outputs defined.		
Template name	Rule condition		Rule action		Template description		
AutoApproval Temp	lat/Check Order Handlin	ng Policy for Automatic Approv	al.Ir'Check Order H	Handling Policy for Automatic Approve	al.O <type description="" h<="" td="" the=""><td>Add Template</td><td></td></type>	Add Template	
						Remove Templat	
						remove remplet	
						Move Up	
						Move Down	
			1				-
Rule parameters	5						
To change parameter	values at runtime or ad	dd parameters to either the rule	le condition or actio	on, specify rule parameters. Add con	straint information as a descr	iption.	
Parameter name		Туре		Description			
Parameter name totalPriceMax		Type Decimal (double-precision))	Description maximum purchase for automatic a	approval	Add	
Parameter name totalPriceMax		Type Decimal (double-precision))	Description maximum purchase for automatic a	approval	Add	

You must now create an if-then instance of this rule template.

- 12. Click the If-Then Rules tab.
- 13. Click Add Rule.
- 14. Change the name of the new rule to AutoApprove Rule.
- 15. For Template name select AutoApproval Template.
- **16**. After selecting the template, a pop-up will ask if you want to overwrite the rule conditions and actions, click OK. This will fill in the rest of the fields.

17. Under Rule parameter values, change the Value of totalPriceMax from 0.0 to 750.0 The following image shows the completed business rule.

efine Business I						
	Rule					العا
ify the rule lo	gic as a set of if-t	hen rules				
ate or modify one o s task must have inj	r more if-then rules that puts and outputs define	t define the logic of th d.	ie business rule, T	o create rule conditions	and actions, the l	ousiness
me						
utoApprovalF1						
scription						
portant reuse rule condition Rule Templates 1	ns and actions or allow t	their parameter value	s to be changed ir	h an application at run tir	ne, create a rule i	template.
-Then Rules						
elect a rule templat utputs defined.	e or define an if-then ru	ule. To create rule cor	ditions and action	ns, ensure that the busin	ess rules task has	; inputs and
Rule name	Template name	Rule condition		Rule action		(*************************************
AutoApprove Rule	AutoApproval Templa	te 🕴 'Check Order Ha	ndling Policy for	. Check Order Handlin	g Policy for	Add Rule
						Remove Rule
						CONSTRUCT
						Move Up
<		й 			>	Move Up Move Down
ule parameter value pedify the value of	es each parameter used in	the rule condition an	d action.		<u>></u>	Move Up
 ule parameter value pedify the value of Parameter name 	es each parameter used in	ini the rule condition an	d action.		Descript	Move Up Move Down
 ule parameter value pecify the value of Parameter name totalPriceMax 	es each parameter used in Type Decimal (dout	in the rule condition an ole-precision)	d action. Value 750.0		Descript maximum	Move Up Move Down
Ide parameter value pedify the value of Parameter name totalPriceMax	es each parameter used in Type Decimal (dout	in the rule condition an ole-precision)	d action. Value 750.0		Descript maximum	Move Up Move Down
C lule parameter value pedfy the value of Parameter name totalPriceMax	es each parameter used in Type Decimal (dout	the rule condition an	d action. Value 750.0		Descript maximum	Move Up Move Down
Ide parameter value pedify the value of Parameter name totalPriceMax Rule presentation	es each parameter used in Type Decimal (dout	the rule condition an	d action. Value 750.0		Descript maximum	Move Up Move Down
Ide parameter value pedify the value of Parameter name totalPriceMax Rule presentation Determine how the	es each parameter used in Type Decimal (dout	the rule condition an ole-precision) d to users in an applic	d action. Value 750.0 ation at run time.		Descript maximum	Move Up Move Down
ule parameter value pedify the value of Parameter name totalPriceMax Rule presentation Determine how the	es each parameter used in Type Decimal (dout if-then rule is presented	in the rule condition an ole-precision) d to users in an applic	d action. Value 750.0 ation at run time.		Descript mäximum	Move Up
Ule parameter value pecify the value of Parameter name totalPriceMax Rule presentation Determine how the Automatically ge	es each parameter used in Type Decimal (dout if-then rule is presented merate the text for the	in the rule condition an ole-precision) d to users in an applic	d action . Value 750.0 ation at run time.		Descript maximum	Move Up
Lule parameter value pecify the value of Parameter name totalPriceMax Rule presentation Determine how the Automatically ge Customize the b	es each parameter used in Type Decimal (dout if-then rule is presented merate the text for the ext for the rule present	in the rule condition an ole-precision) d to users in an applic rule presentation ation	d action. Value 750.0 ation at run time.		Descript maximum	Move Up
Interface the second seco	es each parameter used in Decimal (dout if-then rule is presented enerate the text for the ext for the rule present andling Policy for Autom r Handling Policy for Autom	the rule condition an ole-precision) d to users in an applic rule presentation atic Approval. Input. T tomatic Approval. Out	d action. Value 750.0 ation at run time. otalPrice' is less th put.OrderProcess	nan or equal to 'totalPric	Descript maximum eMax', :Approval' is set t	o True
Ide parameter value pedify the value of Parameter name totalPriceMax Rule presentation Determine how the Order Ha Then 'Check Order Ha	es each parameter used in Decimal (dout if-then rule is presented enerate the text for the ext for the rule present andling Policy for Autom r Handling Policy for Aut	tin the rule condition an ale-precision) d to users in an applic rule presentation ation iatic Approval. Input. T tomatic Approval. Out	d action. Value 750.0 ation at run time. otalPrice' is less th put.OrderProcess	nan or equal to 'totalPric	Descript maximum eMax', ;Approval' is set t	Move Up Move Down ion purchase pric
Lule parameter value pedify the value of Parameter name totalPriceMax Rule presentation Determine how the Automatically ge Customize the b IF 'Check Order Ha then 'Check Order	es each parameter used in Type Decimal (dout i if-then rule is presented enerate the text for the ext for the rule present andling Policy for Autom r Handling Policy for Autom	the rule condition an ole-precision) d to users in an applic rule presentation ation atic Approval .Toput .T tomatic Approval .Out	d action. Value 750.0 ation at run time.	nan or equal to 'totalPric	Descript maximum eMax', Approval' is set b	ion purchase pric
Ule parameter value pedify the value of Parameter name totalPriceMax Rule presentation Determine how the Automatically ge Customize the b If 'Check Order Ha then 'Check Order	es each parameter used in Type Decimal (dout i if-then rule is presented enerate the text for the ext for the rule present andling Policy for Autom r Handling Policy for Autom	the rule condition an ole-precision) d to users in an applic rule presentation attor attor tomatic Approval.Out	d action. Value 750.0 ation at run time.	han or equal to 'totalPric	Descript maximum efMax', Approval' is set t	o True

- 18. Close the Define Business Rule wizard by clicking OK.
- In the Attributes view, select the Business Rules tab and scroll down to the Scheduling section. For Default business rule, select AutomaticApprovalF1 from the list. Save your work.

neral Inputs Outputs Business Rules	urces More	
isiness rules		
entify the high-level business rules associated	e task.	
Business rule	Description	
AutoApprovalF1		
		Add
		Edit
		Remove
beduling		
becify which business rule should be used by d	nd which business rules are in effect on specific dates. Dates are set in local time	e zones, so the scheduling of
isiness raies in an application acrunante occur	local time zone.	

Specifying monitoring criteria

In this lesson, you will define the measurements you want to show to the executives.

IBM WebSphere Business Monitor retrieves business measures, the raw data from running business process, and displays them in a business space. For this tutorial, the executives want to see the data by country and city, which is known as dimensional analysis. First, you create a dimension. Then you create several key performance indicators (KPIs), which are calculated values that are significant to running the business. Two of these KPIs are Percentage of Orders Shipped and Average process Duration.

To specify what should be monitored, complete the following steps:

- 1. Click the canvas, and then click **Business Measures** tab and then the **Monitored Values** tab.
- 2. In the % **Per Branch** column, select the three check boxes (See the image in the next step.)
- **3**. In the **Processing Time** column, Select the check box for each process element except the Calculate Shipping Charges process element. Save your work.

🕞 Attributes 📊 Business Measures 🛛 🍓 Errors (Filter	matched 0 of 0 item:	s) 🕼 Asset Repos	tories			- 8
Business Performance Indicators Monitored Values						
Monitored values						
This section indicates which values you want returned from Web	Sphere Business Mo	nitor after the proce	ss has been monito	red.		
Process Element	Processing Time	Processing Cost	Startup Cost	Revenue	% Per Branch	
🗷 🔨 Acceptable Credit Risk?					\checkmark	
🗉 🕂 Account in Good Standing?					\checkmark	
🗷 🕂 Approve Without Review?					\checkmark	
Calculate Shipping Charges						
Cancel Order and Send Notification	Average Can					
Check Customer Account Status	Average Che					
Check Order Handling Policy For Automatic Approval	Average Che					
🖧 OrderHandling	Average Ord					
P Review Order	🗹 Average Rev					
P Ship Order to Customer	🖌 Average Ship					
Update Order Database	🖌 Average Upd					

4. Click the **Business Performance Indicators** tab, review the metrics that are created based on the monitored value selections.

Business Performance Indicators Monitored Values			
usiness measures summary			
his section provides information about business me zures such as metrics and KPIs.			
Name	Target	Time Period	Description
📙 KPIs			
🖻 👹 Instance Metrics			
Acceptable Credit Risk? Yes Branch Taken			This metric measures whether the Yes branch for Acceptable Credit Risk? was taken.
Acceptable Credit Risk? No Branch Taken			This metric measures whether the No branch for Acceptable Credit Risk? was taken.
📩 Account in Good Standing? Yes Branch Taken			This metric measures whether the Yes branch for Account in Good Standing? was taken
📩 Account in Good Standing? No Branch Taken			This metric measures whether the No branch for Account in Good Standing? was taken.
Approve Without Review? Yes Branch Taken			This metric measures whether the Yes branch for Approve Without Review? was taken.
Approve Without Review? No Branch Taken			This metric measures whether the No branch for Approve Without Review? was taken.
ancel Order and Send Notification Processing Time			This metric measures the processing time of Cancel Order and Send Notification.
2 Check Customer Account Status Processing Time			This metric measures the processing time of Check Customer Account Status.
📩 Check Order Handling Policy for Automatic Approval Processing Time			This metric measures the processing time of Check Order Handling Policy for Automatic a
CriterHandling Processing Time			This metric measures the processing time of OrderHandling.
Review Order Processing Time			This metric measures the processing time of Review Order.
hip Order to Customer Processing Time			This metric measures the processing time of Ship Order to Customer.
📩 Update Order Database Processing Time			This metric measures the processing time of Update Order Database.
🖂 👺 Aggregate Metrics			
Dimensions			
Average Acceptable Credit Risk? Yes Branch Percentage			This metric measures the average decision branch percentage for Acceptable Credit Ris
Average Acceptable Credit Risk? No Branch Percentage			This metric measures the average decision branch percentage for Acceptable Credit Ris
Average Account in Good Standing? Yes Branch Percentage			This metric measures the average decision branch percentage for Account in Good Stan
Average Account in Good Standing? No Branch Percentage			This metric measures the average decision branch percentage for Account in Good Stan
Average Approve Without Review? Yes Branch Percentage			This metric measures the average decision branch percentage for Approve Without Rev
Average Approve Without Review? No Branch Percentage			This metric measures the average decision branch percentage for Approve Without Rev
Average Cancel Order and Send Notification Processing Time			This metric measures the average processing time of Cancel Order and Send Notification
Average Check Customer Account Status Processing Time			This metric measures the average processing time of Check Customer Account Status.
Average Check Order Handling Policy for Automatic Approval Processing	т		This metric measures the average processing time of Check Order Handling Policy for Au
Average OrderHandling Processing Time			This metric measures the average processing time of OrderHandling.
Average Review Order Processing Time			This metric measures the average processing time of Review Order.
Average Ship Order to Customer Processing Time			This metric measures the average processing time of Ship Order to Customer.
Average Update Order Database Processing Time			This metric measures the average processing time of Update Order Database.
Average Update Order Database Processing Time			This metric measures the average processing time of Update Order Database.

Creating a location dimension

In this lesson, you will create the Location dimension to allow you to do dimensional analysis by country and city.

You cannot specify a two-level dimension in IBM WebSphere Business Modeler, so you just create a single level in WebSphere Business Modeler and then you complete the implementation in the WebSphere Business Monitor development toolkit.

- 1. On the **Business Performance Indicators** tab, double-click the first aggregate metric in the list (Average Acceptable Credit Risk? Yes Branch Percentage). This opens the **Business Measures Details** window.
- 2. On the Business Measure Details window, in the Dimension Analysis section, select the check box Specify the dimensions that will be available in the dashboards for analysis of this metric.
- 3. Click Add, and change the name of the dimension to Location.
- 4. Click OK.

Business Measure Information Acceptable Credit F Acceptable Credit Risk? Yes. Acceptable Credit Risk? Yes. Business Measure Details Destription Destription Sec Credit Credit Risk? Yes. Acceptable Credit Risk? Ac	iness Measures	This business mea	sure was created to retur	n a real-life value aft	er the process runs.			
Acceptable Credit F Acceptable Credit Risk? Yes. Description Credit Customer Acceptable Credit Risk? Yes. Description Credit Ri	KPIs	V Business	s Measure Informa	tion				
Acceptable Credit Risk? Acceptable Credit Risk? Acceptable Credit Risk? Approve Without R Check Customer Acceptable Credit Risk? Yes. Approve Without R Business Measure Details Description Business Measure Details Description Approve Note To Cust. Approve Approve Note To Cust. Approve Acceptable Acce	Acceptable Credit F	Name	Average Acceptable C	redit Risk? Yes Brand	h Percentage			_
Accuratin God St Approve Without R Approve Approve V Approve Approve A Approve Approve V Approve Approve A Approve Appr	Account in Good St	Туре	O KPI O Instance m	stric 🗿 Aggregate	metric O Unspecified			
bedk Order Handling Proc Protein Order Data Protein Order Data	Account in Good St Approve Without R Approve Without R Cancel Order and S Cancel Order and S	Description	This metric measures th	e average decision b	ranch percentage for Accep	stable Credit Risk? Yes		
Average Accord if Average Check Cu Instance metric to aggregate Accord Average Accord if Average Check Cu	Check Order Handli	Business Measu	re Details Dashboard 9	amples				
Average OrderHan	Average Acceptabl Average Acceptabl Average Acceptabl Average Acceptabl Average Account in Average Account in Average Account in Average Account in Average Accel or Average Check Cu: Average Check Cu: Average Check Turk Average Check Turk Average Check Turk Average Check Turk	Function Aggreg Specify an inst Specify I Instance	: Average ate Metric Calcula ance metric to use to calc now to calculate this aggre metric to aggregate:	tion Details ulate this aggregate igate metric Acceptable Credit Ris	metric. k? Yes Branch Taken	• New]	
Average Ship Orde	Average Ship Orde	Dimens	ions for Analysis	e in elementation for	and decesion. The survey	ala instantana matri	a black halds black a series of a site	
Average Update OI Toursan provide an instance metric as the implementation for each amerision. For example, an instance metric that holds the hame of a city Can be the implementation for the city dimension.	Average Update Oi	can be the imp	lementation for the city d	mension.	eaur dimension. Por exam	pie, an instance metri	ic that holds the name of a city	
- 🙆 Unspecified Metrics 🛛 Specify the dimensions that will be available in the dashboards for analysis of this metric		Specify t	he dimensions that will be	available in the dash	boards for analysis of this i	netric		
Dimension Instance Metric	Unspecified Metrics							

Creating the Percentage of Orders Shipped key performance indicator

In this lesson, you will set up the percentage of orders shipped as a key performance indicator (KPI).

One of the KPIs that we need to track is the percentage of orders shipped. By tracking this KPI you can determine, automatically, if your business is being successful as defined by predetermined criteria.

Complete the following steps:

- 1. Click the Business Performance Indicators tab in the Business Measures view, and then click Add.
- 2. In Business Measure Details wizard, name the business measure Percentage of Orders Shipped.
- 3. For the **Type**, select **KPI**.
- 4. In the **Description** field, type Percentage of orders that are shipped.
- 5. Click the **Dashboard Samples** tab and preview the different KPI representations. You can select each of the highlighted values, such as KPI Gauge or KPI Bar to see how the KPI is represented as a gauge or bar graph. You can change the selection from KPI to one of the other values (instance metric, aggregate metric, or unspecified) to see the various ways they are displayed on a dashboard. When you are finished exploring the dashboards, ensure the **Type** field is selected as **KPI** before proceeding.

iness Measures	This business mea	sure was created to return a real-life value after the process runs.
🗏 🖶 KPIs 🔥	▼ Business	Measure Information
Average Process Duration	Name	Average Acceptable Credit Risk? Yes Branch Percentage
Acceptable Credit Risk? Yes Bran	Туре	KPI Instance metric Aggregate metric Unspecified
Account in Good Standing? Yes B Account in Good Standing? Yes B Account in Good Standing? No Br Approve Without Review? Yes B Approve Without Review? No Br	Description	This metric measures the average decision branch percentage for Acceptable Gredit Risk? Yes.
Cancel Order and Send Notificati	Business Measu	re Details Dashboard Samples
Check Order Handing Policy For	▼ Aggrega	ation Function
Ship Order Processing Time Ship Order to Customer Processi Judate Order Database Processi Judate Order Database Processi Dirice per Order	Specify h	ow to apprepate this measure across multiple runs of the process (Average v
Aggregate Metrics	▼ Dimensio	uns for Analysis
Average Acceptable Credit Risk?	You can specifi city and sales r	y categories that you can use to organize and select data for reporting and analysis. Example dimensions might include location, representative.
Average Account in Good Standi	🗸 Specify t	he dimensions that will be available in the dashboards for analysis of this metric
Average Approve Without Revie Average Cancel Order and Send Average Check Customer Accour Average Check Customer Accour	E	imenson Add Remove

- 6. Click **Business Measure Details** tab. Select **Specify a target type and value**. Select the type as **Number** and change the target value to **90**.
- 7. Select Specify range details and Percentage of target value (target value = 100%).
- 8. Under **Specify ranges**, click **Add** and change the **Range name** to Shipped orders percentage too low. Set the start value as 0 and the end value as 85. Perform the same actions for the following ranges:

Range name	Start value	End value
Shipped orders percentage good	85	90
Shipped orders percentage great	90	100

Tip: In many tables that have an Add button, you can click Add or double-click in a row in the table to add a row.

Name	Percentage of Orders Shipped				
Туре	● KPI ○ Instance metric ○ Aggregate	metric OUnspecified			
Description	Percentage of orders that are shipped				
	ma Dataila Daatha and Casalan				
siness Meas	ure Decails Dashboard Samples				
siness Meas Ranges Specify ra Ranges O Perc	ange details: can be defined as percentages of the target v entage of target value (target value = 100%)	value or as fixed, actual values.			
siness Meas Ranges Specify ra Ranges Perc Actu Specify A ranges	ange details: can be defined as percentages of the target v entage of target value (target value = 100%) ial value ranges	value or as fixed, actual values,	which to track your KPT		
siness Meas Ranges Specify ra Ranges Perc Actu Specify A range	ange details: can be defined as percentages of the target v entage of target value (target value = 100%) ial value ranges is a set of values, such as allowable margins of Rance Name	value or as fixed, actual values. or lower and upper limits, against	which to track your KPI. End Value		
isiness Meas Ranges Specify ra Ranges ● Perc ● Actu Specify A range Specify S	ange details: can be defined as percentages of the target v entage of target value (target value = 100%) ial value ranges is a set of values, such as allowable margins of Range Name Shipped orders percentage too low	value or as fixed, actual values. or lower and upper limits, against Start Value 0 %	which to track your KPI.	Add	
Isiness Meas Ranges Specify ra Ranges Perc Actu Specify A range	ange details: can be defined as percentages of the target v entage of target value (target value = 100%) al value ranges is a set of values, such as allowable margins of Range Name Shipped orders percentage too low Shipped orders percentage good	value or as fixed, actual values. or lower and upper limits, against Start Value 0 % 85 %	which to track your KPI. End Value < 85 % < 90 %	Add	
siness Meas Ranges Specify ra Ranges Perc Actu Specify A range Specify A range	ange details: can be defined as percentages of the target v entage of target value (target value = 100%) ial value ranges is a set of values, such as allowable margins of Range Name Shipped orders percentage too low Shipped orders percentage great	value or as fixed, actual values. or lower and upper limits, against Start Value 0 % 85 % 90 %	which to track your KPI. End Value < 85 % < 90 % 100 %	Add	

- **9**. Select **Specify when to send an alert and the action to take as a result**. Click **Add**. The Percentage of Orders Shipped Alert is added. Change it to Percentage of Orders Shipped < 85%.
- 10. Select Specify a time period over which the business measure will be monitored. Select Rolling and Last 30 days.

	Percentage of Orders Shipped	
Туре	⊙ KPI ○ Instance metric ○ Aggregate metric ○ Unspecified	
Description	Percentage of orders that are shipped	
Business Measu	ure Details Dashboard Samples	
Alerts		
Specify w	when to send an alert and the action to take as a result	
P	Percentage of Orders Shipped Alert < 85%	
Time Per	riod for Data Collection	
Time Per ✓ Specify a	Percentage of Orders Shipped Alert < 85% Remove riod for Data Collection a time period over which the business measure will be monitored	

11. Click **OK** and save your work.

Creating the Average Process Duration key performance indicator

In this lesson, you will set up the average process duration as a KPI.

Another KPI to track is the average process duration. By tracking this KPI you can determine, automatically, if your business is being successful as defined by predetermined criteria.

Complete the following steps:

- 1. Click Add to add a new business performance indicator.
- 2. In the Business Measure Details wizard, enter the name Average Process Duration and click KPI.
- 3. In the **Description** field, type Measure average time of business process duration.
- 4. Select Specify a target value and type.
- 5. In the Type field, select Duration .
- 6. Specify 3 in the Days field.
- 7. Select **Specify range details** and click **Actual value**.
- 8. Under Specify ranges, click Add. Change the range name to Duration is acceptable, the start value to 1 Day and the end value to 3 days.
- 9. Click Add again. Change the range name to Duration is too long, the start value to 3 Days and the end value to 5 days.

lamo				
vanie	Average Process Duration			
Туре	③KPI ○Instance metric ○Aggre	egate metric 🛛 Unspecified		
Description	Measure average time of business pro	cess duration		
isiness Measi	ire Details Dashboard Samples			
Target	type and value			
he target is a	an exact value that the KPI should achiev	re.		
Specify a	a target type and value			
Type;	Duration			
	Davs Hours Minu	ites Seconds Milliseconds		
Target v				
' Ranges				
Ranges	inge details:			
Specify ra	ange details: can be defined as percentages of the tai	rget value or as fived, actual values		
Ranges	inge details: can be defined as percentages of the tar entage of target value (target value = 10	get value or as fixed, actual values. J0%)		
Ranges Specify ra Ranges Perce	ange details: can be defined as percentages of the tar antage of target value (target value = 10 al value	rget value or as fixed, actual values. 10%)		
Specify ra Ranges Perce Actu	ange details: can be defined as percentages of the tar entage of target value (target value = 10 al value	rget value or as fixed, actual values. 00%)		
Ranges Specify ra Ranges Perce Actual Specify (ange details: can be defined as percentages of the tar entage of target value (target value = 10 al value ranges	rget value or as fixed, actual values. 10%)		
Ranges Specify ra Ranges Perce Actu Specify I A range	unge details: can be defined as percentages of the tar antage of target value (target value = 10 al value ranges is a set of values, such as allowable marg	get value or as fixed, actual values. 10%) gins or lower and upper limits, against wh	ich to track your KPI.	
Ranges Specify ra Ranges Perce Actu Specify r A range	inge details: can be defined as percentages of the tar Intage of target value (target value = 10 al value ranges is a set of values, such as allowable mar Range Name	get value or as fixed, actual values. 30%) gins or lower and upper limits, against wi Start Value	ich to track your KPI. End Value]
Ranges Specify ra Ranges Perce Actual Specify I A range	inge details: can be defined as percentages of the tar intage of target value (target value = 10 al value ranges is a set of values, such as allowable mar Range Name uration is acceptable	rget value or as fixed, actual values. 10%) gins or lower and upper limits, against wh Start Value 1 Day 0 Seconds	ich to track your KPI. End Value < 3 Days 0 Seconds	Add

- 10. Select Specify when to send an alert and the action to take as a result.
- 11. Click Add. An Average Process Duration Alert is added. Change it to Average Process Duration > 3 days.
- 12. Select **Specify a time period over which the business measure will be monitored**. Select **Repeating**, and choose the period type as **Yearly**, the time zone as **GMT-5**, and the base period as **Period in**

Name	/erage Process Dura	tion		
Type 🔘	KPI O Instance me	etric O Aggregate metric O Un	specified	
Description Mea	asure average time o	f business process duration		
Business Measure De	tails Dashboard S	amples		
Time Period	d for Data Coll	ection		
Specify a time	period over which th	e business measure will be monitor	ed	
⊙ Repeatir	19	O Rolling	O Fixed	
Period ty	pe:	Last:	Start date:	
Year	iy γ 🔻	30 🚔 day	s 💌	
Time zone	e:	1	End date:	
GMT	-5 💌]		
Base peri	od on:		Time;zone;	
○ L	ast full period		GMT-5	
O P	eriod in progress			
	ter			
🔻 KPI Data Fil				

13. Select **Specify how to calculate this KPI**. In the **Instance metric to aggregate** field, select **OrderHandling Processing Time**. In the **Aggregation function** field, select **Average**

Nam	Average Process Durati	ion	
Туре	⊙ KPI ○ Instance met	ric OAggregate metric OUnspecified	
Description	Measure average time of	business process duration	
usiness Measu	re Details Dashboard Sa	imples	
KPI Calcu	llation Details		
ipecify the me he time period Specify ho	thod used to calculate this and data filters for use wi ow to calculate this KPI	KPI. If you choose to calculate the KPI based on an instance metric, you will also be able to specify th the KPI.	
ipecify the me he time period Specify ho O Based	thod used to calculate this and data filters for use wi ow to calculate this KPI on an instance metric and	KPI. If you choose to calculate the KPI based on an instance metric, you will also be able to specify th the KPI. I an aggregation function	
ipecify the me he time period Specify ho O Based Insta	thod used to calculate this and data filters for use wi ow to calculate this KPI I on an instance metric and nce metric to aggregate:	KPI. If you choose to calculate the KPI based on an instance metric, you will also be able to specify th the KPI. I an aggregation function OrderHandling Processing Time	
ipecify the mei he time period ✓ Specify ho ④ Based Instar Aggre	thod used to calculate this and data filters for use wi ow to calculate this KPI on an instance metric and nce metric to aggregate: agation function:	KPI. If you choose to calculate the KPI based on an instance metric, you will also be able to specify the KPI. I an aggregation function OrderHandling Processing Time Average	

14. Click OK and save your work.

Creating the Price per Order instance metric

In this lesson, you will create an instance metric for price per order.

The Price per Order metric is used as a source for aggregations that average the order prices and also total the order prices.

- 1. Click Add to add a new instance metric.
- 2. Enter the name as Price per Order.
- 3. For the Type, select Instance metric.
- 4. In the **Description** field, type price per order.
- 5. Under Instance Metric Calculation Details, select Specify how to calculate this instance metric. In the Template field, select Business Item Input. In the Process element field, select OrderHandling. For the Attribute field, click on the Browse button. In the Business Item Attribute Selection window, expand Order (Order) and select TotalPrice. Click OK. The selection displays as Order.TotalPrice (Order).
- 6. Click OK and save your work.

	Price per O	rder	
Туре	⊖крі ⊚і	Instance metric 🔿 Aggregate metric 🔿 Unspecified	
Description	This metric n	leasures the value of an attribute of the input to OrderHandling,	8
isiness Measu	ure Details D	Vashboard Samples	
Instance	e Metric Ca	Iculation Details	
pecify the me	ethod used to a	alculate this instance metric.	
Specify h	iow to calculate	a this instance metric	
() Using) a prederined i plate	uusiness Item Input	
Temp			
Temp Proce	ess element	Ordernanding 💉	
Temp Proce Attrib	ess element bute	Order.TotalPrice (Order) Browse	

Creating the Order Price Total aggregate metric

In this lesson, you will create the order price total aggregate metric.

The order price total aggregate metric is another parameter necessary to measure the success of the business.

Complete the following steps:

- 1. Click Add to add a new aggregate metric.
- 2. Enter the name as Order Price Total.
- 3. For the Type, select Aggregate metric.
- 4. In the Description field, type Total value of the orders.
- 5. Select **Specify how to aggregate this measure across multiple runs of the process**. In the **Function** field, select Sum.
- 6. In the Aggregate Metric Calculation Details section, select **Specify how to calculate this aggregate metric**. In the **Instance metric to aggregate** field, select Price per Order.

Business Measure Details	Dashboard Samples	
Function. Join		
▼ Aggregate Metri	ric Calculation Details	
Specify an instance metric	c to use to calculate this aggregate metric.	
Specify how to calcul	ulate this aggregate metric	
Instance metric to ap	aggregate: Tits par Order New Analysis remetric as the implementation for each dimension. For example, an instance metric that holds the name of a city	
can be the implementation	n for the city dimension.	
Specify the dimension	ons that will be available in the dashboards for analysis of this metric	
Dimension	Instance Metric	
Location	Add Remove:	
		-

7. Select **Specify the dimensions that will be available in the dashboards for analysis of this metric**. Keep the dimension as **Location**.

siness Measures					
Average Process Duration	▼ Busines:	s Measure Information			
Acceptable Credit Risk? Yes Br	Name	Order Price Total			
	Turne			Otherselled	
Account in Good Standing? No	Type	O KP1 O Inscance metric G	Aggregate metric	Conspectived	
Approve Without Review? Yes	Description	Total value of the orders			
Cancel Order and Send Notifica					
Check Customer Account Stat.					
Check Order Handling Policy fo	Business Measu	re Details Dashboard Samples			
Review Order Processing Time					
Ship Order to Customer Proces	Aggreg	ation Function			
Update Order Database Proce:	Specify I	how to aggregate this measure ac	ross multiple runs of t	the process	
Aggregate Metrics	E un abien	u Sum 🖃	1		
Average Acceptable Credit Ris	Pancool	E John			
Average Acceptable Credit Ris	▼ Aggreg	ate Metric Calculation D	letails	2	
Average Account in Good Stan	Specify ap ind	tance metric to use to calculate th	is angregate metric	*	
- 🚵 Average Approve Without Rev		how to calculate this apprendite of	abric		
Average Approve Without Rev	Dipotity	now to calculate ons aggregate in	ounc		
Average Cancel Order and Ser	Instance	e metric to aggregate:		• New	
Average Check Order Handling					
Average OrderHandling Proces	The Dimensional Dimensiona Dimensiona D	ions for Analysis			
Average Review Order Process Average Ship Order to Custom Average Undate Order Databa	You can provid can be the imp	de an instance metric as the imple dementation for the city dimension	mentation for each dir n.	mension. For example, an instance metric that holds the name of a cit	y
Order Price Total	Specify Specify	the dimensions that will be availab	le in the dashboards f	or analysis of this metric	
Location		Pimension		Instance Metric	-
Unspecified Metrics	L	ocation		Add	4
4 1 1				Remov	re

8. Click **OK** and save your work.

Creating the Order Price Average aggregate metric

In this lesson, you will create the order price average aggregate metric.

The order price average is another parameter you use to measure the success of the business.

Complete the following steps:

- 1. Click Add to add a new Business Performance Indicator.
- 2. Enter the name as Order Price Average.
- 3. In the **Type** field, select **Aggregate metric**.
- 4. In the **Description** field, type Average value of orders.
- 5. Select **Specify how to aggregate this measure across multiple runs of the process**. In the **Function** field, select **Average**.
- 6. In the Aggregate Metric Calculation Details section, select **Specify how to calculate this aggregate metric**. In the **Instance metric to aggregate** field, select **Price per Order**.
- 7. In the Dimensions for Analysis section, select **Specify the dimensions that will be available in the dashboards for analysis of this metric**. Keep the dimension as **Location**.

Name	Order Price Average		
Туре	O KPI O Instance metric O Agg	gregate metric O Unspecified	
Description	Average Value of Orders		
isiness Measi	ure Details Dashboard Samples		
Aggreg	ation Function		
Specify	how to aggregate this measure across n	multiple runs of the process	
ц/-	· · · · · · · · · · · · · · · · · · ·		
Function	n: Average		
' Aggreg	ate Metric Calculation Detai	ils	
necify an insl	tance metric to use to calculate this and	regate metric	
sour y arrais		an eddenser in west veri	
D Specify I	how to calculate this addregate metric		
Specify	how to calculate this aggregate metric		
Specify I	how to calculate this aggregate metric e metric to aggregate: Price per Ord e	er 💌 New	
Specify I	how to calculate this aggregate metric e metric to aggregate: Price per Orde	er 💌 New	
Dimens	how to calculate this aggregate metric e metric to aggregate: Price per Orde sions for Analysis	er 💌 New	
Dimens	how to calculate this aggregate metric e metric to aggregate: 2016 cer Orde sions for Analysis de an instance metric as the implementa	er New ation for each dimension. For example, an instance metric that holds the name of a city	
Specify I Instance Dimens Ou can provid	how to calculate this aggregate metric e metric to aggregate: Exions for Analysis de an instance metric as the implementa plementation for the city dimension.	er Image: New ation for each dimension. For example, an instance metric that holds the name of a city	
Specify Instance Dimens Ou can provid an be the imp Specify	how to calculate this aggregate metric e metric to aggregate: sions for Analysis de an instance metric as the implementa plementation for the city dimension. the dimensions that will be available in th	er New ation for each dimension. For example, an instance metric that holds the name of a city the dashboards for analysis of this metric	
Specify I Instance Dimens ou can provie an be the imp Specify I	how to calculate this aggregate metric e metric to aggregate: Sions for Analysis de an instance metric as the implementa plementation for the city dimension. the dimensions that will be available in th Dimension	ation for each dimension. For example, an instance metric that holds the name of a city the dashboards for analysis of this metric	

8. Click **OK** and save your work.

The business performance indicators you added are listed in the business measures summary. The business measures summary is located under the **Business Performance Indicators** tab.

is section provides information about business measures such as metrics and KPIs.				
Vame	Target	Time Period	Description	
🗄 🕌 KPIs				
Recentage of Orders Shipped	90	Rolling: 30 days	Percentage of orders that are shipped	
Average Process Duration	3 Days 0 Se	Repeating: yearly	Measure average time of business process duration	
🗄 😸 Instance Metrics				
🕍 Acceptable Credit Risk? Yes Bran			This metric measures whether the Yes branch for Acceptable Credit Risk? was taken.	
📩 Acceptable Credit Risk? No Branc			This metric measures whether the No branch for Acceptable Credit Risk? was taken.	
🕍 Account in good Standing? Yes Br			This metric measures whether the Yes branch for Account in good Standing? was taken.	
🕍 Account in good Standing? No Bra			This metric measures whether the No branch for Account in good Standing? was taken.	
🖄 Approve without review? Yes Bra			This metric measures whether the Yes branch for Approve without review? was taken.	
🖄 Approve without review? No Bran			This metric measures whether the No branch for Approve without review? was taken.	
Calculate Shipping Charges Proce			This metric measures the processing time of Calculate Shipping Charges.	
Cancel Order and Send Notificatio			This metric measures the processing time of Cancel Order and Send Notification.	
Check customer Account Status F			This metric measures the processing time of Check customer Account Status.	
Check Order Handling Policy for A			This metric measures the processing time of Check Order Handling Policy for Automatic A.	
CriterHandling Processing Time			This metric measures the processing time of OrderHandling.	
Review Order Processing Time			This metric measures the processing time of Review Order.	
Ship Order to customer Processin			This metric measures the processing time of Ship Order to customer.	
🛗 Update Order Database Processi			This metric measures the processing time of Update Order Database.	
Price per Order			This metric measures the value of an attribute of the input to OrderHandling.	
E Aggregate Metrics				
III Dimensions				
Average Acceptable Credit Risk?			This metric measures the average decision branch percentage for Acceptable Credit Risk.	
Average Acceptable Credit Risk?			This metric measures the average decision branch percentage for Acceptable Credit Risk.	
Average Account in good Standin			This metric measures the average decision branch percentage for Account in good Standi	
Average Account in good Standin			This metric measures the average decision branch percentage for Account in good Standi	
Average Approve without review			This metric measures the average decision branch percentage for Approve without revie.	
Average Approve without review			This metric measures the average decision branch percentage for Approve without revie.	
Average Calculate Shipping Char			This metric measures the average processing time of Calculate Shipping Charges.	
Average Cancel Order and Send			This metric measures the average processing time of Cancel Order and Send Notification.	
Average Check customer Accoun			This metric measures the average processing time of Check customer Account Status.	
Average Check Order Handling Pr			This metric measures the average processing time of Check Order Handling Policy for Aut	
Average OrderHandling Processin			This metric measures the average processing time of OrderHandling.	
Average Review Order Processin			This metric measures the average processing time of Review Order.	
Average Ship Order to customer			This metric measures the average processing time of Ship Order to customer.	
Average Update Order Database			This metric measures the average processing time of Update Order Database.	
Order Price Total			Total value of the orders	
Order Price Average			Overage Value of Orders	

Exporting the model for further development

In this lesson, you will export the business process model from IBM WebSphere Business Modeler in a format that you will import into WebSphere Integration Developer.

You have completed modeling the Clips and Tacks business process. Now you will export this model from IBM WebSphere Business Modeler and import it into WebSphere Integration Developer for further development. You will also use it in the WebSphere Business Monitor development toolkit.

Complete the following steps:

1. Select the **Errors** tab and ensure there are no errors in the model. If there are errors, then correct them. You have four warnings in your model at this point, but they will be resolved during integration development. If other warnings are displayed, they are acceptable.

	Description	Element name	Element type
۷	The dimension "Location" for the aggregate metric "Order Price Average" for th	Order Price Aver	Business Measure
Æ	The dimension "Location" for the aggregate metric "Average Acceptable Credit	Average Accepta	Business Measure
۷	The dimension "Location" for the aggregate metric "Order Price Total" for the el	Order Price Total	Business Measure
۲	The KPI "Percentage of Orders Shipped" for element "OrderHandling" does not	Percentage of Or	Business Measure

2. Right-click ClipsAndTacksF1 on the project tree and select Export.

🚏 WebSphere Business Modeler Export	_ 🗆 ×
Select the format or product to which you want to export	00
Export model elements for use with WebSphere Integration Developer in creating an implementation for WebSphere Process Server. Before you use this export, check the validity of your model using the WebSphere Process Server mode.	100
Types Types WebSphere Business Modeler project (.mar) WebSphere MQ Workflow Buildtme (.fd) WebSphere Business Modeler XM (.mm) WebSphere Busines Modeler XM (.mm) WebSphere Busines Modeler XM (.mm) WebSphere Studio Application Developer Integration Edition FileNet Business Process Manager (.srd) WebSphere Spools developer Add Pational Data Architect Delimited text (.csv, .txt)	
< Back. Mewt > Erish	Cancel

- 3. Select WebSphere Integration Developer and then click Next.
- 4. Select a target directory (for example, C:\ClipsAndTacks).

🕽 WebSphere Business Modeler Export	X
Export options	\$-□
Ensure that the reference groups for the selected projects are correct and dick Next to continue	400
Target directory	
C:\ClipsAndTacks	Browse
 Export entire project and related projects Export specific elements 	
ClipsAndTacksF1	
Enable default events	
Overwrite files	/
< <u>Back</u> <u>N</u> ext >	Cancel

- 5. Select Export entire project and related projects and click Next.
- 6. Select the **Module** export option.
- 7. Ensure Export using the standard project interchange format for other environments is selected.
- 8. Clear **Append timestamp to project interchange name** (so that it is easier to define the name in this tutorial) and click **Next**.

WebSphere Business Mo	odeler Export	
ebSphere Integration [eveloper export details	⊘יר
ecify export details, then click siness Modeler and WebSphere	inish to export. Use the recommended export option for interoperability between Websphere Integration Developer.	
Select the export op Module This option creates a single for a proof of concept appli	tion module project. Choose this option only if you have a small model with simple processes, for example cation.	
Export using the s Project Interchan CliesAndTacksE1	standard project interchange format for other environments ge Name	
Append timesta	amp to project interchange name	
Target Project Names		
Modeler Project Name	Module Name	
ClipsAndTacksF1	ClipsAndTacksF1	
	< Back Next > Finish	Cancel

- 9. Select Export business measures as a monitor model or models.
- **10**. Clear **Append timestamp to project interchange name** (to simplify the name in this tutorial) and click **Finish**. The Export finished window is displayed, informing you that the export finished warnings.

WebSphere Business Modeler Export		Þ
Websphere Integration Developer business	measures export	\$-D
To export your business measures as a monitor model, sele	ect the check box and specify the kind of export.	-d-O
Export business measures as a monitor model or m	odels	
Export to a single monitor model, which combine	es the business measures with the events from WebSphere Integration Developer	
O Export to two monitor models, one containing th	he business measures and the other containing the events from WebSphere Integratio	on Developer
Project Interchange Name		
ClpsAndTacks1_Monitor	me	
Target Project Names	Monitor Protect Names	
ClpsAndTacksF1	ClipsAndTacksF1_Monitor	
		_
	K Back Next > Finish	Cancel
	C Berr Gevra Buan	Justice

11. You can ignore the warning because you will be running the application on a server that has been augmented with WebSphere Business Services Fabric. To view the warning, click **Details**; otherwise, click **OK**.

The project is placed in a ZIP file, **ClipsAndTacksF1.zip**, that can be imported into WebSphere Integration Developer as a single file.

Integration development

During the integration development phase, use IBM WebSphere Integration Developer to develop a business process and business rules, generate Java components, create a WebSphere Business Services Fabric project, and create the user interface.

In the integration development phase, complete the following tasks:

- 1. "Importing model files into WebSphere Integration Developer"
- 2. "Setting up the Lotus Forms Server API workspace" on page 57
- 3. "Setting up the project to use the WebSphere Business Services Fabric runtime APIs" on page 58
- 4. "Importing web services endpoints into WebSphere Integration Developer" on page 59
- 5. "Defining business rules" on page 60
- 6. "Generating Java components" on page 62
- 7. "Adding a Dynamic Assembler extension" on page 65
- 8. "Creating the process invocation method" on page 67

Importing model files into WebSphere Integration Developer

In this lesson, you will import the exported file from IBM WebSphere Business Modeler into WebSphere Integration Developer. You can use the ClipsAndTacksF1.zip file that you created with the previous tasks, or you can use the ClipsAndTacksF1.zip provided with this tutorial. See the Chapter 5, "Download and import samples," on page 141 section for instructions on downloading the provided project interchange file.

Complete the following steps:

1. Start WebSphere Integration Developer V6.2. The Workspace Launcher opens.



2. Create a new workspace for this tutorial, for example C:\Documents and Settings\Administrator\ IBM\wid6.2\ClipsAndTacks.

Note: Do not select **Use this as the default and do not ask again** so you will be prompted for a workspace location each time you open the application.

- 3. Click OK. WebSphere Integration Developer opens. If the Welcome page is displayed, close it.
- 4. To import the PI file, select **File > Import**. The Import wizard opens.
- 5. Select Other > Project Interchange and click Next.

🚯 Import		
Select Import a project and its de	ependent projects from a Zip file	Ľ
Select an import source:		
type filter text		
CVS CVS CVS CVS CUC LB LB Dava EE Plug-in Developr CUC Profiling and Log CUC CUC CUC CUC CUC CUC CUC C	nent Iging	
0	< <u>B</u> ack <u>N</u> ext >	Einish Cancel

6. From the Import Project Interchange Contents wizard, in the **From zip file** field, click **Browse** and select the ClipsAndTacksF1.zip file of your choice (either the supplied file or the one you built in the previous section).

🖶 Import Project Inte	rchange Contents	
Import Projects Import Projects from a zi	p file.	Ç,
From zip file: C:	\Users\Administrator\Desktop\ClipsAndTacks Files\	Browse Browse
ClipsAndTacksF1		
Select All Deselect A	Select Referenced	
(?)	< Back Next > Finish	Cancel

7. Select ClipsAndTacksF1 and click Finish.

Setting up the Lotus Forms Server API workspace

In this lesson, you will add two .jar files to enable the Lotus Forms Server API to compute some of the values in the Order form automatically.

To add the two .jar files, complete the following steps.

1. In WebSphere Integration Developer, select **Window** → **Preferences** and expand the list of configurable

items by clicking the 🖼 .

2. Select Java → BuildPath → Classpath Variables.

Note: If Java does not display as an option, switch to a Java perspective. Select **Window** → **Preferences** and switch back to the Business Integration perspective.

3. Add two variables named *FORMS_API* and *FORMS_API2* as shown in the following figure. These variables point to the location of the .jar files, pe_api.jar and uwi_api.jar. The location of these files depends on how Lotus Forms Server was installed. If Lotus Forms Server was installed into WebSphere Integration Developer, these files are typically located at: <WID62_Install>\API\lib\java. If not, these files are typically located at C:\Windows\PureEdge\76\java\classes.



4. Click OK.

Note: The ClipsAndTacksF1 project has some errors at this stage of the tutorial. These errors will be corrected as the tutorial progresses.

Setting up the project to use the WebSphere Business Services Fabric runtime APIs

In this lesson, you will replace the WebSphere Process Server V6.2 runtime library with the WebSphere Business Services Fabric V6.2 runtime library.

This project includes implementations and functionality that use several of the WebSphere Business Services Fabric V6.2 runtime APIs. To use the WebSphere Business Services Fabric V6.2 runtime APIs, its runtime library must replace the existing WebSphere Process Server V6.2 runtime library in the project's preferences.

Note: WebSphere Business Services Fabric V6.2 runs on WebSphere Process Server V6.2. The WebSphere Process Server runtime library and all of its APIs are still available during development.

Complete the following steps:

- 1. Right-click ClipsAndTacksF1, and then select Properties.
- 2. Click Java Build Path and select the Libraries tab. Select WebSphere Process Server V6.2 and click Remove. If WebSphere Business Services Fabric server V6.2 is already listed, click Cancel.

🚯 Properties for ClipsAndTacks	F1	
type filter text	Java Build Path	\leftarrow \rightarrow \rightarrow \checkmark
Resource BeanInfo Path Builders Builders	$\textcircled{ D}$ Source $\fbox{ D}$ Projects $\textcircled{ D}$ Libraries $\fbox{ D}_{O}$ Order and Libraries JARs and class folders on the build path:	Export
- Integration Test Client	⊡-⇒ JRE System Library [WebSphere Process Server v ⊕-⇒ WebSphere Process Server v6.2 [WebSphere Pro	Add JARs
Im Java Code Style		Add External JARs
E Java Editor		Add Library
- Java EE Module Dependencies		Add Class Folder
		Add External Class Eolder
- Project Facets Project References		<u>E</u> dit
Refactoring History Repository Configuration		Remove
		Mgrate JAR File
Web Debug ADoclet		
0	[OK Cancel

3. Click Add Library, select Server Runtime, and then click Next.

🕂 Add Library				
Add Library Select the library t	ype to add.			ā
Build to Manage Lib Connectivity Driver EAR Libraries JJRE System Library JSE Lubraries JUnit Monitor Runtime Lib Plug-in Dependencio Gerver Runtime User Library Web App Libraries	raries Definition rary ss			
0	< <u>B</u> ack	Next >	Einish	Cancel

4. Select **WebSphere Business Services Fabric server V6.2**, and then click **Finish** and **OK** in the next window.

Importing web services endpoints into WebSphere Integration Developer

In this lesson, you will import information about previously created web services and their endpoints into WebSphere Integration Developer. See the Chapter 5, "Download and import samples," on page 141 section for instructions on downloading the necessary files.

While working through the Clips and Tacks sample, you will use several web services that were previously created. These web services could be hosted on any server, but for simplicity the services will be hosted on the same test server where you are running the sample.

Complete the following steps:

- 1. Click **File** → **Import** to import the ClipsAndTacksEndpoints.zip.
- 2. On the Import page, click **Other** → **Project Interchange** and click **Next**.
- **3.** On the Import Project Interchange Contents page, click **Browse** and select **ClipsAndTacksEndpoints.zip**.

👍 Import Project Int	erchange Conten	ıts		
Import Projects Import Projects from a	zip file.			Ç,
From zip file:	C:\download\C&T_W C:\Documents and S	VDPE_6_2_dowr iettings\Administ	iloads\C&T_wdp 💌	Browse Browse
 ✓ EBetterShipping ✓ EBetterShipping ✓ EInternalShipping ✓ InternalShipping ✓ InternalShipping ✓ EInternationalE: ✓ ELocalShippersE ✓ ELocalShippersE 	Endpoint EndpointEAR igEndpointEAR (pressEndpoint (pressEndpointEAR ndpoint ndpointEAR			
Select All Deselect	All Select Referen	nced		
(?)	< <u>B</u> ack	Next >	<u> </u>	Cancel

4. Select all the entries that are available and click **Finish**. WebSphere Integration Developer displays the Business Integration perspective.

Before continuing, wait for Building Workspace to complete. The status is located in the bottom right-hand corner of the workspace.

Defining business rules

In this lesson, you will convert the artifacts from WebSphere Business Modeler into an artifact that you can deploy to the server.

Business rules must exist to specify criteria that allow the automated processes to run without further human intervention. In WebSphere Business Modeler you defined the template and if-then rule for autoApproval. However, the one implementation details that is still missing is to initialize the output variable before running the if-then rule.

Complete the following steps:

1. In the project tree, expand ClipsAndTacksF1 and select Integration Logic → Rule Logic → processes/orderhandling.



- 2. Double-click **AutoApprovalF1**. If the Generated File Warning displays, click **Yes**. The business rule set editor opens.
- 3. Click the Add Action Rule icon 鄰 under Rules.
- 4. To copy the input variable to the output variable, click **Action** and select **Output:Order**. Then select = and then **Input:Order**.

▼ Rules	🕄 🏶 🔊 🖑 🗙
Name	Rule1
Presentation	
Action	Action
▼Templates Name ✓ Build Activities Server ፪፬ WebSp ₩ebSp	Y Set var 1 to var 2 Call a method Input : Order Output : Order Output : Order Create BO Prop Prop here here

- 5. Right click on the new rule and select Move Rule Up
- 6. Save your work.

At this point, all of the errors are resolved. The following image shows the completed rule logic.

AutoApprovalf	1 8						-
Rule Set							
Name	Auto	ApprovalF1			Display Name	AutoApprovalF1	
Interface							
(I) Interface		CheckOrderHa	ndlingPolicyforAu	comaticApproval			
Operation	1	InputCriterion					
Di Input		Input				<u>Order</u>	
ID Output		Output				<u>Order</u>	
•Variables	/ + ×						
Name					Туре		
Presentation Action	Output = Inpu	t		T:			
Name	Rule2						
Template	AutoApprovalT	emplate					
Presentation	If 'Check Order then 'Check O	r Handling Polic; rder Handling P	/ For Automatic Aj olicy for Automati	oproval.Input.TotalPrice c Approval.Output.Orde	' is less than or equa erProcessingPreferen	l to <u>[750.00]</u> , ce.automaticApproval' is set to True	
Templates		×					
Name	AutoApprovalT	emplate					
Presentation	If 'Check Order then 'Check O	r Handling Policy rder Handling P	/ for Automatic Ap olicy for Automati	oproval.Input.TotalPrice c Approval.Output.Orde	' is less than or equa ProcessingPreferen	l to (totalPriceMax) ce.automaticApproval' is set to True	
Description							
Parameters	Name	Туре	Constraint	Description			4
	totalPriceMax	double	None	maximum purchase p	price for automatic ap	oproval	
If	Input.TotalPric	e <= totalPrice	Max				
Then	Output.OrderF	rocessingPrefe	rence.automaticA	pproval = true			

Generating Java components

In this lesson, you will generate Java components to provide implementation code for the tasks created in WebSphere[®] Business Modeler.

This section discusses how to provide the implementation code for the following Java components:

- CheckCustomerAccountStatus
- UpdateOrderDatabase
- CancelOrderandSendNotification
- CreditRating

Complete the following steps:

- 1. Double-click the assembly diagram.
- 2. Right-click in a blank area on the assembly diagram panel and select **Automatic Layout**. Save your work.
- 3. Double-click CheckCustomerAccountStatus.



The CheckCustomerAccountStatusImpl.java window opens.

4. Replace the contents of the following method:

```
public commonj.sdo.DataObject InputCriterion(commonj.sdo.DataObject Input) {
    //TODO Needs to be implemented.
    return null;
    }
    with the following content:
    public DataObject InputCriterion(DataObject input) {
        System.out.println(
        "Check Customer Account Status Invoked");
        // create CreditRating bean
        com.clipstacks.credit.CreditRating creditRating =
        new com.clipstacks.credit.CreditRating();
        // call CreditRating bean to update the BO
        DataObject orderOut = creditRating.calculateCreditRating(input);
        return orderOut;
    }
}
```

```
}
```

- 5. Save your work. Ignore the errors at this time because they will be fixed after you create the Java[™] components in the next steps.
- 6. For UpdateOrderDatabase, replace the contents of the following method:

```
public commonj.sdo.DataObject InputCriterion(commonj.sdo.DataObject input) {
    //TODO Needs to be implemented.
    return null;
    }
    with the following content:
```

```
public DataObject InputCriterion(DataObject input) {
    System.out.println("Update Order Database invoked");
    return input;
```

}

- 7. For CancelOrderandSendNotification,
 - a. Select all of the text on the CancelOrderandSendNotificationImpl.java window and delete it.
 - b. Open the CancelOrderandSendNotificationImpl.java file, then copy and paste its contents into the CancelOrderandSendNotificationImpl.java window.
- 8. Save your work and close the window.

- 9. Create a Java package to implement calculation of customer credit rating by clicking File → New → Other and then Java → Package. Click Next .
- 10. In the **Source folder** field, click **Browse** and select **ClipsAndTacksF1** → **gen/src**. Click **OK**.
- 11. For the Java package name, enter com.clipstacks.credit and then click Finish.

🕑 New Java	Package	X
Java Packag Create a Java p	je Vackage.	Ť
Creates folders	corresponding to packages.	
Source fol <u>d</u> er:	ClipsAndTacksF1/gen/src	Browse
Name:	com.clipstacks.credit	
0	< <u>B</u> ack <u>N</u> ext > <u>F</u> inish	Cancel

- **12**. Switch to the Physical Resources view by clicking the **Physical Resources** tab (located in the same area as the Business Integration tab).
- 13. Expand ClipsAndTacksF1 → com → clipstacks → credit and copy the CreditRating.java file that you downloaded following the directions in Chapter 5, "Download and import samples," on page 141. Then paste the file into the credit folder.



- 14. Switch back to the assembly diagram editor and save it.
- 15. Save any unsaved items. An open window with an asterisk (*) on the tab indicates that it is not saved. You should not have errors now.
- 16. Rebuild all the projects by clicking **Project** → **Clean**, and then click **OK**.

Project	Data	Run	Window	Help	
0	pen Pro	oject			
C	lose Pro	oject			
BI	uild All				Ctrl+B
Bi	uild Proj	ject			
B	uild Wor	rking S	et		+
C	lean				
✓ Bi	uild Aut	omatic	ally		
В	usiness	Integr	ation Proje	ects	•
0	onvert	to a Dy	ynamic We	b project.	
Pr	ropertie	S			

Adding a Dynamic Assembler extension

In this lesson, you will implement a Dynamic Assembler extension for the CalculateShippingCharges component.

WebSphere Business Services Fabric uses a component called Dynamic Assembler (DA) to select the appropriate endpoint based on assertions and policies.

An *assertion* is a concept in the WebSphere Business Services Fabric meta-model that is used to specify a policy requirement and evaluate endpoints at run time. It is also used to describe the capabilities of an endpoint. For example, Endpoint A supports service invocations for EXISTING customers and accountSize = SMALL.

A *policy* defines the business requirements that have to be met when a consumer requests a service. A policy is a set of assertions that represents requirements, constraints, or capabilities for a business service, for example IF [customerType = PLATINUM] THEN [responseTime < 20ms]

The CalculateShippingCharges component is a DA. It needs extensions to extract context information from the message body and insert it into its invocation context. DA extensions are implemented as Java components

To implement a ContextExtractor extension for the CalculateShippingCharge DA, complete the following steps:

1. Select the Java component type from the component group on the palette and drag it to the assembly diagram.



- 2. Rename the component ContextExtractor
- **3**. Select the **ContextExtractor** component and click the **Add Interface** icon to specify one or more interfaces. A window opens.



- 4. To add the interface to the component, perform these steps:
 - a. Select the Show WSDL and Java radio button.
 - b. In the Filter by interface or qualifier field, enter ContextExtractor.

- c. In the Matching interfaces text box, select ContextExtractor.
- d. Click OK.



The component is updated with the selected interface.

5. Click the reference wire for the **CalculateShippingCharges** component and drag it to the ContextExtractor interface on the ContextExtractor component. When the Add Wire window opens, click **OK**.



6. Double-click the **ContextExtractor** component to specify its implementation. Click **Yes** to implement the component.



- 7. Select **New Package** and type com.ibm.clipsandtacks.sample as the package name.
- 8. Click **OK** twice.

Generate Implementation	rAccountStatus	
Select the package where the Java implementation will be generated:	Account Status	1
	ingCharges 11	
fi com	h Charger	ContextExtractor
Project: ClipsAndTacksF1		
Package name: com.ibm.clipsandtacks.sampl		
	OK	Cancel
	Send Notification	
New Package		
OK Cancel		

- 9. Select all of the text on the ContextExtractorImpl.java window and delete it.
- 10. Open the ContextExtractorImpl.java file, and then copy and paste its contents on the ContextExtractorImpl.java window.
- 11. Save your work.

Creating the process invocation method

In this lesson, you will create a method to invoke the process. This lesson gives you a way to enter data into the order form to start the automated process.

Complete the following steps:

1. In the Business Integration view, expand ClipsAndTacksF1 → Integration Logic → Processes → processes/orderhandling and double-click OrderHandling. The process OrderHandling opens.



Note: If the Generated File Warning opens, click Yes. The business process editor opens.

2. Select OrderHandling, and then select the Properties tab and Authorization.

Build Activities 🔲 Prope	rties 🛛 🖹 Prot	olems 🛞 Server Logs	해 Servers			
Receive - OrderHa	ndling					
Authorization	Potential starters of	the process can be spe	ecified using a	human task.	0	Den Denne
Exit Condition	Human Task:	OrderHanding Order	Handling		2	perm.
Correlation						

3. Click the **OrderHandling_OrderHandling** link (click **Yes** if a warning window displays). The human task editor opens.

😳 ClipsAndTacksF1 - Assembly Diagram 🛛 🖾 OrderHanding 🖓 OrderHanding_OrderHanding 🖄			- 0
*Invocation Task			
Name OrderHanding_OrderHanding	Display Name	(Not Applicable>	
+Service Interface			
*People Assignment (Originator) 🖉 🖗 🕱			
Potential Starters Everybody			
*User Interface 🔶 🖗 🕱			
Rg User Interface			
Lotus Forms (for use in Business Space and a generated client)			
*Escalation 🖉 🖗			
30 Running			

4. In the OrderHandling_OrderHandling window, click on Lotus Forms (for use in Business Space and a generated client) in the User Interface section. The Properties view will now show the Client type: Lotus Forms (for use in Business Space and a generated client).
| OrderHandling | GreenHandling_OrderHandling 🛛 | | | - t |
|--------------------|---|-----------------------------------|---------------------------|-----|
| ▼Invocation Tas | k 🔲 | | | |
| Name | OrderHandling_OrderHandling | Display Name | <not applicable=""></not> | |
| Service Interfac | ce | | | |
| ▼People Assignm | nent (Originator) 🛛 🐥 🕱 | | | |
| ▶ Potential Star | ters Everybody | | | |
| ▼User Interface | ÷ X | | | |
| Guser Interface | 8 | | | |
| Lotus Forms (for u | use in Business Space and a generated client) | | | |
| | 45 | | | |
| Esculation | N- | | | |
| | | - X- | | |
| Build Activities | Properties 🛛 🔛 Problems 📋 Server Logs 👯 Serv | vers | | ~ L |
| 🤉 Client type: L | otus Forms (for use in Business Space and a g | jenerated client) | | |
| etails Select w | where to store your Lotus Forms: 💿 Module 🛛 Web Proje | ect | | |
| Choose | the user interface for this human task by selecting an existing |) Lotus Form or create a new one. | | |
| Input: * | /ClipsAndTacksF1/processes/orderhandling/OrderHandling | Input Criterion.xfdl New Bro | owse | |
| 🗖 At ru | un time, save the Lotus form when when a task is created. | | | |
| | | | | |

- 5. Click **browse**. The Select a Lotus form window opens.
- 6. Expand ClipsAndTacksF1 > order and select Order.xfdl. Click OK.

🚯 Select a Lotus form	
Choose a file:	
ClipsAndTacksF1	
?	OK Cancel

7. In the human task editor, save your work. The following screen capture shows the completed task.

) OrderHand	ling 🔐 OrderHandling_OrderHand	ling 🛛					
▼Invocati	ion Task						
Name	OrderHandling_OrderHan	iding		Displ	ay Name	<not applicable=""></not>	
Fervice I	Interface						
*People A	Assignment (Originator) 🛛 🕂	×					
Poter	ntial Starters Everybody						
▼User Int	erface 🔶	×					
User I	Interface						
Lotus For	ms (for use in Business Space and a gene	erated client)					
▼Escalatio	on 🖉 🖓	£					
Running							
Build Activi	ities 🔲 Properties 🙁 👔 Problem	s 🗄 Server	Logs 🖗 Servers 🔂 Asset Repositorie	s 🔄 Console			~
Client t	ype: Lotus Forms (for use in Bi	usiness Sp	ace and a generated client)				
etails	Select where to store your Lotus Forms:	Module	O Web Project				
	Choose the user interface for this human	task by selei	ting an existing Lotus Form or create a ne	w one.			
:	Input: * processes/order/Order.xfdl	New	Browse				

- 8. Close the human task editor.
- 9. Save your work. You no longer have errors.

Identifying WebSphere Monitor Server on WebSphere Process Server ports

In this lesson, you will identify the ports being used by WebSphere Monitor Server on WebSphere Process Server.

Depending on the order of install and what else was previously installed on a user's machine, the WebSphere Monitor Server may not be using the default ports. So it is necessary to identify the ports to use before running the sample.

- 1. Open the file AboutThisProfile.txt located at: <WebSphere Integration Developer 62 install directory>\pf\WBMonitor Srv_wps\logs.
- Check the entries for HTTP transport port and HTTPS transport port. Anywhere in this tutorial where you see <Server_Port>, substitute the value found for the HTTP transport port. Anywhere in this tutorial where you see <Secure_Server_Port>, substitute the value found for the HTTPS transport port.

Creating a WebSphere Business Services Fabric project

In this lesson, you will create a WebSphere Business Services Fabric project to be the container of all the WebSphere Service Fabric artifacts created (for example: endpoints, assertions, etc.).

To create a project, two main steps need to occur:

- 1. WebSphere Business Services Fabric is set up with the vocabulary and project interchange file.
- 2. WebSphere Integration Developer is set up with a Business Service project that has a name that is the same as the name of the WebSphere Business Services Fabric project name.

The link between the two projects is established by using the same name in both projects.

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WebSphere Business Services Fabric runs on the server and has a browser based interface that will be used in this sample to import the vocabulary and the project interchange file. The vocabulary and the project interchange file contain the meta-data needed for the dynamic assembler (DA) implementation. With version 6.2, similar artifacts would be developed using the Business Space Authoring space. The Business Space Authoring space and the development of the artifacts are not covered in this sample.

Complete the following steps:

- 1. Click the **Servers** tab.
- 2. If the server is not already running, right-click the **WebSphere Business Monitor Server V6.2** server and select **Start**.
- 3. When the server has started, which takes several minutes, open a Web browser to http://localhost:<Server_Port>/fabric/login.jsp and log in to WebSphere Business Services Fabric as the administrator. For <Server_Port> use the value you identified in "Identifying WebSphere Monitor Server on WebSphere Process Server ports" on page 70.

Note: For purposes of this tutorial, log in using admin for the user ID and for the password.

1	\$				
	Please enter your Us	Login er Id and Password.	R		
- Fug	ds marked with an astenick (* User Id * Password	*) are required fields.		3	
		Login	Contra la		

4. In the My Services section, expand the Governance Manager menu and select Import/Export.

Services	Import/Export					
sicome						
Business Services Repository	Import Export by Project					
Governance Manager	Fields marked with an asterisk (*) are req	uired fields.				
Configure Environments	Info					
Ionfigure Namespaces	Warning: Importing a Pabric Conte	nt Archive replaces all of the existing Namespaces in	nduded in the Pabric Content Archive.			
Ionfigure Projects						
Ionfigure Repository	Fabric Content Archive Selection					
mport/Export	* File	Browse				
lanage Teams			Incost 68			
fanage User Accounts			import ru			
Performance Manager						
Subscriber Manager						
ip.						
	-					

- 5. Click **Browse** and navigate to the directory where the ClipsAndTacks-Core_ontology.fca file is located. Click **Import File**. This file contains the Clips and Tacks custom ontology or vocabulary (For example, OrderSizeAssertion and its values SMALL and LARGE are defined in this file).
- 6. If the previous step was successful, click **Browse** again and navigate to the directory where the ClipsTacks_initial_scenario-owl.zip file is located. This project interchange file contains the definition of all of the WebSphere Business Services Fabric components that are needed to recreate the Clips and Tacks scenario. Click **Import File** and watch for error messages.
- 7. Under Governance Manager, click Configure Projects to see the following entries:

Configure Proje	ects	
Project Selection		
View 10 👿 rows at a	time	
7 rows		Page
Project Name	Project Type	Description
<u>Clips&Tacks</u>	Legacy Business Service	
Clips and Tacks Custom Ontology	Ontology	Defines Clips and Tacks specific assertions
Fabric Governance	Legacy Business Service	Used to store project, namespace, and environment objects
Fabric Business Service Model	Ontology	Contains the schema namespaces that define the internal model used by IBM Business Services Repository
Organizations, Users, and Roles	Legacy Business Service	Used by IBM Business Services Subscriber Manager to store organizations, users, and role relationships
<u>User Policies</u>	Legacy Business Service	Policies created using the Customized Policy application programming interface are stored in this project
Fabric Business Glossary	Vocabulary	Used to store all Business Vocabularies.

8. Logout of WebSphere Business Services Fabric and return to WebSphere Integration Developer. Open the Business Services perspective and click **OK**.



9. From the Business tab, right-click New and select Fabric Project.

⊡•=== \$8 \$3 @ % % • <i>§</i>	•] h = H = H	→ -		83) Business Service
2 Busines (3) [_2] Asserbo] [2] Subson] [2] Busines			- C MR Repost	tory Changes 💈	8 Q -
New Petabric	Project				
Barren Arren Ba	Vom Suite doon ss Service ss Variable sine Service are				
San Jan Ja Li Donne Rolley Relia Service	ton diSpecification dispect				
	Validations	8			
	Project N	me Message		Location	

10. In Project name, type Clips&Tacks and click Next and then click Configure.

👍 New Fabric Project	
Business Services Composition Studio Project Update Project	
Replicated: No	Configure
Click 'Configure' to provide connection details for the remote repository.	
(?) <	Cancel

11. Enter the Business Services Repository information (the port might be different in your system. Use the same port that you used to log in to the WebSphere Business Service Fabric page). Use admin for the user ID and for the password. Click **OK**. The replication process starts momentarily. The entire metadata repository is replicated to the Eclipse workspace and is referred to by Composition Studio as a local working copy.

🕂 Busines	s Services Repository Connec	tion	X
Protocol:	http		•
Hostname:	localhost	Port:	9080
Username:	admin	Password:	****
			OK Cancel

Wait until the replication finishes (do not click **Configure** again).

🕂 New Fabric Project	
Business Services Composition Studio Project Update Project	
Replicated: No	Configure
Click 'Configure' to provide connection details for the remote repository.	
Replicating: 24 of 88	
 	Cancel

12. When the replication is complete, click Next.



13. In the Fabric Project field, select Clips&Tacks and click Finish.

👍 New Fabric	Project			<
Business S	ervices Compo	sition Studio Proje	ect	
Fabric Project:	Clips&Tacks			
0	< <u>B</u> ack	Next > Eini	sh Cancel	

The **Clips and Tacks** Fabric project is created.



Creating the Clips and Tacks Business Space

During this phase, you will create a Business Space to enable an integrated and customized user experience, allowing access of business process information from a single user interface.

During the creation of the Business Space, the project will be deployed and the business spaces needed to interact with the deployed project will be created.

To create the Clips and Tacks business spaces, complete the following tasks:

- 1. "Deploying the Clips and Tacks Order Handling business process and endpoints"
- 2. "Setting up the Clips and Tacks business space" on page 78
- 3. "Setting up the Fabric business space" on page 83

Deploying the Clips and Tacks Order Handling business process and endpoints

In this lesson, you will deploy the sample to the WebSphere[®] Process Server.

Complete the following steps:

- 1. Switch back to the Business Integration perspective.
 - a. Click the Servers tab.
 - b. Right-click WebSphere Business Monitor Server V6.2 on WebSphere Process Server.
 - c. Click Start (if it is not started already).



It takes a few minutes for the server to start. When the server starts (the server status changes from **Stopped** to **Started**).

2. Right-click the started server and select Add and Remove Projects.

New	
Open	F3
Show In	Alt+Shift+W ►
Сору	Ctrl+C
👕 Paste	Ctrl+V
💢 Delete	Delete
Rename	F2
🗱 Restart in Debug	Ctrl+Alt+D
🔘 Restart	Ctrl+Alt+R
🔊 Restart in Profile	
🔳 Stop	Ctrl+Alt+S
E Publish	Ctrl+Alt+P
Clean	
C Add and Remove Projects	
Monitoring	•

3. Add all the projects that are available by selecting **Add All** and click **Finish**. It takes a few minutes for the applications to be published to the server.

Add and Remove Projects Add and Remove Proje Modify the projects that are cor	ects nfigured on the server		
Move projects to the right to con	nfigure them on the server	Coofigured projector	
Image: projects. Image: projects.	EA ntE Add > Add > Add All >> < <remove all<="" th=""><th></th><th></th></remove>		
✓ If server is started, publish of ⑦	hanges immediately <back next=""></back>	Finish	Cancel

Setting up the Clips and Tacks business space

In this lesson, you will set up a Clips and Tacks business space.

In order to effectively use the Clips and Tacks project you must first set up a Clips and Tacks business space.

- 1. Set the WebSphere Integration Developer default browser and log into Business Space.
 - a. In WebSphere Integration Developer, click Window > Preferences > General > Web Browser. The default browser might be Internal Web Browser, but it does not have all of the functions that you need. Select Use external Web browser and Default system Web browser or another listed browser other than the internal browser. Click Apply and then click OK.

Note: This allows Clips and Tacks to use the default browser for your system, rather than the default browser built into Clips and Tacks.

+ Preferences (Filtered)		_ 🗆 🗵
type filter text	Web Browser	¢ • ⇒ • •
General G	Add, remove, or edit installed Web browsers. The selected Web browser will be used by default when Web pages are opened, although so may always use the external Browser Use internal Web browser External Web browser Default system Web browser Prefox with Firebug Prefox Internet Explorer	me applications New Edt Remove Search
0	OK	Cancel

- b. In WebSphere Integration Developer, in the Servers view, right-click WebSphere Business Monitor Server V6.2 and select Launch → Business Space. If a Security Alert warning window opens, click Yes.
- c. When prompted, enter admin for the user ID and enter admin for the password (or enter the current administrator ID and password if you changed them from the default values). A Business Space Manager window opens.

A second s		
ling Started with Business Space		w .
Nelcome to Business Space		Concents
Ipen a space open an existing space to view and interact with information from multiple sources	Tour Pusiness Space See the features of Business Space powered by WebSphere	Business Space Business Space Manager The open business space Show asse Vridgets
(A) g and A re a particular contained	and the second	Scenarios
Trade a space Trade a space Trade you want to see and share it with other people Trade you want to see and share it with other people Trade you want to see and share it with other people Trade you want to see and share it with other people	<image/> <section-header><section-header><text><text></text></text></section-header></section-header>	Business monitoring Initiating Process Improvements Managing Business Performance Managing my banks Managing my banks Managing Tasker and Workflows Renewing Solution Management

 Click the Manage Business Spaces link in the top-right corner of the page. The Business Space Manager page contains several default business spaces and their respective sample pages, such as the Welcome space and the Getting Started page.

Your Business Space	
Business Space Manager	and the second se
🖆 🗅 🛄 Croup by Business Space 💌 Search 🔍	
Solution Management Owned by admin admin Pages 3 For managing and administering your business applications and solutions on Websphere Process Evere.	Business Space Name
Welcome Owned by System Administrator Pages: 1 For learning about Business Space	Business Space Description

3. Click the **Create new Business Space** icon icon icon Name the business space ClipsAndTacks, and then click **OK**. You can create a Business Space from a template, such as one for monitoring or managing human tasks, however in this sample we show you how to create Business Spaces from scratch using the wizard. This is the resulting ClipsAndTacks business space. You can change the owner and theme by clicking the corresponding **Change** buttons.

Your Business Space	wexame admin Help 1000.1
Business Space Manager	
🕺 👔 🖓 Groupby Duriness Space 👱 Storoth 🔍	
- ClesindTacks Construction (Page 0	Business Space Name
Subdition Management I: Connet by armin admin 1 Pages 3 For managing and administering your business applications and analysis on Websphere Process Server.	Business Space Description
	1

New Page	×
Type a name for the new p	age
C & T Tasks	
Empty Layout From	Ţ
	OK Cancel

5. Click the C & T Tasks link to open it. Click Add Widgets, which is located on the center of the page. The widget palette opens on the right and the cursor is moved to a search field. Type Task Information to filter the widget palette. Click the Task Information widget and drag the item to the top right hand corner of the page.

ß	Task Information $\mathbb{Z} \oplus \mathbb{A}$
Task	s and Workflow
Ĝ	Task Information

- 6. Next you will add the **Create Tasks**, **Available Tasks** and **Human Workflow Diagram** widgets to your page. Click the **Add Widgets** in the upper right hand corner to open the palette and add the first two widgets to the left of your page so that they display underneath each other with the **Available Tasks** widget on the bottom of the top left section of the page. Place the **Human Workflow Diagram** widget in the bottom section of the page. Placing the **Human Workflow Diagram** widget is easier if the **Available Tasks** and **Task Information** widgets are minimized.
 - a. Click **Available Tasks** to minimize it. The button is located in the top-right corner of the widget. Repeat with the **Task Information** widget.

Available Tasks 🔹 📼 🗖

b. Resize the bottom edge of the **Task Information** widget to be side by side with the bottom edge of the Available Task widget.

	💌 🔚 Add Vhidgets 🔺
G	
Busi	ness Monitoring
	KPIs
Busi	ness Monitoring Tools
¢	Alert Manager
Task	s and Workflow
₿⇒	Send Widget
匈	Tasks I Created
Ø	Create Tasks
View	ers
	Presentation
	Spreadsheet
P	Document

- 7. Resize the widgets using the following suggestions:
 - a. Restore the **Task Information** widgets by clicking the **Restore** icon. Leave **Available Tasks** minimized.
 - b. Resize the bottom edge of the **Task Information** widget to be side by side with the bottom edge of the **Available Task** widget.
 - **c.** Resize the **Create Tasks** widget to half of its original width. Hover the mouse pointer over the edge of the widget until the mouse pointer changes to a double arrow. Click and drag it to the left to resize the widget.
 - d. Resize the **Create Tasks** widget so the bottom edge is as close as possible to the **OrderHandling** entry in the **Create Tasks** widget.
 - e. Restore the Available Tasks widgets by clicking the Restore icon.

The finished C & T Tasks page should look like this image.

TYour Business Space			100		
ClassifierTacks		1.150	and		
C&TTasks (#16) [207777677					* Di Asi Miseria Tu
Creato Tasks	×□	Task Information			* - 0 *
SODUA.		Relect the bick and then select an action			
Approval 	0 -				
inquity 	5				
Hoview 	<i>a</i> .				
Te-do	8				
Order?tanding	- 1				
Available Tasks	+ - 0				
Creek.	Adions .				
Human Warkflow Diagtam					····?·································
IBM.					promod by an address

Setting up the Fabric business space

In this lesson, you will set up a Fabric business space.

A Fabric business space contains all the pages used to interact with the Fabric Runtime. There are pages to operate on tasks, and to deal with governance.

Complete the following steps:

- If you are still logged in to the Business Space, click Manage Business Spaces to return to the Business Space Manager. If not, log into Business Space as described in the Setting up the Clips and Tacks Business Space topic.
- 2. Click the **Create new Business Space** icon 🛅.
- 3. Type ClipsAndTacks Fabric as the business space name.
- 4. Select **From a template** and **Fabric Administration**, and then click **OK**. The ClipsAndTacks Fabric business space opens automatically.



5. Select the **Manage Business Spaces** link in the right-hand corner of the page to go back to the main page.



Leveraging Business Services

WebSphere Business Services Fabric delivers dynamic business processes based on Business Service Policy. During this phase, WebSphere Business Services Fabric tool pack will be used to organize and use business services to quickly adapt the process to changing business needs.

WebSphere Business Services Fabric uses customer context and message content, among other pieces of information, to generate a merged business policy contract to provision the correct service. The service providers available to Clips and Tacks are implemented as endpoints, which have capabilities, or assertions. The assertions are stored in the WebSphere Business Services Fabric meta-model, which is inside the business services repository.

At run-time, the Dynamic Assembler uses these endpoint assertions, the service consumer's information, and declarative business policies to select the best service provider endpoint that meets the requirements.

There are five dimensions along which assertions can be applied:

- Performance
- Reliability
- Interoperability
- Security
- Manageability

In this tutorial, only the interoperability assertions are applied.

Understanding endpoints and business services policies

Most of the Clips and Tacks WebSphere Business Services Fabric artifacts are already created and were retrieved from the repository in "Creating a WebSphere Business Services Fabric project" on page 70. These artifacts needed to implement the initial scenario in which Clips and Tacks uses Better Shipping for large domestic orders, International Express for all international orders, and internal shipping for domestic and small orders.

To implement **Change 1** (in which Clips and Tacks decides to outsource all domestic shipping to Better Shipping, even for small orders at the same flat fee of \$8 per order) and **Change 2** (in which Clips and Tacks decides to use LocalShippers for orders in and around North Carolina, South Carolina, and Virginia, Better Shipping for all other domestic orders, and International Express for all international orders), you need to create additional artifacts.

The initial scenario has the following endpoints and assertions.

Endpoint	Assertion
Internal Shipping	domestic, small orders
International Express	international orders only
Better Shipping	domestic, large orders

To make the process dynamic, complete the following tasks:

- 1. "Updating the web services endpoint URLs"
- 2. "Simulating the initial shipping policies" on page 86
- 3. "Testing the initial shipping policies" on page 89
- 4. "Updating the shipping policies for small orders" on page 93
- 5. "Using Governance to manage changes" on page 96
- 6. "Updating the shipping policies with Local Shipping Option" on page 100

Updating the web services endpoint URLs

In this lesson, you will update the web services endpoint URL.

So far, you have:

- Identified the ports used in your installation of WebSphere Monitor Server on WebSphere Process Sever in the section "Identifying WebSphere Monitor Server on WebSphere Process Server ports" on page 70.
- Imported the Fabric artifacts (including the web services endpoints definition and metadata) into the business repository in the section "Creating a WebSphere Business Services Fabric project" on page 70.
- Deployed three web services on to the WebSphere Monitor Server on WebSphere Process Sever in the section "Deploying the Clips and Tacks Order Handling business process and endpoints" on page 76.

Now it is time to verify that the web services endpoint as defined in the business repository matches the actual port used by your installation of WebSphere Monitor Server on WebSphere Process Server.

The three web services metadata that you need to verify and maybe update are BetterShippingEndpoint, InternalShippingEndpoint, and InternationalShippingEndpoint. The three endpoints may need to have their endpoint URL adjusted to use the appropriate WebSphere port.

- 1. Switch to the Business Services perspective in WebSphere Integration Developer. In the **Business Services Explorer**, expand the **Endpoint** folder in the Clips&Tacks project.
- 2. Double-click on BetterShippingEndpoint to bring up the editor.
- 3. Click on the HTTP/SOAP 1.1 link in the Protocol section.

General Infor	nation	Resource Info	rmation	
ID:	uf70803d3-94b3-4b4f-bbf3-03a082e944ff	Author:	admin.	Browse
Namespace:	ClipsAndTacks namespace	Cost:		
Name:	BetterShippingEndpoint	Cost Modifier:		•
Description:				
Date Created:	Apr 21, 2009 3:44:16 PM			
Date Modified:	Apr 27, 2009 12:24:37 PM			
Status:	Active			
rotocol		Correlations		
Protocol	Datale	Correlations	Applications	
Protocol HTTP/SOAP 1.1	Details	Correlations Find associated Find associated	Applications Business Services	
rotocol HTTP/SOAP 1.1	Details	Correlations Find associated Find associated Find associated	Applications Business Services Organizations	
Protocol HTTP/SOAP 1.1	. Details	Correlations Find associated Find associated Find associated Associated International Contents	Applications Business Services Organizations terfaces	
Assertions: 3	- Details	Correlations Find associated Find associated Find associated Associated Interfaces: 1	Applications Business Services Organizations terfaces	Details
Assertions: 3	Detais Detais	Correlations Find associated Find associated Find associated Associated Inl Interfaces: 1	Applications Business Services Organizations erfoces	Details

4. Verify that the URL field is using the correct port. The initial value is **9443**, but it must match <Secure_Server_Port> on your system.

Endnoint		
Protocol		
Address:	нттр	
Message Format:	SOAP 1.1	
нттр		
URL: https://loc	alhost:9443/BetterShippingEndpoint/services/BetterShippingPort	

- 5. If the port listed here is not the correct port used by your system, update the URL field so that the port is correct. Save the change and close the editor.
- 6. Repeat these steps for the two remaining web service endpoints, **InternalShippingEndpoint** and **InternationalShippingEndpoint**.
- 7. Perform the remaining steps only if you made changes to the port numbers in the URLs. You need to publish your local changes to the business services repository.
 - a. If you have not already setup a fabric business space, do so now by following the instructions in "Setting up the Fabric business space" on page 83
 - b. Follow the steps as outlined in the section "Using Governance to manage changes" on page 96. On the Governance page of the Clips And Tacks Fabric space, update your comments to be appropriate for this change.

Simulating the initial shipping policies

In this lesson, you will simulate using the Clips and Tacks policy.

You will use the Business Services perspective of WebSphere Business Services Fabric in WebSphere Integration Developer to simulate the initial shipping policies and their impact on the Order Handling process. Simulation allows you to run and validate polices and assertions that are part of the initial scenario. The initial scenario is pre-built for this sample and the Clips and Tacks policy is ready for simulation.

The following table represents the Clips and Tacks service-provider endpoint capabilities (assertions) and the use cases for service consumers for the initial scenario. The top row depicts the available service providers, and the left column represents the service consumer use cases. The X represents the service-provider endpoint that is to be selected based on the context, content, and contract of the service consumer's request.

	Internal Shipping	Better Shipping	International Express
Order Size = SMALL and Order Type = DOMESTIC	X		
Order Size = LARGE and Order Type = DOMESTIC		Х	
Order Type = INTERNATIONAL			Х

Table 2. Clips and Tacks service-provider endpoint capabilities and use cases

The business services policies for the initial Clips and Tacks scenario were created based on this table.

To start the policy usage simulation, complete the following steps:

- 1. Logout of Business Space if you have not done so and switch to WebSphere Integration Developer.
- 2. Select the Business Service perspective and the **Business Service Explorer** tab. Expand the **Simulation** node and double-click **Test Verify Shipper Selection**.



3. Verify the Simulation values against the screen below and click **Run**.

eneral Infor	mation	Simulation	Context	
ID:	u0a89ea29-149b-4607-9a23-cc431912f96a	Context Sp	ecification:	SCA Default Context
Namespace:	ClipsAndTacks namespace	Composite :	Service:	ClipsAndTacksF1
Name:	Test Verify Shipper Selection	Dynamic As	Dynamic Assembly Component: Calculab	
Description:		Date:	Dec 5, 2008	
		Time:	4:00 PM	
		Time Zone:	(GMT-05:00) Easte	ern Time
Date Created:	Jan 21, 2009 3:31:08 PM			
Date Modified	Jan 21, 2009 3:31:08 PM			
Interfac	e: <u>CalculateShippingCharges</u>			Browse
Interfac	e: <u>CakulateShippingCharges</u> exit			Browse Cle
Interfac	e: <u>CakulateShippingCharges</u> ext yAssertion y: USA			Browse) Ck
Interfac	e: <u>CalculateShippingCharges</u> exit yAssertion y: USA icdeAssertion			Browse) Cle
Interfac	e: <u>CalculateShippingCharges</u> ext yAssertion y: USA ColoAssertion Code: 30324			Edt) Clea
Interfac	ex CalculateShippingCharges ext yAssertion y: USA iodeAssertion code: 30324 iceAssertion			Edt) Clea
Interface ptional Cont Countr countr Postak Postak TotalPr totalPr	ex CalculateShippingChanges ext yAssertion y2 USA icodeAssertion icodes 30324 icoAssertion ices 10.0			Browse) Cle Edt) Clea Edt) Clea Edt) Clea

The Simulation Operations panel shows only green check marks and the **InternalShippingEndpoint** is selected.

Simulation Operations	
Build selection policy	
\checkmark	
	Detais
Find candidates	
\checkmark	
	Detais
-Select endpoint	
\checkmark	
	Details.
Validations 🗖 Simulation Operation 🛛	
Selected Endpoint Propagated Policy Rejected Candidates Errors	
Selected Endpoint: InternalShippingEndpoint	

When the simulation confirms that the correct policy is being selected, it is time to try a runtime test.

Testing the initial shipping policies

In this lesson, you will initiate an instance of the process in order to test the policies in run time.

To perform a runtime test using Business Space complete the following steps:

- 1. In WebSphere Integration Developer, Select the **Business Integration** perspective and in the Servers view, right-click the **WebSphere Business Monitor Server V6.2** server and select **Launch** → **Business Space**.
- 2. When prompted, enter admin for the user ID and for the password (or the administrator ID and password if you have changed it). A **Business Space Manager** window opens.



3. Click the C & T Tasks link to open the page.

Your Business Space		Welcome admin Hep. 1 Logout
ClipsAndTacks		Minage But has a Spaces
C&TTasks 💌 🗙 📑 Bootshop		▼ motilAddWidgets =
Create Tasks =	Task Information	* LO 2
Create	Select the task and then select an action.	
Approval		
inquiry 		
Review C		
To-do gives you a to-do:		
OrderHandling		
Available Tasks = =		
Accept Actions		
Show All	2	
Sort By Start date		
No tasks were found.		
Human Workflow Diagram		
TRM		

4. Create a new instance of the Clips and Tacks Order Handling process by selecting the **OrderHandling** task in the **Create Tasks** widget. Click the icon on the right side.

Create Tasks	*I=D	Task Information
Create		Select the task and then select an action.
Approval requests your approval	8	
Inquiry sends the following inquiry:		
Review requests your review	ĉ	
To-do gives you a to-do:		
OrderHandling		Create an instance from this task template

5. The **Clips and Tacks Order Form** appears in the **Task Information** widget. Complete the top part of the form using the following values:

Note: Scroll down the page to show the form and the entry fields to complete.

Field	Value

Field	Value
Customer Number	1
Company Name	IBM
Contact First Name	John
Contact Last Name	Doe
Rating	100
Available Credit	\$500.00
Order Number	101
Street Address	100 Main St.

Table 3. Clips and Tacks Customer Information window (continued)

Field	Value
Country	USA
Postal Code	10004
E-mail	jd@ibm.com

6. Complete the rest of the form. Make the **Total Price** greater than \$750.00 to force the process to flow to the Review Order task. As a result, the Order Size assertion is set to LARGE, which causes the Better Shipping endpoint to be selected (make sure the **Country** field is set to *USA* and the **Postal Code** field is set to *10004*.

Note: Do not type underneath For Office Use Only.

7. Click Submit

Form Details Not Customer Information Contact Last Name John Country USA Contact Last Name Doe Rating 100 Available Credit \$500.00 Order Number 101 Order Information Product Num Description Price Quantity Item Price pen pen-1 expensive pei \$10.00 \$1,000.00	* OrderHandling \times			
Customer Information Customer Number 1 Customer Number 1 Company Name IBM Contact First Name John Contact First Name John Contact First Name John Contact Last Name Doe Rating 100 Postal Code Available Credit \$500.00 Order Number 101 Order Information Product Name Product Num Description Price Quantity Item Price \$1,000.00				Form Details Note:
Customer Information Customer Information Customer Information Customer Number 1 Company Name IBM Company Name IBM Contact First Name John Country USA Contact Last Name Doe Rating 100 Postal Code 10004 Rating 100 Email jd@ibm.com Available Credit \$500.00 Order Number 101 Order Information Product Name Product Num Description Price Quantity Item Price pen pen-1 expensive pei \$10.00				
Clips&Form Customer Information Customer Number 1 Company Name IBM Contact First Name John Contact First Name John Contact Last Name Doe Rating 100 Available Credit \$500.00 Order Number 101 Drder Information Price Product Name Price Quantity Item Price pen pen-1	0			a Cardana
Customer Information Customer Number Customer Number 1 Street Address Company Name IBM Contact First Name John Contact First Name John Contact Last Name Doe Rating 100 Available Credit \$500.00 Order Number 101 Drder Information Product Name Product Num Description Price Quantity Item Price pen pen-1	T /Cli	ps&Tacks		P B BAS
Customer Information Customer Number 1 Company Name IBM Contact First Name John Contact First Name John Contact Last Name Doe Rating 100 Order Number 101 Drder Information Product Name Product Num Description Price Quantity Item Price pen pen-1	1 des	ORDER FORM	C	an deal
Customer Number 1 Street Address 100 Main St Company Name IBM City New York Contact First Name John Country USA Contact Last Name Doe Postal Code 10004 Rating 100 Available Credit \$500.00 Order Number 101 Drder Information Product Name Product Num Description Price Quantity Item Price pen pen-1 expensive pei \$10.00 100 \$1.000.00	Customer Inforr	nation		
Company Name IBM City New York Contact First Name John Country USA Contact Last Name Doe Postal Code 10004 Rating 100 Email jd@ibm.com Available Credit \$500.00 Order Number 101 Order Number 101 Product Name Product Name Product Name Product Num Description Price Quantity Item Price pen pen-1 expensive pei \$10.00 \$1.000.00 \$1.000.00	Customer Number	1	Street Address	100 Main St
Contact First Name John Country USA Contact Last Name Doe Postal Code 10004 Rating 100 Email jd@ibm.com Available Credit \$500.00 Order Number 101 Drder Information Product Name Product Num Description Price Quantity Item Price pen pen-1 expensive pei \$10.00 100 \$1.000.00	Company Name	ІВМ	City	New York
Contact Last Name Doe Postal Code 10004 Rating 100 Email jd@ibm.com Available Credit \$500.00 Order Number 101 Order Number 101 Drder Information Product Name Product Num Description Price Quantity Item Price pen pen-1 expensive pei \$10.00 \$1.000.00	Contact First Name	John	Country	USA
Rating 100 Available Credit \$500.00 Order Number 101 Drder Information Product Name Product Num Description Price Quantity Item Price pen pen-1	Contact Last Name	Doe	Postal Code	10004
Available Credit \$500.00 Order Number 101 Drder Information Product Name Product Num Description Price Quantity Item Price pen pen-1 expensive per \$10.00 100 \$1.000.00	Rating	100	Fmail	id@ibm.com
Order Number 101 Drder Information Product Name Product Num Description Price Quantity Item Price pen pen-1 expensive per \$10.00 100 \$1.000.00	Available Credit	\$500.00		Jaennicom
Order Information Product Name Product Num Description Price Quantity Item Price pen pen-1 expensive per \$10.00 \$1.000.00	Order Number	101	1	
Product Name Product Num Description Price Quantity Item Price	Drder Informati	00	1	
Product Name Product Num Description Price Quantity Item Price pen pen-1 expensive per \$10.00 100 \$1.000.00				
pen pen-1 expensive per \$10.00 100 \$1.000.00	Product Name	Product Num Description	Price Quan	tity Item Price
	pen	pen-1 expensive per	\$10.00 100	\$1,000.00
Shinning Total Price \$1,000,00		Shipping	Total	Price \$1,000,00

8. The **Order Handling** process is waiting for the **Review Order** task to be Approved, as shown in the **Available Tasks** widget.

Note: If the Review Order task is not displayed, select the down arrow icon and click Refresh.



9. Select **Review Order** and click the icon on the right side of the **Available Tasks** window. The **Task Information** widget now displays the **Review Order** form.

1 UCI	ps&lacks	đ	and the
Customer Inforr	nation		
Customer Number	1	Street Address	100 Main St
Company Name	ІВМ	City	New York
Contact First Name	John	Country	USA
Contact Last Name	Doe	Postal Code	10004
Rating	570	Email	id®ibm.com
Available Credit	\$547.00]	/
Order Number	101]	
Order Informati	on		
Product Name	Product Num Description pen-1 expensive-pe	Price Quan \$10.00 100	tity Item Price \$1,000.00 + -
	Shipping	Total	Price \$1,000.00
For Office Use C	Inly		

- 10. For Order Status, select APPROVED.
- 11. Scroll down to see the **Human Workflow Diagram** widget displaying the state of all the human tasks in the process instance.



12. Scroll back up to the **Task Information** widget and click **Submit**. The process progresses to the **Ship Order to Customer** tasks. The Available Tasks widget now lists the Ship Order to Customer task.

Note: If the Ship Order to Customer task is not in the Available Tasks widget, select Refresh.

- **13**. Claim the Ship Order to Customer task by selecting **Ship Order to Customer** and clicking the icon on the right side of the **Available Tasks** window.
- 14. The process now completes for this instance and you can review the completion information by:a. The Task Information widget now displays the updated Ship Order to Customer form.

	ps&Tacks	e	S Mall	
Customer Inform	nation			
Customer Number	1	Street Address	100 Main St	
Company Name	ІВМ	City	New York	
Contact First Name	John	Country	USA	
Contact Last Name	Doe	Postal Code	10004	
Rating	570	Email	jd@ibm.com	
Available Credit	\$547.00		-	
Order Number	101]		
Order Informati	on			
Product Name	Product Num Description pen-1 expensive-pe	Price Quan \$10.00 100	tity Item Price \$1,000.00 + -	
	Shipping	\$8.00 Total	Price \$1,000.00	
For Office Use Only				
Order Status	APPROVED V Pa	cking Slip Number	125	

b. The **Human Workflow Diagram** widget displays the state of all the **human tasks** in the process. Hover the mouse over each task to see the state and the owner.



c. The Shipping Charge field shows the amount that the endpoint charges by using the Calculate Shipping Charges Dynamic Assembler. In this case, the Better Shipping endpoint was selected, given the values of the input data, and the fact that this particular carrier charges an \$8 flat fee.

You can also see the selected endpoint in WebSphere Integration Developer in the console view.

Properties	🗄 Problems	💮 Server Lo	gs (its Servers	Console 83	- * * * [백행숙왕] 목표·응·승규
WebSphere Bu	siness Services I	Fabric v6.2 Se	rver at localhost	(WebSphere Applicatio	server v6.1)
[11/22/08	3 18:44:23	:015 EST]	00001012	EndpointStati	I com.webify.wsf.engine.dynamic.EndpointStatistics internalSetState Endpoint fo://fcm
[11/22/08	8 18:44:23	:031 EST]	00001012	EndpointStati	I com.webify.wsf.engine.dynamic.EndpointStatistics internalSetState Endpoint fo://fc
[11/22/00	18:44:23	:078 EST]	00001012	WSChannelFram	A CHFW0019I; The Transport Channel Service has started chain HttpsOutboundChain; h
[11/22/00	10:44:23	:093 EST]	00000086	SystemOut	0 *** BetterShipping Endpoint ***
[11/22/08	18:44:23	:093 EST]	8800000	SystemOut	O CalculateShippingChargesBindingInp1 - inputCriterion() invoked
[11/22/08	3 18:44:23	203 EST	00001017	EngineMDB	I com. ibm. ws.fabric.support.glln.logging.DelegatingLog internalInfo Received message
JESMess	age class	: jms_obj	ect		
4					

Updating the shipping policies for small orders

In this lesson, you will implement a change in the shipping policies for small orders.

Clips and Tacks made a business decision to update the shipping policies for all domestic shipping including small orders. You will implement **Change 1** to the Clips and Tacks policy. The following table represents the Clips and Tacks service-provider endpoint capabilities (assertions) and use cases for service consumers for **Change 1**.

Table 4. Clips and Tacks service-provider endpoint capabilities and use cases for Change 1

Size and Type of Order	Internal Shipping	Better Shipping	International Express
Order Size = SMALL and Order Type = DOMESTIC		Х	
Order Size = Large and Order Type = DOMESTIC		Х	
Order Type = INTERNATIONAL			Х

1. Switch back to the Business Services perspective in WebSphere Integration Developer. Remove the InternalShipping endpoint by right-clicking InternalShippingEndpoint and selecting Delete.



- 2. Modify the BetterShipping endpoint.
 - a. Double-click **BetterShippingEndpoint** to open its editor. Select the **Assertions** tab and click **Add**, which is in the upper-right corner of the **Endpoint Capabilities** table.

Overview Protocol Assertions Interfaces Environments

b. Expand the **Interoperability** folder, expand the **Content Based Assertion** folder, and then select **OrderSizeAssertion** and click **OK**.



c. In the window that opens, select SMALL for the order size, and then click OK.

🗄 OrderSizeAssertion	×
Assertion Options	
Assertion Property Values	
orderSize:	
5MALL	
	_
OK Cancel	

You have created an instance of this assertion type and associated it with this endpoint. There is now a row for this assertion in the table.

- d. In the **Capabilities** table, clear the check box in the **Required** column for OrderSizeAssertion with a value that equals LARGE. Save your work.
- e. Verify that you have three rows in the Endpoint Capabilities assertions table and close the editor.

	BetterShippingEndpoint 🛛						
1	Endpoint						
	Endpoint Capabilities						
	3 Assertions						
	3 Assertions	Required	Value				
	3 Assertions Type OrderSizeAssertion	Required	Value SMALL				
	3 Assertions Type OrderSizeAssertion OrderSizeAssertion	Required	Value SMALL LARGE				
	3 Assertions Type OrderSizeAssertion OrderSizeAssertion OrderTypeAssertion	Required	Value SMALL LARGE DOMESTIC				

- **3**. Simulate **Change 1** by following the steps as outlined in the section "Simulating the initial shipping policies" on page 86, changing the values of the **Test Verify Shipper** selection page to the following values:
 - CountryAssertion = USA
 - PostalCodeAssertion = 30324
 - TotalPriceAssertion = 10

Then click **Run**. The Simulation Operations panel shows only green check marks and the BetterShippingEndpoint is selected. After observing the simulation results close the simulation tab without saving it.

Using Governance to manage changes

In this lesson, you will publish your local changes to the WebSphere Business Services Fabric business services repository.

The business services repository is used by the Dynamic Assembler when an actual process runs in production or when you run your runtime test. To publish your local changes, Governance is used to submit your local change list to update the business services repository. A change list is a collection of related metadata changes that an individual developer makes in the localized project.

- 1. Locate the **Repository Changes** view on the left of your WebSphere Integration Developer workspace. Expand the **Active Changes** folder to see the list of 2 outstanding active changes.
- 2. Right-click Active Changes and click Submit Change Set.



3. On the first page of the Change Wizard keep the default Project and click Next.

👍 Changes Wizar	d			_ 🗆 🗙
Submit Change	es			
Create a set of cha	anges and subm	nit them.		
Select a Project to :	submit changes	from:		
O Clips <u>T</u> acks				
1				
	10-1			
Ø	< <u>B</u> ack	<u> </u>	Einish	

- 4. To move all of your development changes to the Selected Changes window, Click Add All > and then click Finish.
- 5. In the Confirm Submit to Business Services Repository window, click Yes.
- 6. In the Change Submission Status window click OK. Notice that the Active Changes has gone to zero.

🕂 Change Submission Status	×
Submission of change set was successful. Governance ID is 5.	
	ОК

- 7. Log in to Business Space with the admin id and open up the **Governance** page of the **Clips And Tacks Fabric** space.
 - a. To get to the Business Space, in the Business Integration perspective of WebSphere Integration Developer, in the Servers view, right-click the WebSphere Business Monitor Server V6.2 server and select Launch → Business Space. (If a Security window displays, select the option to continue to the Web site or add this connection as an exception, depending on the browser being used).
 - b. When prompted, enter admin for the user ID and for the password (or the administrator ID and password if you have changed it).
 - c. Navigate to the Governance page of the Clips and Tacks Fabric space.
- 8. On the **Change Set** widget, select the row corresponding to the **Clips&Tacks** change set with the status column set to **Pending**. This change set is the list of changes that you submitted from WebSphere Integration Developer.
- 9. Click Approve Change Set.

Business Passing Li	Concernance Concernance	- W CS Man Lana				
sopilieop opivice Li	objettance	Carlo Dana and				
Change Set						
Type to filter						
Number	Change Set		Submission Date		Submitter	Status
000005	Clips&Tacks		2009-04-27 / 12:24:37	4	admin	() Pending
000001	Default		2009-04-09 / 11:40:06			Published
000002	Fabric Administration Console/SD	Ksenices	2009-04-21 / 15:39:25		system_user	Published
000003	FCA import		2009-04-21 / 15:40:33		admin	D Published
000004	FCA import		2009-04-21 / 15:44:18	4	admin	C Published
			* *			
			1-5 5			
donrove Ciba	nne Cet Delart Channe	Ret				
Approve city	inte oer inteletronante	560				
Detalls		External Links				History
General Informatio	n					
Number	000005					
Name:	Clips					
Description:						
Tags:						
Submitter:	admin					
Submission Date:	Monday, April 27, 2009 12:24:37 PM					
Status:	Pending					
Change Details						
Change		Change Type	Action	Submitter		Last Modified Date
BetterShippingE	ndpeint	Endpoint	Modify	admin		2009-04-27 / 12:24:33
		Endoaint	Delete	admin		2006-04-27 / 12-24-22

- 10. For the comment, type **Shipping Changes for Change 1** and click **OK**.
- 11. Click Publish Change Set.

Clips and Tacks F	abric 🔽		111111			
Business Service L	Ifecycle Management Governance	🕶 🗙 🖻 New Page				
Change Set						
Type to filter						Show All
Number	Change Set		Submission Date	Submitter	Status	Business
000005	Clips&Tacks		2009-04-27 / 12:24:37	admin	Approved	
000001	Default		2009-04-09 / 11:40:06		🚱 Published	
000002	Fabric Administration Console/SDF	services	2009-04-21 / 15:39:25	system_us	er 🕞 Published	
000003	FCA import		2009-04-21 / 15:40:33	admin	B Published	
000004	FCA import		2009-04-21 / 15:44:18	admin	B Published	
			×▲ 1-5 5			
Publish Cha	nge Set Defer Change Se	t				
Details		External Links			History	
General Informatic	n					
Number	000005					
Name:	Clips					
Description:						
Tags:						
Submitter:	admin					
Submission Date:	Monday, April 27, 2009 12:24:37 PM					
status.	Approved					
Change Details						
Change		Change Type	Action	Submitter	Last Modified Date	
BetterShippingE	ndpoint	Endpoint	Modify	admin	2009-04-27 / 12:24:3	37
		Endpoint	Delete	admin	2009-04-27 / 12:24:3	37

12. Click OK. The Clips&Tacks row shows Published in the Status column.

Your Busine	ess Space				W
Clips and Tacks F	abric 🖡	_			
Business Service L	ifecycle Management Governance	💌 🗶 📄 New Page			
Change Set					
Type to filter					Show
Number	Change Set		Submission Date	Submitter	Status Bus
000005	Clips&Tacks		2009-04-27 / 12:24:37	admin	Dublished
000001	Default		2009-04-09 / 11:40:06		ଜ Published
000002	Fabric Administration Console/SDI	Kservices	2009-04-21 / 15:39:25	system_user	C Published
000003	FCA import		2009-04-21 / 16:40:33	admin	බේ Published
000004	FCA import		2009-04-21 / 15:44:18	admin	🛱 Published
			1-5 5		
Details		External Links			History
General Informatio	n				
Number Name: Description: Tags:	000005 Clips				
Submitter:	admin				
Submission Date: Status:	Monday, April 27, 2009 12:24:37 PM Published				
Change Details					
Change		Change Type	Action	Submitter	Last Modified Date
BetterShippingE	ndpoint	Endpoint	Modify	admin	2009-04-27 / 12:24:37
		Endpoint	Delete	admin	2009-04-27 / 12:24:37

13. Switch back to the WebSphere Integration Developer workspace and the **Business Service** perspective, notice that there is now an entry in the **Pending Change Sets** folder under the **Repository Changes** tab.

Business Service 🐯 Business Inte
Repository Changes 🛛 📃 🗖
A 😫
Clips&Tacks

14. At the root of the tree, right-click Clips&Tacks and select Update Project.



- 15. In the Update Project window, click Finish.
- 16. In the Project Update Results window, click OK.

Change Set	Statuc
5 - Clips&Tacks	Published

Performing these steps moved your changes to the run time business services repository. The WebSphere Business Services Fabric server now has access to this metadata during run time. Additionally, you have re-synchronized your local Composition Studio environment.

To complete **Change 1**, you need to run a runtime test. For the actual runtime test, follow steps as outlined in the section "Testing the initial shipping policies" on page 89. Use the same input values provided there for the form except for the **Total Price**, which you should set to 10, to show that the Better Shipping endpoint now handles small orders as well.

Updating the shipping policies with Local Shipping Option

In this lesson, you will implement a change to the shipping policy for local orders.

Clips and Tacks made a business decision to update the shipping policies on how to handle shipping for all local orders. You will implement **Change 2** to the Clips and Tacks policy. The following table represents the Clips and Tacks service-provider endpoint capabilities (assertions) and use cases for service consumers for **Change 2**.

Order Size and Type	Internal Shipping	Better Shipping	International Express	Local Shippers
Order Size = SMALL and Order Type = DOMESTIC		Х		
Order Size = LARGE and Order Type = DOMESTIC		Х		
Order Type = INTERNATIONAL			Х	
Order Type = LOCAL				Х

Table 5. Clips and Tacks service-provider endpoint capabilities and use cases for Change 2

To create the Local Shippers endpoint in your fabric project.

1. Switch back to the Business Services perspective in WebSphere Integration Developer. In the **Business Services Explorer**, right-click **Endpoint** and select **New** → **Endpoint**.

Business Service Explorer	3	Assertion Explorer	¦∆ s
 Business Service Explorer Clips&Tacks Application Suite Application Business Services Business Variable Composite Service Composite Service Composite Service Composite Service Composite Service Composite Service Interface Composite Service Interface Context Specification 		Eabric Project Application Suite Application Susiness Service	
Emeire E		Business Variable Composite Service Interface Indevint Context Specification Policy Service Level	

2. Enter the name LocalShippersEndpoint, change the address to HTTP and select Next.

🛃 New Endp	oint	
E ndpoint Create an Er	idpoint	
Project:	Clips&Tacks	T
<u>N</u> ame:	LocalShippersEndpoint	
Name <u>s</u> pace:	ClipsAndTacks namespace	•
Address:	HTTP	٦
	\searrow	
~		

3. Enter the URL; https://localhost:<SECURE_SERVER_PORT>/LocalShippersEndpoint/services/ LocalShippersPort. Select Finish.

🔒 New Endpoir	nt				
Endpoint Create an Endp	point				
Message Type:	SOAP 1.1				•
URL:	https://localhost:9443/l	LocalShippersEndpoin	t/services/,ocalShipp	persPort	
	r9				
0		<u> </u>	ack Next >	Einish	Cancel

The LocalShippersEndpoint editor opens.

4. Select the **Interfaces** tab for this editor and click **Add Existing**, which is located in the upper-right corner of the **Associated Interfaces** table.

Interface Sele Choose an Interfa	ction :e:		
CalculateShipping OrderHandling	Charges		
(?)		ОК	Cancel

Note: If the **Add Existing** is returns a blank list of interfaces, open up the advanced editor by closing the editor that is currently open, right-clicking on the endpoint and selecting **Open with Advanced Editor**. The advanced editor will open up with the option to select the **supports** service through another window for **Interface Selection**.

Endpoint			
ID: Namespace:	u9f3a7c86-1ce5-4f97- ClipsAndTacks namesp	8c47-3dc828b52fc5	
Date Created:	<not mas<="" published="" td="" to=""><td>ter Business Services Repository></td><td>👫 Interface Selection 🛛 🛛 🗙</td></not>	ter Business Services Repository>	👫 Interface Selection 🛛 🛛 🗙
Date Modified:	<not mas<="" published="" td="" to=""><td>ter Business Services Repository></td><td></td></not>	ter Business Services Repository>	
Droperty		Value	Choose an Interface:
+ address		Valac	
artifact		Artifact (0)	Matabina Objector
assertions			Matching objects:
asset		PhysicalAsset (0)	CalculateShippingCharges
author		admin	OrderHandling
base cost			
classified b	y		
comment			
contains			
createdBy			
deployed in	n environment	Environment (1)	
external lin	k	ExternalLink (0)	
label		LocalShippersEndpoint	
modified by	/		
port			
source			OK Cancel
source			
status		Active	
supports se	ervice	Interface (1)	
supports st	andard	Industry Standard (0)	N
tagged by			
unique ider	ntifier	9f3a7c86-1ce5-4f97-8c47-3dc82	8b52fc5

5. Select CalculateShippingCharges and click OK.

Choose an Interface:	n	< <u> </u>
CalculateShippingCha OrderHandling	arges V	

- 6. Select the **Assertions** tab for this editor and click **Add**, which is located in the upper-right corner of the **Endpoint Capabilities** table.
- 7. Expand the **Interoperability** folder, expand the **Content Based Assertion** folder and then select **OrderSizeAssertion** and click **OK**.

/perlicer cexc	
🗦 🗁 Interoperability Assertion	
🚊 🗁 Content Based Assertion	
- 🔷 CountryAssertion	
OrderTypeAssertion	
Units Of Work	
Delivery Channel	
🗄 🗁 Notification Channel	
Supports Version	
Transformation	
WSI Profile	
E 🕞 Manageability Assertion	
E Performance Assertion	
Process Variation Assertion	
1.	

8. In the window that opens, select SMALL for the order size field and click OK.

OrderSizeAssertion	×
Assertion Options	
Required	
Assertion Property Values	
orderSize:	
SMALL	
	-î
	_

You have created an instance of this assertion type and associated it with this endpoint. There is now a row for this assertion in the table.

- 9. Create an assertion for LARGE orders by repeating the previous steps for adding an assertion but this time select LARGE for the order size and click OK.
- **10**. Create an assertion for Local orders by repeating the previous steps for adding an assertion but this time select the following:
- a. type is an OrderTypeAssertion in the same folder as the OrderSizeAssertion type.
- b. select **Required**.
- c. select LOCAL for the order type.
- 11. Verify that you have three rows in the **Endpoint Capabilities** assertion table, and close the editor. Save your work.

iapoint			
dpoint Capabilities			
8 Assertions			
Туре	Required	Value	
OrderSizeAssertion		SMALL	
OrderSizeAssertion		LARGE	
OrderTypeAssertion		LOCAL	
and the second of the second s			
			N

Create the business service policy named **NCLocalOrderType** that will use the Local Shippers endpoint.

12. Right-click **Policy** and select **New** → **Policy**.



13. For the name, type NCLocalOrderType. Then click **Browse** and select **Interface(2)** → **CalculateShippingCharges** and click **OK**.

	👉 New Polic	У	- U X
8	Create a l Select a targ	Policy _{pet.}	
	Project:	Clips&Tacks	
	<u>N</u> ame:	NCLocalOrderType	
	Namespace:	ClipsAndTacks namespace	•
ielect Target		X	Browse
Business Application Suite(0) Application(0) Business Service(0) Governance Fabric Project(5) Namespace(7) Environment(1) Organization(2) Service Level(0) Technical Composite Service(1) Dynamic Assembly Componen Interface(2)	nt(1)	Matching Objects: CalculateShipping harges OrderHandling	Cancel
		OK Cancel	ository Search Result ierver v6.2 on WebSp

- 14. Click Finish.
- 15. In the **Policy** editor, type 1 for the priority.

Policy Infor	mation	
Target:	CalculateShippingCharges	Browse
Start Date:		E C
End Date:		
Priority:	1	 •
	R	

16. Select the **Policy Expression** tab for this editor. Inside the Expression panel and select **Add** → **Operator** → **AND**.

Policy



- 17. Inside the Expression panel, right-click AND and select Add → Condition → Assertion.
- 18. In the window that opens, select **postalCode** for the content type and select **is greater than or equal** in the **Comparison** field.

19. Click Add Content and type 27006 for the postal code. Click OK twice.

ression	
AND	
Departy Condition	🚯 postalCode 🛛 🖡
Content Type: postalCode	postalCode:
Comparison: is greater than or equal 💌	27006
Add Content	
	OK Cancel
OK Cancel	

- 20. Repeat the previous 3 steps to add a condition but this time select **is less than or equal** in the **Comparison** field and *28698* for the postal code.
- 21. Verify that the content in your Policy Expression panel matches what is shown below.



- 22. Click Add in the Assertion table of the Policy Expression tab for this editor.
- 23. Expand the **Interoperability** folder, expand the **Content Based Assertion** folder, select **OrderTypeAssertion** this time, and click **OK**.
- 24. In the window that opens, clear the **Required** check box, select **Fill from Context**, select **LOCAL** for the order type, and click **OK**.

Required	Locked	
Fill from C	ontext	
ssertion Pro	operty ¥alues	
orderType:		
LOCAL		88

25. Save your work.

NCLocalOrderType 8					- 0
Policy					
Expression					
E [AN(C)] [DostalCode] >= 27006 [postalCode] <= 28699					
Assertion					
1 Assertion					
Туре	Required	Locked	Fill from Context	Value	Add
OrderTypeAssertion				LOCAL	Edt
					Domous
1					NGIII JYG

- **26**. Browse the Clips&Tacks fabric project. You can see that there are already two other local policies defined:
 - SCLocalOrderType is defined as any postal code between 29001 and 29449.
 - VALocalOrderType is defined as any postal code between 20101 and 22942.

All of these policies set the OrderTypeAssertion to LOCAL and so will result in the fabric choosing the LocalShippers Endpoint.

- 27. Simulate **Change 2** by following the steps as outlined in the section "Simulating the initial shipping policies" on page 86, changing the values of the **Test Verify Shipper** selection page to the following values:
 - CountryAssertion = USA
 - PostalCodeAssertion = 27519
 - TotalPriceAssertion = 100

The **Simulation Operations** panel shows only green check marks and the **LocalShippersEndpoint** is selected.

28. Publish your local changes to the business services repository by following the steps as outlined in the section "Using Governance to manage changes" on page 96. On the **Governance** page of the **Clips And Tacks Fabric** space, update your comments to be appropriate for **Change 2**.

To complete **Change 2**, you need to run a runtime test. For the actual runtime test, follow the steps as outlined in the section "Testing the initial shipping policies" on page 89. Use the same input values provided there for the form except for the Postal Code, which should be set to a value between 27006 and 28698 causing the Local Shipping endpoint to be selected. Run a second test with a **Postal Code** outside the three local ranges, any code that does not begin with the digit 2 will work, to see which shipping service is selected.

Monitoring the Order Handling business process

During the monitoring model development phase, you will use WebSphere Business Monitor Toolkit to build a monitor model that represents the Clips and Tacks business process activity and events.

To monitor the process and create a monitor model, complete the following tasks:

- 1. "Verifying that the business process emits events"
- 2. "Importing and opening the monitor model" on page 110
- 3. "Synchronizing the monitor model with the application" on page 112
- 4. "Adding monitoring details" on page 113
- 5. "Creating situation events" on page 117
- 6. "Creating a dimension model" on page 119
- 7. "Generating executable artifacts for the monitor model and deploying to the server" on page 122
- 8. "Configuring WebSphere Business Monitor for business situation events" on page 123
- 9. "Setting up access to the OrderHandling monitor model" on page 126

Verifying that the business process emits events

In this lesson, you will verify that events are emitted for decisions and invocation actions in the process.

Before you create the monitor model, you must select the events that WebSphere Process Server generates. WebSphere Business Monitor uses the generated events to monitor the process.

When you export the business model from WebSphere Business Modeler, decisions become BPEL links in WebSphere Integration Developer and the events required for monitoring are already selected.

To verify that events are available for monitoring, complete the following steps.

- 1. In the Business Integration view, select ClipsAndTacksF1 → Integration Logic → Processes → processes/orderhandling and then double-click OrderHandling to open the BPEL editor.
- 2. Click the white background of the process outside of the Generalized Flow (OrderHandlingFlow) element, which is the large rectangle that contains elements such as a receive activity, human tasks, and an invoke activity.
- **3**. Click the **Properties** tab under the BPEL diagram, and then click the **Event Monitor** tab (if you have to scroll down, scroll from the left side, not the right side). Verify that **All** is selected.

Description	😤 Process - OrderHandling					
Details		Dian Dia	612 P.107			_
Server	Destination	I CEI ∐Aud	tLog			
Administration	Monitor	Event Conten	1	On	Transac	tion
Java Imports	() None					
Join Behavior	() Al	e.4		िन	Eviction	-
Imports	0.0	POI		(V)	Existing	
Environment	Selected					
Event Monitor	Compensated	Empty	· ·		Existing	3
· Global Event Setting	Compensating	Empty	4		Existing	S
	Compensation failed	Empty	*		Existing	13
	Correlation	Empty	~		Existing	18

4. Click inside the **OrderHandling_Flow** parallel activity element, and then verify that **All** on the **Event Monitor** tab is selected.

The following screen capture shows the yellow flag icon on the OrderHandling process (right side of the diagram), which indicates that events are selected to be emitted for all the components inside the OrderHandling process.



Importing and opening the monitor model

In this lesson, you will import the business measures model from WebSphere Business Modeler to monitor the business process.

Note: Errors will result from the following actions, but these are corrected as you progress through the steps.

Complete the following steps:

- 1. In the Business Integration view, click **File** → **Import**.
- 2. Expand Other, select Project Interchange, and click Next.
- 3. Browse to and select ClipsAndTacksF1_Monitor.zip.
- 4. Select ClipsAndTacksF1_Monitor and click Finish.

lmport Project	Interchange Contents	6
mport Projects import Projects from a	a zip file.	Ç,
From zip file:	C:\ClipsAndTacks\ClipsAndTacksF1_Monitor.zip	Browse
Project location root:	C:\pocuments and Settings\Administrator\IBM\wid6.1\Cl	Browse
Select All Deselect	ct All Select Referenced	

5. Verify that the ClipsAndTacksF1_Monitor project is added to the project tree on the left pane.



Note: The monitor model name can vary slightly from OrderHandling_Monitor.mm to OrderHandling_Mon.mm.

6. Switch the Perspective to Business Monitoring Perspective by clicking the icon on the right corner and selecting Business Monitoring.



- 7. Close the **Technology Quickstarts** and the **Help** tabs.
- 8. In the project tree expand **ClipsAndTacksF1_Monitor** and double click the **Orderhandling Monitor.mm** to open the monitor model.

Synchronizing the monitor model with the application

In this lesson, because you changed an interface, you will synchronize the monitor model, clean the project, and build the workspace.

Complete the following steps:

1. Right-click **OrderHandling Monitor.mm** and select **Synchronize with Application**, and then click **OK**.



2. Click **Project** → **Clean**. Then click **OK** to build the workspace. This will cleanly rebuild all the artifacts included with the project.



Adding monitoring details

In this lesson, you will add events, triggers, and KPIs to the monitor model.

Events are requests or responses sent from one component to another. A trigger is a mechanism that detects an occurrence and can cause additional processing to occur in response. For example, you could define a trigger that causes a metric to be updated, a counter to increment, or a stopwatch to halt each time a task ends. Key performance indicators (KPIs) are quantifiable measurements of the improvement or deterioration in the performance of an activity that is critical to the success of a business.

- 1. Click KPI Model tab and expand OrderHandling KC.
- 2. Click on the Average Process Duration Trigger 1. For Trigger condition, enter the expression Average_Process_Duration ge dayTimeDuration('P3DT1H').
- 3. Click on the **Percentage of Orders Shipped Trigger 1**. For **Trigger condition**, enter the expression Percentage_of_Orders_Shipped < 85.
- 4. Click **Average process Duration** (one of the KPIs) and examine how the KPI is calculated. How the KPI gets its value is shown under KPI Value. The metric and the aggregate function are shown under KPI Details. Everything is set up already.
- 5. Click **Percentage of Orders Shipped**. There is no metric available to calculate this KPI. You need to create a KPI for the number of shipped orders and another KPI for the total number of orders. From that you can calculate the percentage of orders shipped.
- 6. Create the Total Number of Orders KPI by right-clicking **OrderHandling KC** and selecting **New** → **KPI**. For the name, enter as Total Number of Orders and click **OK**.
 - a. Under KPI Value select Base this KPI on a metric and an aggregation.
 - b. Under KPI Details, select **OrderHandling** as the monitoring context.
 - c. Select OrderHandling Instance ID as the metric.
 - d. Select **Count** as the aggregation function and leave everything else as it appears by default.

 KPI Definition Specify how the value of t 	he KPI is set.	
KPI Value		
Choose how the KPI wi	get its value:	
Base this KPI on a m	etric and an aggregation function.	
Write an expression	to calculate this KPI based on existing KPIs	
KPI Details Monitoring context:	* OrderHanding	Browse
Metric:	* OrderHanding Instance ID	Browse
Aggregation function:	* Count	~
the contract from	All model userians . O Only this yearing of the model	

- 7. Create the Shipped Orders KPI by right-clicking **OrderHandling KC** and selecting **New** → **KPI**. Enter name as Shipped Orders and click **OK**.
 - a. Under KPI Value, select Base this KPI on a metric and an aggregation.
 - b. Under KPI Details, select **OrderHandling** as the monitoring context.
 - c. Select OrderHandling Instance ID as the metric.
 - d. Select **Count** as the aggregation function and leave everything else as it appears by default.

Note: This KPI should be counting only shipped orders. Under **Data Filter** you will need to filter only the shipped orders. For that you need to create a new metric called **Order Status**. You will create the **Order Status** metric in the next step and later complete the **Data Filter** for this KPI.

 KPI Deta Edit the deta 	hils als of the KPI, which is a r	performance measurement used to track i	business objectives.	
ID:	Shipped_Orders			Edit
	*			
Name:	Shipped Orders			
Description:				~
				V
ype:	Decimal			~
	*			
WDT T	1			
Specify a tar	get, which is an exact val	lue for the KPI to achieve, or ranges agai	inst which to track the KPI, or both.	
arget:				Details
	Antoni colora			
anges: "	Actual value			
;	Range name	Start value	End value	
			Add	Remove Sort
 KPI Definition Specify how 	nition the value of the KPI is se	*		
KPT Value	are value of are rearies ac	4*		
Choose b	ow the KPI will get its value	a#1		
 Base t 	his KPI on a metric and an	aggregation function.		
() Write	an expression to calculate	this KPI based on existing KPIs		
KPI Detai	ls			
Monitori	ng context: * OrderH	anding		Browse
Metric:	OrderH	andling Instance ID		Browse
Angrega	tion function: Count			
1991090	*			

8. Create the Order Status metric.

- a. Click the **Monitor Details Model** tab and right-click the **OrderHandling** monitor context. Select **New** → **Metric**.
- b. Enter Order Status as the name and leave String as the type. Click OK.
- **c**. Select **A value is required for this metric** because a dimension uses this metric and it requires a value for dimensional analysis.
- d. For the default value, enter 'New' with the single quotation marks. You need to create triggers to set the value of the metric. See the next step to see how to create triggers. You select the triggers later.

 Metric Del Edit the details 	tails s of the metric, which is a h	olding spot for informa	ition used in other calculations.		
ID:	* Order_Status				Edit
Name:	Order Status				
Description:					~
					>
Type:	* String				~
	Maximum String Length:	256			
	Allocate additional sp	ace in database to ac	commodate Unicode string for globa	lization	
🗹 A value is n	equired for this metric				
Default Value:	* New'				Edit
This metric	can be used for sorting				
 Metric Val Specify the ex 	ue Expressions pressions that set the value	e of the metric. If a tr	gger is specified, the map is evalua	ted when the trigger fires.	
Trigger	Express	ion			

- 9. Create the Shipped Order and the Canceled Order triggers.
 - a. In **Monitor Details Model** tab, right-click the **OrderHandling** monitoring context and select **New Trigger**.
 - b. Enter Shipped Order Trigger as the name and click **OK**.
 - c. Under Trigger Sources, click Add. Click Other source type and select OrderHandling → Ship Order to Customer → Ship Order to CustomerExit. Click OK.

	* Shipped_Order_Trigger		Edit
Name:	Shipped Order Trigger		
Description:			2
			2
✓ Trigger is	repeatable		
Terminate	e monitoring context		
• Trigger S	Sources		
 Trigger S Specify the s 	Sources source of this trigger.	Same	
 Trigger S Specify the s Source Type Event 	Sources source of this trigger. pe	Source d ³ Ship Order to CustomerEXIT	and some second

d. In **Monitor Details Model** tab, right-click the **OrderHandling** monitoring context and select **New Trigger**.

- e. Enter Canceled Order Trigger as the name and click OK
- f. Under Trigger Sources, click Add. Click Other source type and select OrderHandling → Cancel Order and Send Notification → Cancel Order and Send NotificationExit. Click OK.

	tails of the trigger, which dete	ects an occurrence and initiates an action in response.	
ID:	* Cancelled_Order_Trigge	7	Edit
Name:	Cancelled Order Trigger		
Description			<u>^</u>
			~
Trigger i	s repeatable te monitoring context		
 Termina Trigger 	Sources		
 Termina Trigger Specify the 	Sources source of this trigger.		
Trigger Specify the Source T	Sources source of this trigger.	Source	
Trigger Specify the Source T Event	Sources source of this trigger. ype	Source	
Trigger Specify the Source T Event	Sources source of this trigger.	Source	

- 10. Complete the Order Status metric.
 - a. Click Order Status. Under Metric Value Expressions, click Add and then click Trigger Cell and select Shipped Order Trigger.
 - b. Under Expression, enter 'Shipped' including the single quotation marks.
 - c. Repeat steps a and b to add Canceled Order Trigger as the trigger value and 'Canceled' including the single quotation marks for the expression.

Trigger	Expression	
Shipped Order Trigger	2+V 2? 'Shipped'	
Canceled Order Trigger	27 'Canceled'	

- 11. Complete the Shipped Orders KPI.
 - a. Click the KPI Model tab and then click Shipped Orders.
 - b. Under Data Filter, click Add and select Order Status as the metric. Click OK.
 - c. Under values type 'Shipped' with the single quotation marks.

-Order Status equals ? Shipped	

- 12. Complete the Percentage of Orders Shipped KPI
 - a. Click Percentage of Orders Shipped.
 - b. For KPI Value, select Write an expression to calculate this KPI based on existing KPIs.
 - c. For KPI Calculation, enter (Shipped_Orders div Total_Number_of_Orders) * 100. You can use context assistant to complete the expression inside the parentheses.

▼ KPI Definition	
Specify how the value of the KPI is set.	
KPI Value	
Choose how the KPI will get its value:	
O Base this KPI on a metric and an aggregation function.	
• Write an expression to calculate this KPI based on existing KPIs	
KPI Calculation	
For example, you could have a Total Profit KPI that subtracts the Total Cost KPI from the Total Revenue KPI.	
(Shpped_Orders div Total_Number_of_Orders) * 100	*

Creating situation events

In this lesson, you will create situation events to allow the outbound events to be visualized as alerts in the Business Space.

- 1. Create the Shipped Percentage situation event.
 - a. Drag the DeclinedOrderEvent.xsd file to under Event Definitions.
 - b. Create the Shipped Percentage Event outbound event by clicking the KPI Model tab (for OrderHandling Monitor.mm), right-clicking the OrderHandling KC, selecting New > Outbound Event, and entering Shipped Percentage Event as the name.
 - c. Select Configure this event to be processed by WebSphere Business Monitor action services.
 - d. For the trigger, browse to Order Handling KC > Percentage of Orders Shipped Trigger 1 and click OK and then click OK again.
 - e. In Event Type Details, in Event Parts, click Add and then click Select Type.
 - f. In the Select Event Part Data Type window, select Choose the data type from the XML schemas accessible from this monitor project.
 - g. Select ClipsAndTacksF1_Monitor → DeclinedOrderEvent.xsd → doe:DeclinedOrderEvent, click Next, then click Finish.



h. Change the path to **cbe:CommonBaseEvent/doe:DeclinedOrderEventType**, and click **Finish**.

🕑 Crea	te New Event Part Type
Create Specify t time.	an event part type he details of the event part. Together, all the event parts describe the structure of the event at run
Name:	My Event Part
ID:	My_Event_Part
Type:	doe:DedinedOrderEvent Select Type
Path:	dbe:CommonBaseEvent/doe:DedinedOrderEventType
0	< <u>Back</u> Next > Einish Cancel

i. In the Outbound Event Content, expand **Percentage of Orders Shipped Trigger1 > My Event Part**. For BusinessSituationName, enter 'Shipped Percentage Event' for the expression, including the single quotation marks.

Name	Туре	Expression
🖃 📫 Percentage of Orders Shipped Trigger 1	and also	
Property Data		
🖽 🔂 Extended Data		
🖃 🌇 My Event Part	doe:DeclinedOrd	
e BusinessSituationName	xs:string	2.49 2.29 'Shipped Percentage Event'

- 2. Create Order processing Time situation event.
 - a. Drag the LateAverageOrderShippedEvent.xsd file to under Event Definitions.
 - b. Create the Order Fulfillment Event outbound event by clicking the KPI Model tab (for OrderHandling Monitor.mm), right-clicking OrderHandling KC, selecting New → Outbound Event, and entering Order Fulfillment Event for the name.
 - c. Select Configure this event to be processed by WebSphere Business Monitor action services.
 - d. For the trigger, browse to **Order Handling KC** → **Average Process Duration Trigger 1** and click **OK** and then click **OK** again.
 - e. In Event Type Details, in Event Parts, click Add and then click Select Type.
 - f. In the Select Event Part Data Type window, select **Choose the data type from the XML schemas** accessible from this monitor project.
 - g. Select ClipsAndTacksF1_Monitor → LateAverageOrderShippedEvent.xsd → laose: LateAverageOrderShippedEvent, then click Finish.

Select Event Pa	rt Data Type	X
Select event par	t data type	ucture of this event part
Choose the XML scher	la data type diat dennes die sol	actore of this event part.
○ No data type spe	tified for this event part	
Ohoose the data	type from the XML schemas acce	ssible from this monitor project
🗉 🖉 ClipsAnd	acksF1_Monitor	
🕀 🔄 Declir	edOrderEvent.xsd	
E S Late	verageOrderShippedEvent.xsd	
Charles and	ose:LateAverageOrderShippedE	vent
€ 🗠 CipsAnd	acks=1	
Chasse from the	int of gradefined VMI advance on	unla data tuman
O choose from the	ist of predefined XML schema sin	ipie data types
Type:		<u>×</u>
O Choose the type	from the predefined data types in	n the XML catalog
Type:		Browse

- h. Change the path to **cbe:CommonBaseEvent/laose:LateAverageOrderShippedEventType** and click **Finish**.
- i. In the Outbound Event Content, expand Average Process Duration Trigger1 → My Event Part. For BusinessSituationName under Expression enter 'Order Fulfilment Event' including the quotes.

Name	Туре	Expression	
🖃 📫 Average Process Duration Trigger 1			
🖼 Property Data			
표 🔂 Extended Data			
😑 📸 My Event Part	laose:LateAvera		
BusinessSituationName	xs:string	"" 'Order Fulfillment Event'	
AverageOrderProcessingTime	xs:string	**** xs:string(Average_Process_Duration div xs:dayTimeDuration(*P	

- j. For AverageOrderProcessingTime, set the expression to xs:string(Average_Process_Duration div xs:dayTimeDuration('P1D')). This expression displays the average process duration in units of days.
- 3. Click **Ctrl-S** to save your work.

Creating a dimension model

In this lesson, you will create a dimensional model to enable multidimensional analysis of collected data.

The Clips and Tacks dimensional model will be used for the organization of a dimensional analysis widget to be included on the dashboard that will show the aggregation of orders (instances) by their order status.

- 1. Click the **Dimensional Model** tab and expand **OrderHandling** \rightarrow **Orderhandling Cube**.
- 2. Create a new dimension.
 - a. Right-click the **Orderhandling Cube** and select **New > Dimension**.
 - b. Enter Order Status as the name and click OK.
 - c. Right-click **Order Status** in the navigation, and then select **New** → **Dimension Level**.

- d. Enter Order Status as the name and click **Browse** to find the source metric. Select **Order Status**. Click **OK** and then click **OK** again.
- **3.** You want a multilevel dimension called Location that lets you drill down on the country and then the city within the country. To enable the Location dimension, you need to create metrics for the country and city, and then you can complete the Location dimension to refer to these metrics.
 - a. Create a metric called Country by clicking the **Monitor Details Model** tab, right-clicking the **OrderHandling** monitoring context, and selecting **New** → **Metric**.
 - b. Enter **Country** as the name and leave the type as **String**, then click **OK**.
 - **c.** Select **A value is required for this metric** because a dimension uses this metric and requires a value for dimensional analysis. For the default value, enter an empty string (two single quotation marks).
 - d. In **Metric Value Expressions**, click **Add**. In the expression cell, use the content assistant to navigate to the **OrderHandling** → **OrderHandlingEXIT** event then select **Country** in the order data under **Customer**.



The resulting expression is OrderHandling2/OrderHandlingEXIT/Order/Customer/Country.

▼ Metric	Details					
Edit the de	tails of the metric, whi	ch is a holding spol	for information	used in other calculati	ions.	
ID:	* Country					Edit
Name:	Country					
Description	:					
						x
Туре:	* String					•
	Maximum String	Lenath: 256				
	Allocate add	itional space in dat	abase to accom	nodate Unicode string	for globalization	
					-	
M value	is required for this me	ecric				
Default Val	ue: "					Edit,.,
🗖 This me	tric can be used for so	orting				
▼ Metric	Value Expressions					
Specify the trigger fire:	expressions that set s.	the value of the m	etric. If a triggei	is specified, the expr	ession is evaluated w	hen the
Trigger		Expression				
E		OrderHand	lling2/OrderHan	dlingEXIT/Order/Custo	mer/Country	
					Add	Remove

- e. Repeat the necessary steps to create a metric called City. The resulting expression is OrderHandlingReceive/OrderHandlingReceiveEXIT/Order/Customer/City.
- 4. Update the Location dimension using the Country and City metrics:
 - a. Click **Dimension Model** tab. Navigate to the **Order Handling Cube** → **Location**. Notice that there is a dimension level called Location underneath the Location dimension.
 - b. Right-click Location underneath the Location dimension and select Delete.

Order Price Total				
😑 🔐 Locati	on			
LC LC	cation !			
🖮 📮 🗘 Order	New	•		
l⇒ o	Filter	•		
🗐 OrderHan				
🗐 Review O	📄 Сору			
🗐 Ship Orde	💼 Paste			
🗐 Update O	💥 Delete			

- c. Right-click the Location dimension and select New > Dimension Level.
- d. Enter Country as the name, and then click **Browse** to find the source metric and select **OrderHandling** → **Country**. Click **OK**.
- e. Right-click the Location dimension and select New → Dimension Level.
- f. Enter City for the name, then click **Browse** to find the source metric and select **OrderHandling** > **City**. Click **OK**. The resulting Location is shown in the following screen capture.



g. Save your work.

- 5. Select **Project > Clean**, and then select **Clean all projects**. Click **OK**.
 - a. Warnings and informational messages might be present and can be ignored. Check for any errors in the Problems view and resolve the errors before continuing.

Generating executable artifacts for the monitor model and deploying to the server

In this lesson, you will use WebSphere Integration Developer to deploy the monitor model to the WebSphere Business Monitor testing environment.

- 1. Generate the J2EE application from the monitor model.
 - a. In the Business Monitoring perspective project tree, expand ClipsAndTacksF1_Monitor > Monitor Models > Order Handling, right-click OrderHandling_Mon.mm and select Generate Monitor J2EE Projects and then click Finish.

🕀 Generate Monitor J2EE	Projects
Target project names for the ge	enerated code
Model Logic Project Name	OrderHandling_MonModelLogic
Moderator Project Name	OrderHandling_MonModerator
J2EE Application Project Name	OrderHandling_MonApplication
Overwrite existing projects	✓ Clean build
	Finish Cancel

A progress window shows the status of the operation and it closes when the operation is complete. This takes a few minutes.

- 2. Deploy the generated projects.
 - a. Click the **Servers** tab and then right-click **WebSphere Monitor Server v6.2 on WebSphere Process Server** and select **Start** to start the server. Starting the server might take a few minutes.
 - b. After the server starts, right-click WebSphere Monitor Server v6.2 on WebSphere Process Server again and select Add and Remove Projects.
 - c. Click Add All to move ClipsAndTacksF1App, the Endpoints applications, and OrderHandling_MonitorApplication from the list of available projects to the list of configured projects and then click Finish. A progress message displays in the lower-right corner of the window. Deploying and starting the applications might take a few minutes.

Note: At this time, you may be deploying just the WebSphere Business Monitor projects if the Fabric and WebSphere Integration Developer projects are already deployed.

🖶 Add and Remove Projects			
Add and Remove Proje Modify the projects that are cor	cts ifigured on the server		
Move projects to the right to cor	figure them on the serve	r	
Available projects:		Configured projects:	
BetterShippingEndpoint ClipsAndTacksF1App InternalShippingEndpoint ClipsAndTacksF1App InternalShippingEndpoint LocalShippersEndpointE OrderHandling_MonApp	Add >		
4	Add All >>		
☑ If server is started, publish o	 hanges immediately	,	
?	< Back Next	> Finish	Cancel

d. Check the messages in the Console view for errors and correct them should they be present before continuing.

Configuring WebSphere Business Monitor for business situation events

In this lesson, you will configure WebSphere Business Monitor to create alerts by configuring Action Services to send notifications when business situation events are received.

The situation events are defined in and sent by the monitor model as outbound events. The notifications are visible as alerts in the Alert view on your dashboard.

- 1. Click **Window** → **Preferences**. Expand General and click **Web Browser**. Select *Use external Web browser*. Click **OK**.
- 2. In the Servers view, right-click WebSphere Business Monitor Server v6.2 on WebSphere Process Server and select Administration → Run administrative console. The administrative console opens in a new window (if a Security page displays, select the option to continue to the website or add this connection as an exception, depending on the browser being used). The administrative console prompts you for a user ID and password. For the user ID, enter admin. For the password, enter admin. Click Log in.
- 3. Add an alert template for when the percentage of shipped orders needs attention.
 - a. In the administrative console, select **Applications** → **Monitor Services** → **Monitor Action Services** → **Template Definitions** → **Notifications** and click **New**.
 - b. For the template name, enter AlertShip, and then enter any description.
 - c. Select Dashboard Alert. This indicates an alert is sent to the business dashboard's alert view.
 - d. Select User id.
 - e. In the **To** field, enter admin. This user ID is the user logged into the business dashboard that receives the alert. You must log into the business dashboard with this user ID.

- f. In the **Subject** field, enter Percentage of shipped orders. This is the title of the alert in the dashboard.
- g. In the Body field, enter Percentage of shipped orders is less than 85.
- h. Click OK.

То	
admin	
Query base	
Subject	
percentage of shipped orders	
Body	
Percentage of shipped orders less than 85.	is 🗌
	_

- 4. Add an alert template for when order processing time needs attention.
 - a. In the administrative console, select **Applications** → **Monitor Services** → **Monitor Action Services** → **Template Definitions** → **Notifications** and click **New**.
 - b. For the template name, enter AlertTime, and then enter any description.
 - c. Select Dashboard Alert. This indicates an alert is sent to the business dashboard's alert view.
 - d. Select User ID.
 - e. For the **To** field, enter admin. This user ID is the user logged into the business dashboard that receives the alert. You must log into the business dashboard with this user ID.
 - f. For the Subject field, enter Order processing time.
 - g. For the Body field, enter The average order processing time is %AverageOrderprocessingTime% days.
 - h. Click OK.
- 5. Add the binding from the situation event to the action type of the alert template for shipped percentage situations:
 - a. In the administrative console, select **Applications** → **Monitor Services** → **Monitor Action Services** → **Installed Situation Event Bindings** and click **New**.
 - b. Enter the situation event name you defined in the model. You named the business situation Shipped Percentage Event. The name must match the value in the BusinessSituationName field in the outbound event. You might want to copy the name from the monitor model (without the quotation marks).

 Outbound Event Content Specify the triggers that cause the event to be sent 	. Use the Expression colu	inn to specify the value for each event attribute when the event is sent.	
Name	Туре	Expression	
🖃 🎰 Percentage of Orders Shipped Trigger 1			
🖶 Property Data			
🗆 🗟 Extended Data			
BusinessSituationName	A string	2° Shipped Percentage Event	
Part Part	doe:DeclinedOrder		
BusinessSituationName	xsistring	Shipped Percentage Event'	

- c. Enter any description and then click **Apply**.
- d. In the table under Preferences, click Add.
- e. Enter a binding name, for example Shipped Percentage Event, and then select the template **AlertShip**.
- f. Click **OK**. Notice you now have one action defined for this situation event. If you had other action templates defined, then you could add more actions to this event and you could send a notification for this situation event to multiple destinations using e-mail, alerts, and Web services.

ew Site	uation Event Binding			
enera	l Properties			
Situa	tion event name			
Ship	ped Percentage Event			
Descr	iption			
Ship	ped percentage event			
Apply	OK Reset Can	el		
Add	Remove			
	R 144 162			
42				
Select	Binding Name 🗘	Category Name 🗘	Template Name 🗘	Action Service Type 🗘
	Shipped Percentage Event		AlertShip	AlertHandler
Total	1			

g. Click Ok.

- 6. Add the binding from the situation event to the action type of the alert template for action processing time situations.
 - a. In the administrative console, select **Applications** → **Monitor Services** → **Monitor Action Services** → **Installed Situation Event Bindings** and click **New**.
 - b. Enter the situation event name that you defined in the model. You named the business situation Order Fulfillment Event. The name must match the value in the BusinessSituationName field in the outbound event. You might want to copy the name from the monitor model (without the quotation marks).
 - c. Enter any description and then click **Apply**.
 - d. In the table under Preferences, click Add.
 - e. Enter a binding name such as Order Fulfillment Event, select the template AlertTime, and then click OK.

enera				
Situ	ation event name			
Orde	r Fulfillment Event			
Desc	ription	i		
		11		
Appl	y OK Reset	Cancel		
Appl	y OK Reset	Cancel		
Appl	y OK Reset	Cancel		
Appl	y OK Reset	Cancel		
Appl] Pre	y OK Reset	Cancel		
Appl Pre	y OK Reset	Cancel		
Appl Pre Ad	y OK Reset	Cancel		
Appl Pre Ad	y OK Reset	Cancel		
Appl Pre Ad elect	y OK Reset	Cancel	Template Name 🗘	Action Service Type 🗘
Appl Pre Ad elect	y OK Reset	Cancel	Template Name 🗘 AlertShip	Action Service Type 🗘

- f. Click OK.
- g. In the administrative console, select **Applications** → **Monitor Services** → **Monitor Action Services** → **Installed Situation Event Bindings**. You see the two bindings you created.

Install	ed Situation Event Bindings	
Use this page to manage situation event bindings.		
Preferences		
New Delete		
	6 # \$	
Select	Situation Event Name 🗘	Situation Event Description
	Order Fulfillment Event	Order fulfillment event
	Shipped Percentage Event	Shipped percentage event
Total 2		

Setting up access to the OrderHandling monitor model

In this lesson, you will configure the Data Security Services in WebSphere[®] Business Monitor to permit the administrative user access to the OrderHandling_ClipsAndTacksF1 monitor model.

Access is automatically granted when the WebSphere Business Monitor development toolkit is installed. However, because the WebSphere Process Server profile was augmented with the development toolkit profile in this tutorial, you need to manually set up access to this resource. You will grant the administrative user access to the deployed monitor models, OrderHandling_ClipsAndTacksF1 and GlobalHTMM.

- If you are not still logged in, login to the administrative console of WebSphere Business Monitor Server V6.2 on WebSphere Process Server. For the user ID, enter admin. For the password, enter admin.
- 2. In the administrative console, select **Security** → **Monitor Data Security** and click the **root** entry in the Resource Groups table.

🗆 Security

- Business Integration Security
- Secure administration, applications, and infrastructure
- SSL certificate and key management
- Bus Security
- Monitor Data Security

Resource Groups

New	Delete
Select	Name
	root
1Total	

3. In the Roles section, select Business-Manager, and then click Users.

	ta Security Administration
Monito	r Data Security Administration > root
Models	
Globa Order	HTMM Handling_ClipsAndTacksF.
	*
Roles	
Select -	a role for this resource group, and click either Users or Groups.
Please	note that the following requirements must be met in order to assign users or groups to a role
- Admi	nistrative Security must be enabled
- Applic	ation Security must be enabled
- Feder	rated Repositories must be the selected User Account Repository
Users	Oroups
Select	
	Name
۲	Name Business-Manager
е С	Name Business-Manager Personal-KPI-Administrator
© 0	Name Business-Manager Personal-KPI-Administrator Public-KPI-Administrator
• • • •	Name Business-Manager Personal-KPI-Administrator Public-KPI-Administrator KPI-Administrator

4. Click **Search**. When the Available panel is populated, select the entry with **uid=admin** and then click the right arrow to move **uid=admin** to the Selected panel. Click **OK** and then click **OK** again.

Search for Maximum results	
Available uid=admin,o=defaultWIMFileBasedRealm uid=bdaniel,o=defaultWIMFileBasedRealm uid=dedwards,o=defaultWIMFileBasedRealm uid=igames,o=defaultWIMFileBasedRealm uid=leafesberg,o=defaultWIMFileBasedRealm uid=mcharles,o=defaultWIMFileBasedRealm uid=mcharles,o=defaultWIMFileBasedRealm uid=redwards,o=defaultWIMFileBasedRealm	Selacted uid=admin.o=defaultWIMFileBasedRealm >> <<

- OK Cancel
- 5. Repeat steps 3 and 4 for each of the next three available roles: **Personal-KPI-Administrator**, **Public-KPI-Administrator**, and **KPI-Administrator**. Then click **OK**.

Testing the Order Handling business process

The order handling process has been modeled, developed, optimized with points of agility, and is configured to emit events for monitoring. The order handling monitor model has been developed to handle those emitted events for display in the Business Space. The Order Handling projects (executables) have been deployed to the WebSphere Process Server and WebSphere Business Monitor. Now you will test this code to observe the corresponding output and behavior.

Run the process multiple times so there is enough data to display in the Business Space widgets. Create a process instance for each of the following orders. For the non-specified values, any value is acceptable as long as it does not repeat values for value-unique fields, such as the shipping number.

To run the process instances, do the steps that were used during the runtime testing in the section "Testing the initial shipping policies" on page 89.

You can create more scenarios than are listed here.

- Scenario 1: Process tasks run; approve without review; account in good standing; ship the order
 - 1. Form data to start this instance of the process.
 - a. Rating: 800
 - b. Available Credit: 800
 - c. Total Price: 200
 - 2. Ship task
 - a. Packing Slip Number: Any unique value
- Scenario 2: Process tasks run; approve without review; account not in good standing; approve the order; ship the order
 - 1. Form data to start this instance of the process.
 - a. Rating: 800
 - b. Available Credit: 100
 - c. Total Price: 300
 - 2. Review task
 - a. Order Status: APPROVED
 - 3. Ship task
 - a. Packing Slip Number: Any unique value
- Scenario 3: Process tasks run; approve without review; account not in good standing; decline the order

- 1. Form data to start this instance of the process.
 - a. Rating: 800
 - b. Available Credit: 100
 - c. Total Price: 400
- 2. Review task
 - a. Order Status: REJECTED
- Scenario 4: Process tasks run; do not approve without review; approve the order, ship the order
 - 1. Form data to start this instance of the process.
 - a. Rating: 10
 - b. Available Credit: 100
 - c. Total Price: 900
 - 2. Review task
 - a. Order Status: APPROVED
 - 3. Ship task
 - a. Packing Slip Number: Any value
- Scenario 5: Process tasks run; do not approve without review; decline the order
 - 1. Form data to start this instance of the process.
 - a. Rating: 10
 - b. Available Credit: 100
 - c. Total Price: 800
 - 2. Review task
 - a. Order Status: REJECTED
- Scenario 6: Repeat Scenario 5

Repeating the declined order scenario is necessary to see an alert in the Alerts view of the business space dashboard. The monitor model is configured to raise an alert when the number of shipped orders is less than 85 percent of the total number of orders. You will see this alert when you complete the steps in the "Creating a business dashboard in Business Space" section.

Creating a business dashboard in Business Space

In this lesson, you will create a business dashboard to monitor the Order Handling process using Business Space powered by WebSphere.

- 1. If not already logged in, log in to Business Space as userID admin.
- 2. Add a page named C & T Instances to the previously created ClipsAndTacks business space.

Tour Business Space	Welcome admin Help Logout
Business Space Manager	
Search W	
ClipsAndTacks Owned by admin admin Pages: 1	Page Name
C & I Tasks Owned by admin admin	Page Description
Solution Management Owned by admin admin Pages 3 For managing and administering your business applications and solutions on Websphere Process Server.	
Welcome Dwned by System Administrator Pages: 1 Forlearning about Business Space	

- a. Navigate to the Business Space Manager.
- b. Select the ClipsAndTacks business space.
- c. Click the **Create new page** icon icon icon and click **OK**.

C & T Instances	/ page	
Empty Layout From existing page		
C & T Tasks	*	

The ClipsAndTacks business space is updated with the C & T Instances page.

- 3. Add an instance widget to the C & T Instances page:
 - a. Click the C & T Instances link to open the page. Click Add Widgets, which is in the center of the page, and type Instances. Drag the Instances item to the page.

Instances	Æ 19 \$
Business Monitoring	
📲 Instances	

You could also click Add Widgets from the right corner of the page.

b. Click the down arrow icon 🔽 on the right side of the Instances toolbar and select **Configure**.

Instances	= = 0
To begin using this widget, configure the widget settings by clicking Configure from the widget menu.	gt Configure
Impute: Impute: <t< td=""><td> Refresh Delete Help </td></t<>	 Refresh Delete Help

c. In Select the monitoring context to personalize, expand OrderHandling (Across all Versions) and select OrderHandling. In Select the columns to display, select City, Country, Order Status, and

Price per order. Use the right arrow **to move to these items into the Selected** column. Then click **Set as default**.

Instances Show/Hide Filter Sort Format Cooperative			* I 🗆 '
Select the monitoring contexts to personalize:	Select the columns to display. Available: COMPLETED CreationTime OrderHanding Instance ID OrderHanding Processing Time Review Order Processing Time Ship Order to the Customer Processing TerminationTime Update Order Database Processing Time	Selected: * Order Status City Country Price per Order	A
Include model specific versions Select a default monitoring context* OK Apply Restore Cancel	Number of rows to display:" 10 Refresh rate (in seconds)" 60		

d. Click OK. The resulting Instances view is shown in the following screen capture.

① Export	⊞ B	earch for:	Reset	
Order Status	City	Country	Price per Order	
New	New York	USA	1,000	
Shipped	New York	USA	1,000	
Shipped	Cary	USA	200	
Cancelled	Los Angeles	USA	400	
Shipped	Austin	USA	900	

- 4. Create a new page, add the KPI and Alerts widgets, and then configure the page:
 - a. Click the New Page tab.
 - b. Enter C & T KPI and Alerts as the page name, and then click OK.
 - c. Click Add Widgets and enter KPIs. Drag the KPIs item to the page.
 - d. Select **Configure**. Select the **Average Process Duration** and **Percentage of Orders Shipped** KPIs that you want to display on the widget.



e. Click the Layout tab. Select Half Gauge as the display type. Click OK.

(Pls	-
KPIs Layout Cooperative	
Select a display type	
Half Gauge 💌	
Select a layout	
Horizontal	
Hide display buttons	
Calumns	
2	
Select a size for visualization elements	
Medium 🕶	
*Refresh rate (in seconds) 60	

The KPI view opens.

Actions T		× = =
Average Process Duration +	Percentage of Orders Shipped +	
2 d, 14 h, 24 m 3 d, 9 h, 36 m	38 54	
1 d, 1 1 d 5 d	18 0 72 90	

- 5. Add the Alerts widget to the C & T KPI and Alerts page:
 - a. Click Add Widgets and enter Alerts. Drag the Alerts item to the page, underneath the KPIs widget.

There are two alerts defined in the model: one for shipped percentage and one for order processing time. The latter alert is based on a processing time greater than three days, so it is difficult to test here, unless you use the **KPI Manager widget** to reduce the target. The former alert can be tested easily by ensuring the number of shipped orders is less than 85 percent of the number of total orders.

Note: WebSphere Business Monitor may ship with a default BAM showcase model. The alert view may display alerts from this showcase model.

b. Click the alert to see details.



- 6. Create a new page to add the Human Tasks widget and Dimensions view:
 - a. Click the New Page tab .
 - b. Enter C & T Human Tasks and Dimensions as the page name and click OK.
 - c. Click Add Widgets and enter Human Tasks. Drag the Human Tasks item to the page.
 - d. Select Configure.
 - e. Select **Creation Time**, **Owner**, and **Status** and use the right arrow **be selected** column.

Human Tasks				*
Show:Hide Filter Sort	Advanced Cooperativ	/8		
Set the columns to display.				
Available:		* Selected:		
Escalation Counter Expired Follow-on ID Human Task Instance ID Parent Task Instance ID Queue Time Claim Time On Hold		Creation Time Owner Status		
* Number of rows to display:				
• Refresh rate (seconds): 60				

f. Click OK. The Human Tasks view displays.

tions •• Tasks		
Creation Time	Owner	
December 7, 2008 2:58:53 PM	A admin	9
December 7, 2008 2:59:37 PM	🛎 admin	θ.
December 7, 2008 3.07.42 PM	A admin	
E December 7, 2000 301.42 PM	admin	

- 7. Add the Dimension widget to C & T Human Tasks and Dimensions page:
 - a. Click the Add Widgets and enter Dimensions. Drag the Dimensions item to the page, underneath the Human Tasks widget.
 - b. Click Configure.
 - c. In the Monitoring Model field, select Global HT MM (All Versions).
 - d. Add Task Name Dimension to the Row dimensions box.
 - e. Add Task Owner Dimension to the Column dimensions box.
 - f. Add Measures Dimension to the Page dimensions box.

onitoring Model:		Monitoring context:	
Plobal HT MM (All Versions)	9	Global HumanTask 💌	
vailable dimensions		Row dimensions	
Fask Status Dimension Fask Kind Dimension Fask Expiry Dimension Fask Suspended Dimension Fask Escalated Dimension Fask Parent ID Dimension		Task Name Dimension	
ask Waiting For Subtask Dimension			
ferminationTime		Column dimensions*	
		Task Owner Dimension	
		l Page dimensions Measures	_
	>		

g. Click **OK**. The Dimensions view displays the instances count based on the task name and task owner.

le Edit View Bookmarks Data Chart Tools Help		
		-
■ ⁽ ⁽ ^{(⁽ ⁽ ⁽ ⁽ ⁽ ⁽ ⁽ ⁽ ⁽ ⁽ ⁽ ⁽ ⁽ ⁽⁾}		
		_
aasuras instancesCount +		
		-
<u> </u>	All Task Task Name Dimension Owner	
20-	Task Name Dimension Owner Dimension	
	All Task Task Name Demonsion All Task Owner Dimension All Task Name Dimension 7	
	All Task Name Demonston Owner Dimension All Task All Task Name Demonston 11 7	
All Task Owner Dimension	All Task Name Demonsion All Task Owner Dimension All Task Name Dimension 14 7	A STATE OF S
All Task Owner Dimension Task Owner Dimension	All Task Owner Dimension All Task Name Dimension 14 7	

h. You can double-click **All Task Name Dimension** and select **All Task Owner Dimension** to drill down for more detailed data.

Dimensions				w
File Edit View Bookmarks Data Chart Tools Help				
▣ ʰ ϕ • ♡ • ᡎ ᡚ ᡚ ?				
nti Down 🔹 🖓 🗄 🌆 📶 🖬				
leasures InstancesCours 🔍			-	
	Task Name Dimension 👘 😳	All Task Owner Dimension	admin 🐦	
	All Task Name Dimension 1	7	7	
	ReviewOrder_InputCriterion 14	4	4	
0	ShipOrdertoCustomer_InputCriterion 1.	3	3	
admin Task Owner Dimension / ReviewOrder_InputCriterion # ShipOrdertoCustomer_InputCriterion	entroper any restored			

- 8. Add a dynamic KPI to the business space:
 - a. Click the C & T KPI and Alerts link to open the page.
 - b. Click Add Widgets and enter KPI Manager. Drag the KPI Manager item to the page, underneath the Alerts widget.
 - c. For the model, select **OrderHandling**.

KPI Manager		* I D				
Actions	Model: OrderHandling		Yersion:	Version: Latest		
KPI Name	Created	Owner	Type	Access		
Average Process Duration	Modeled		Aggregate	Shared		
 Percentage of Orders Shipped 	Modeled	-	Expression	Shared		
 Shipped Orders 	Modeled	10	Aggregate	Shared		
 total number of orders. 	Modeled	2	Aggregate	Shared		

- d. Click Actions and select the New Expression KPI.
- e. For the name of the KPI, enter Declined Orders.
- f. For the model associated with the KPI, select OrderHandling.
- g. For the type of access, select **Shared** so that other users can see the new KPI.

New Ex	pression KPI	Properties	s	
Name	Definition	Range	Other	Preview
* KPI nai	me:			
Declined	d Orders			
Descript	ion:			
Model as	ssociated with	i KPI:		
OrderHa	Indling			~
Access: Per Sha	sonal ired			

- 9. Create the expression for the new Declined Orders KPI:
 - a. Select the **Definition** tab.
 - b. Use the KPI drop-down list to select Total Number of Orders and click Insert.
 - c. Use the Operator drop-down list to select the minus symbol (-) and click Insert.
 - d. Use the KPI drop-own list again to select Shipped Orders and click Insert.

New Ex	pression KP	Propertie	s								
Name	Definition	Range	Other	Preview							
Specifyt	he expressio	n that will d	iefine the l	(Plivalue:							
KPI:											
Shippe	ed Orders				Insert						
User-de	fined function	s.									
	inite a remember	5.		_	Insert	1					
Operato	r.	_									
-		nsert									
Specify	the expressio	n that will o	lefine you	KPI:							
Tota	1_Number_d	of_Order	s - Sh	ipped_Or	ders						

- e. Click Apply.
- f. Select the Range tab.
- g. For Range definition, select Numerical.
- h. Add two rows by clicking Add row and entering the following values:
 - In the first row, enter low declined orders for the range name, 0 for the start value, 2 for the end value, green for the color, and the check mark in the green square for the icon.
 - In the second row, enter high declined orders for the range name, 2 for the start value, 5 for the end value, red for the color, and the down arrow in the red circle for the icon.

Click OK.

Range definition: Numerical Percentage					
Range Name	Start Value	End Value	Color	lcon	Delete
low declined orders	= 0	< 2		~	9
high declined orders	= 2	≈ 5		0	<u>D</u>
Add row Copy from	template				

- i. Click **Configure** on the **KPIs** widget.
- j. Expand **OrderHandling** and select **Declined Orders** and then click **OK**. The newly created KPI is added to the KPIs widget.

Chapter 4. Running the sample

You can run the sample from the provided artifacts if you did not build the sample from the tutorial.

- 1. Import the provided project interchange file. There are two options for completing this step, choose the method that best suits you.
 - a. Start WebSphere Integration Developer V6.2 and create a new workspace for this sample, for example C:\Documents and Settings\Administrator\IBM\wid6.2\ClipsAndTacks. Do not select Use this as the default and do not ask again because it is easier to come back to this window if it is not selected. Click OK.
 - b. If you accessed this documentation through the Samples and Tutorials Gallery, return to the gallery now and use the button to import the complete application, then continue on to step 2.
 - **c**. If you accessed this document through a web browser, follow the steps in Chapter 5, "Download and import samples," on page 141
- 2. Follow the steps described in "Setting up the Lotus Forms Server API workspace" on page 57.
- **3**. Follow the steps described in "Identifying WebSphere Monitor Server on WebSphere Process Server ports" on page 70
- 4. Follow the steps in "Creating a WebSphere Business Services Fabric project" on page 70.
- 5. Follow the steps described in "Updating the web services endpoint URLs" on page 85, and be sure to complete the governance step at the end.
- 6. Deploy the monitor model J2EE projects. Follow the steps described in the "Generating executable artifacts for the monitor model and deploying to the server" on page 122. Note that when generating the J2EE artifacts, you will have to overwrite existing artifacts so be sure to select the checkbox.
- 7. Follow the steps in "Configuring WebSphere Business Monitor for business situation events" on page 123.
- 8. Follow the steps in "Setting up access to the OrderHandling monitor model" on page 126.
- 9. Import the provided clipsandtacks.data file into Business Space powered by WebSphere.
 - a. In WebSphere Integration Developer, click **Windows** → **Preferences** → **General** → **Web Browser**. The default browser might be **Internal Web Browser**, but this one does not have all of the functions that you require. Select **Default system Web browser** or another listed browser other than the internal browser and select **Use external Web browser**. Click **OK**.

type filter text Image: Constraint of the second of the	Internet Explorer	A set of the set
General Appearance Appearance Capabilities mary Compare/Patch Cu Content Types Content Types Cu Cu Content Types Cu Cu Content Types Cu Content Types Cu Cu Content Types Cu Cu Content Types Cu Cu Content Types Cu Cu	remove, or edit installed Web browsers. selected Web browser will be used by default when Web pages are opened, athough som always use the external browser. Jse internal Web browser rnal Web browsers: Default system Web browser Firefox with Firebug Firefox Internet Explorer	New Edt Search
Semples RunDebug Samples and Tutorials Settings Service Policies Service Registries Team Web Services		
	Restore Defaults	s Apply

- b. In WebSphere Integration Developer, in the Servers view, right-click the WebSphere Business Monitor Server V6.2 server and select Launch → Business Space. (If a Security page displays, select the option to continue to the Web site or add this connection as an exception, depending on the browser being used.)
- c. When prompted, enter admin for the user ID and enter admin for the password (or the administrator ID and password if you have changed it). A Business Space Manager window opens.

More Business Space Help Topics Concepts Business Space Hanager The open business space Showcases Vidgets
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10. Click Manage Business Spaces. The new page contains two default business spaces: Solution Management and Welcome (which has a few sample pages).

Your Business Space
Business Space Manager
👕 🖹 📮 E. Group by Business Space 💌 Search 🔍
Better Lender Space Owned by admin admin Pages: 6 The Getting Started module of IBM WebSphere Business Monitor V8.2 uses Better Lender space to introduce you to the different Business Monitoring widgets. By following the instructions described in Get
ClipsAndTAcks Owned by admin admin Pages: 1
C & T Tasks Dwned by admin admin
The State of the System Administrator Pages: 1
Getting Started Dwned by System Administrator Provides introductory information about Business Space

- 11. Import the provided clipsandtacks.data file.
 - a. Click the **Import Business Space** icon **Imp**. Click **Browse** and navigate to the directory where the clipsandtacks.data file is located.

Import Business Space	×
Select a file to import	
c:\clipsandtacks.data	Browse
	OK Cancel

- b. Click OK.
- 12. To run the sample, complete the following steps:
 - a. Follow the steps described in "Testing the initial shipping policies" on page 89.

- b. Follow the steps described in "Testing the Order Handling business process" on page 128 and select the C & T Instances and Diagrams, C & T KPI and Alerts and C & T Human Tasks and Dimensions pages to monitor the deployed process.
- 13. View the business dashboard.
 - On the C & T Instances page you can see a record of each test you ran.
 - On the C & T KPI and Alerts page you can see gauges representing the average process duration and the percentage of orders shipped, as well as an alert for the percentage of orders shipped below the threshold of 85%.
 - On the C & T Human Tasks and Dimensions page you can see each human task with its current status and in the dimensions widget a graphical representation of the tasks that you can drill down to view additional details.
Chapter 5. Download and import samples

This section provides links to artifact files needed to complete the tutorial and build the sample application, and also guidance on the three different starting points.

This sample uses the WebSphere Business Process Management Products in the following order

- 1. WebSphere Business Modeler
- 2. WebSphere Integration Developer
- 3. WebSphere Business Services Fabric
- 4. WebSphere Business Monitor
- 5. Business Space Powered by WebSphere

There are three paths through the tutorial. The required files and the starting points in the documentation are as follows:

- 1. Start in WebSphere Business Modeler
 - a. Download the file Download/BIY_StartInModeler.zip. This contains the following artifact files:

Order.xsd

The XML schema to be used in WebSphere Business Modeler.

Order.xfdl

The Lotus® form used in this tutorial. It is imported in WebSphere Business Modeler.

ClipsAndTacksEndpoints.zip

Web service endpoints to be called by WebSphere Business Services Fabric. These are not really Business Process Management artifacts, but rather external artifacts necessary to run the application.

CancelOrderandSendNotificationImpl.java

The Java file used to generate notifications. It is the implementation for one of the components in the WebSphere Integration Developer.

CreditRating.java

The Java file used to check the customer account status. It is the implementation for one of the components in the WebSphere Integration Developer.

ContextExtractorImpl.java

A file used by the Dynamic Assembler component in Websphere Integration Developer to extract data from the incoming request and pass it to Websphere Business Services Fabric.

ClipsAndTacks-Core_ontology.fca

Custom ontology (vocabulary) required for Websphere Business Services Fabric.

ClipsTacks_initial_scenario-owl.zip

WebSphere Business Services Fabric repository project.

DeclinedOrderEvent.xsd

An XML schema for the Declined Order event that is monitored in Websphere Business Monitor.

LateAverageOrderShippedEvent.xsd

An XML schema for the Order Fulfillment event that is monitored in Websphere Business Monitor.

ClipsAndTacksF1.mar

The completed process model in WebSphere Business Modeler.

- b. Extract the files into a convenient local directory.
- c. Proceed to Chapter 3, "Build it yourself," on page 11 of the documentation.

2. Start in WebSphere Integration Developer

a. Download the file Download/BIY_StartInWID.zip. This contains the following artifact files:

ClipsAndTacksF1.mar

The completed process model in WebSphere Business Modeler.

ClipsAndTacksF1.zip

The modeler model formatted for import into WebSphere Integration Developer.

ClipsAndTacksEndpoints.zip

Web service endpoints to be called by WebSphere Business Services Fabric. These are not really Business Process Management artifacts, but rather external artifacts necessary to run the application.

CancelOrderandSendNotificationImpl.java

The Java file used to generate notifications. It is the implementation for one of the components in the WebSphere Integration Developer.

CreditRating.java

The Java file used to check the customer account status. It is the implementation for one of the components in the WebSphere Integration Developer.

ContextExtractorImpl.java

A file used by the Dynamic Assembler component in Websphere Integration Developer to extract data from the incoming request and pass it to Websphere Business Services Fabric.

ClipsAndTacks-Core_ontology.fca

Custom ontology (vocabulary) required for Websphere Business Services Fabric.

ClipsTacks_initial_scenario-owl.zip

WebSphere Business Services Fabric repository project.

DeclinedOrderEvent.xsd

An XML schema for the Declined Order event that is monitored in Websphere Business Monitor.

LateAverageOrderShippedEvent.xsd

An XML schema for the Order Fulfillment event that is monitored in Websphere Business Monitor.

ClipsAndTacksF1_Completed.zip

The completed process model and monitor projects, to be imported into WebSphere Integration Developer

- b. Extract the files into a convenient local directory.
- c. Proceed to "Integration development" on page 55 of the Build It Yourself documentation.
- 3. Start with the complete WebSphere Integration Developer process, modeler model, and business space
 - a. Download the file RunTheSample.zip. This contains the following artifact files:

ClipsAndTacksF1_Completed.zip

The completed process model and monitor projects, to be imported into WebSphere Integration Developer

ClipsAndTacksF1_Monitor.zip

The monitor model to be imported into WebSphere Integration Developer for further development

ClipsAndTacksEndpoints.zip

Web service endpoints to be called by WebSphere Business Services Fabric. These are not really Business Process Management artifacts, but rather external artifacts necessary to run the application.

ClipsAndTacks-Core_ontology.fca

Custom ontology (vocabulary) required for Websphere Business Services Fabric.

ClipsTacks_initial_scenario-owl.zip

WebSphere Business Services Fabric repository project.

clipsandtacks.data

A pre-built business space for the ClipsAndTacks scenario

- b. Extract the files into a convenient local directory.
- c. Complete the steps in "Importing the completed model into WebSphere Integration Developer"
- d. Proceed to Chapter 4, "Running the sample," on page 137 of the documentation.

There are three additional files available for individual download as follows:

ClipsAndTacks.pdf

The documentation for running the sample in a book format that you can print

ClipsAndTacksF1.mar

The completed process model to be imported into WebSphere Business Modeler

Use the instructions in "Importing the completed process model into WebSphere Business Modeler" to import the model into WebSphere Business Modeler.

ClipsAndTacksF1_Completed.zip

The completed process model and monitor projects, to be imported into WebSphere Integration Developer

Use the instructions in "Importing the completed model into WebSphere Integration Developer" to import the model into WebSphere Business Modeler.

Importing the completed process model into WebSphere Business Modeler

The completed process model is in the ClipsAndTacksF1.mar file.

To import the ClipsAndTacksF1.mar file, complete the following steps:

- 1. Start WebSphere Business Modeler with a new workspace.
- 2. Right-click the white background of the Project Tree panel and select Import.
- 3. Select WebSphere Business Modeler project (.mar, .zip) and click Next.
- 4. Click **Browse** and select the directory where the ClipsAndTacksF1.mar is saved.
- 5. Select ClipsAndTacksF1.mar and click Finish.

Importing the completed model into WebSphere Integration Developer

The completed process model, monitor model, and WebSphere Business Services Fabric endpoints for importing into WebSphere Integration Developer are included in the ClipsAndTacksF1Completed.zip file.

To import the ClipsAndTacksF1Completed.zip file, complete the following steps:

- 1. Start WebSphere Integration Developer with a new workspace.
- 2. Click File → Import → Other → Project Interchange and click Next.
- **3**. For **From zip file**, click **Browse** and select the directory where the ClipsAndTacksF1Completed.zip is saved.

4. To import everything, click **Select All** and then **Finish**.