

Chapter 4

Defining business services

A **business service** represents a business function that can be composed with other business services to create a solution. In the next chapter, when you look at the definition of the process flow for an application, the business services you defined here are used as the tasks that make up the discreet steps in the flow.

A business service encapsulates one or more **process variations**. A process variation represents a distinct implementation approach for a business service. Policies can then be created that define which variation to use at runtime based on the business context surrounding a given invocation of the process.

For example, in your scenario, underwriting is one of the high-level steps that make up the process for auto loans origination. Based on the loan amount for a given loan application, you want to select between an automated fast-track underwriting or more expensive manual processing. Instead of hard-coding the branching logic in your loans origination process, you represent this step in your application flow as an underwriting task and define the logic about which variation to use with policies.

Business services are designed to be reused in more than one process. At a bank, several different processes might involve the business function of underwriting. Instead of modeling, assembling, deploying, and managing this function in every such process, it is possible to re-use a business service and manage business or process-specific differences in how it should function with policies.

Also, when a new way of doing business needs to be introduced, such as rolling out an automated or outsourced approach for an in-house human-centric function, it is easier to model, assemble, and deploy a new variation than it is to go back to the drawing board for every process to work in the new decision logic.

In this chapter, you will follow Loretta as she defines the four business services that are used for Auto Loans Origination at Better Financials. Defining a business service involves listing the known process variations, modeling the inputs and outputs of the business service using vocabulary concepts, and defining business service policies.

Defining the Check Credit business service

1. Go back to the “Getting Started” page by clicking the appropriate tab and then click the “Start working with business services” link.

Getting Started with WebSphere Business Services Fabric Authoring

Getting Started with WebSphere Business Services Fabric Authoring

You can create and update artifacts used by WebSphere Business Services Fabric to control the performance of your applications through defined policies. There are three main types of artifacts through which you can work with policies:

- Business applications
- Business services
- Vocabularies

How do I create and update business applications?

A business application describes the flow of business services to provide a business solution. Creating and updating an application consists of graphically assembling the business services into a flow and defining policies to dynamically control the behavior of the business services when they run within the business application.

[Start working with applications](#)

How do I create and update business services?

A business service is a representation of a business function. Creating and updating a business service consists of defining its inputs and outputs, its variations, and the policies that determine which variation to use according to the inputs, the outputs, and other context data.

[Start working with business services](#)

How do I create a vocabulary?

A vocabulary defines the terms used by business services and policies. Creating and updating a vocabulary consists of identifying the channels, roles, and generic business concepts that form the definition of all business applications, business services, and policies.

[Start working with vocabularies](#)

The Big Picture

WebSphere Business Services Fabric is only one product in the Business Process Management portfolio. Other products within the portfolio can enhance your use of WebSphere Business Services Fabric:

- WebSphere Business Modeler provides you with a way of graphically defining business processes that integrate WebSphere Business Services Fabric services.
- WebSphere Process Server provides the runtime environment for WebSphere Business Services Fabric and the Business Space component.
- WebSphere Integration Developer provides a development environment (including tooling extensions such as WebSphere Business Services Fabric Composition Studio) for implementing business services.

Tell me more...

[WebSphere Business Services Fabric](#)

[Business Space powered by WebSphere](#)

2. Click the “Actions” button and select “New Business Service”

Actions

- [New Business Service...](#)
- [Delete Business Service...](#)
- [Add Business Service to Space...](#)
- [Remove Business Service from Space...](#)

3. Fill in these details and click "OK"

Create New Business Service [X]

Name: *

Description:

Tags:

Select a change set

Use existing:

Create new:

Name: *

Description:

OK Cancel

4. Click "Check Credit" in the Business Service Browser to open the Business Service details page.

5. Edit the service by clicking the edit icon to the right of the overview.

The screenshot shows the 'Business Service Details' page for a service named 'Check Credit'. The page is divided into a left sidebar and a main content area. The sidebar contains a dropdown menu with 'Check Credit' selected, and three expandable sections: 'Overview' (highlighted in orange with an edit icon), 'Business Service Policies' (with an 'add' link), and 'Business Service Variations' (with an 'add' link). The main content area has a top bar with an 'Edit' button (highlighted with a red box) and the text 'Click to begin making changes to this page'. Below this are several sections: 'General Information' (with fields for Name, Description, Tags, Access, Created, Last modified, and Status), 'External Links' (with 'none'), 'Business Service Inputs and Outputs' (with an empty list), 'Vocabularies Used' (with 'none'), and 'Applications Using This Service' (with an empty list).

6. To add inputs and outputs, click the “add” link to the right of the “Business Service Inputs and Outputs” header.

Save Cancel Active change set: Initial Modeling for Loans Origination Actions

▼ General Information

Name: Check Credit

Description: Automated Credit check

Tags:

Access: Private Public

Created: Mar 25, 2009 2:08:46 AM by lsmith

Last modified: no modifications made

Status: Changes pending (change set: Initial Modeling for Loans Origination)

▼ External Links add

▼ Business Service Inputs and Outputs add

▼ Vocabularies Used

none

The inputs and outputs of a business service are concepts from the vocabulary that represent the data flowing into and out of the business service. These settings are useful in these ways:

- a. The inputs and outputs serve as documentation about the key business domain values that is available as input to a business service and that are available as output.
- b. The inputs are used to determine the set of concepts that are available when crafting policies. Since policies only support concepts that represent a simple data value, the system will traverse the "has" relationships of an object concept to determine the data items that is available at runtime.
- c. When imported into Modeler, vocabulary concepts are converted into Business Items that are represented as the business inputs and outputs for the process flows that are created to represent each process variation. If the Modeler export to WebSphere Integration Developer is used, these business items will ultimately be converted to the service interfaces available in that environment.

To keep things simple, you will use your Loan Application object concept created in the last chapter as the input and output of every business service you will create for the loans origination process.

7. Fill in these details and then click the "Save" button
Note: Notice that the "Vocabularies Used" section is filled in automatically when you click "Save"

Business Service Inputs and Outputs			add
<i>Click to set a name for this input or output</i>	<i>Click to choose a business concept</i>	input	
Business Service Inputs and Outputs			add
loanApplication	Loan Application	input	
loanApplication	Loan Application	output	

For the Check Credit business service, you will only create a single variation to represent an automated credit check.

8. Add a variation by clicking the “add” link next to “Business Service Variations”.

Business Service Details

▼ **Overview**

Overview ✎

▼ **Business Service Policies** add

none

▼ **Business Service Variations** add

none

9. Fill in these details and click “OK”

The screenshot shows a dialog box titled "Create New Business Service Variation". It has a close button in the top right corner. The dialog is divided into two main sections. The first section is for creating a new variation, with a "Name:" label and a text box containing "Automated Credit Check". Below it is a "Description:" label and an empty text box. The second section is for selecting a change set, with a "Select a change set" label. It has two radio buttons: "Use existing:" (which is selected) and "Create new:". The "Use existing:" option has a dropdown menu showing "Initial Modeling for Loans Origination". Below this, there are "Name:" and "Description:" labels with empty text boxes. At the bottom right, there are "OK" and "Cancel" buttons.

Next, you will create your first **Business Service Policy** to establish a default process variation for the Credit Check business service. Policies have a “FOR – WHEN—THEN” syntax.

The FOR clause, or scoping statement, associates or scopes the policy to an element of your loans process. In this case, “FOR Check Credit” says that this policy is considered whenever the Check Credit business service is invoked. Note that the scoping statement does not restrict the policy to any given application. Policies created at the business service level are considered wherever the business service is used. In the next chapter, you will discuss application-scoped policies which are specific to your Loans Origination process.

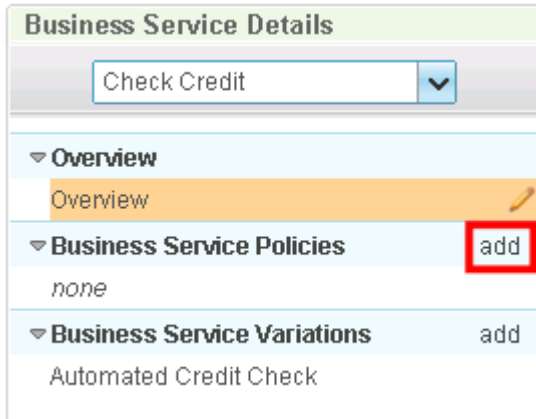
The “WHEN” clause expresses the business situation in which a policy should apply. The policy editor lets the user construct a Boolean expression expressed in terms of vocabulary concepts. These concepts are limited to those that are represented as inputs of the business service indicated in the scoping statement.

The “THEN” clause represents what should happen when the condition represented by the “WHEN” clause is satisfied. There are two different kinds of results that can be specified. First, a result can determine which process variation should be selected. Second, a value for a vocabulary concept can be established as a business parameter that controls how the selected variation should behave.

Each time a business service is invoked, the system will determine all of the policies that apply and merge them into a single composite policy. This policy is then used to establish which variation of the business service to select and what business parameters

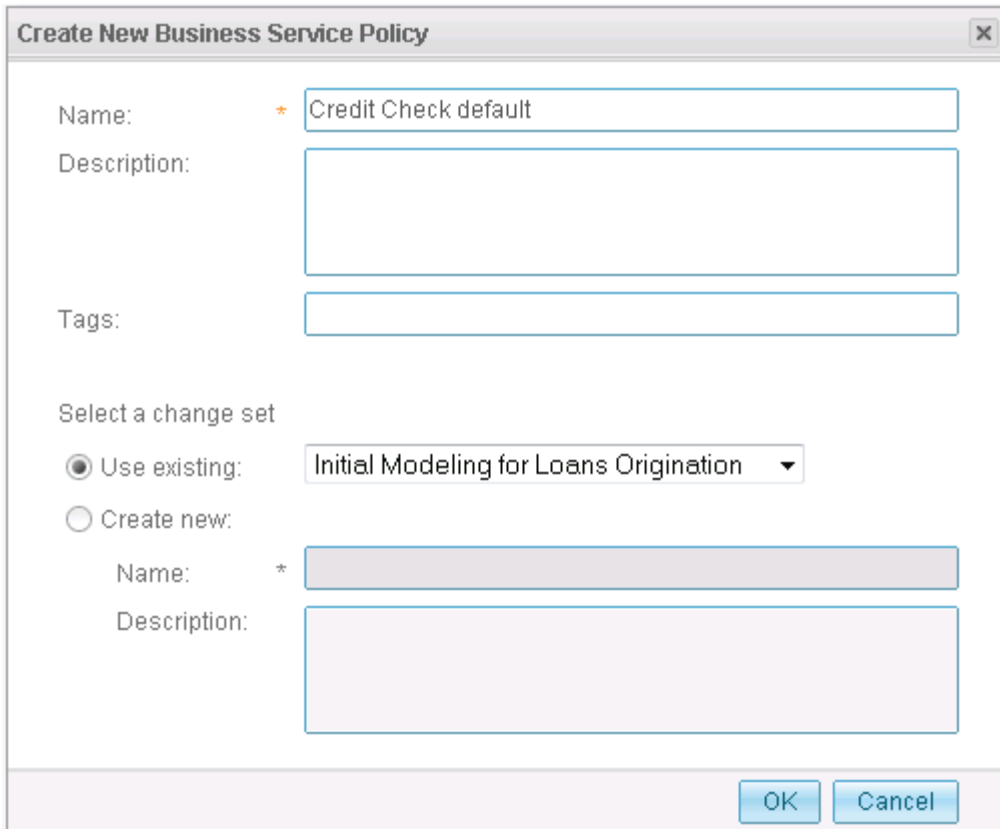
are established for that invocation of the business service. These parameters are designed to be consumed by the technical implementation of a variation to affect the behavior of the business service.

10. Add a new policy by clicking the “add” link to the right of the “Business Service Policies” header



The screenshot shows a web interface titled "Business Service Details". At the top, there is a dropdown menu with "Check Credit" selected. Below this, there are three main sections: "Overview", "Business Service Policies", and "Business Service Variations". The "Business Service Policies" section is currently selected and shows "none" with an "add" link highlighted by a red box. The "Business Service Variations" section shows "Automated Credit Check" with an "add" link.

11. Fill in these details and click “OK”



The screenshot shows a dialog box titled "Create New Business Service Policy". It contains the following fields and options:

- Name:** * Credit Check default
- Description:** (empty text area)
- Tags:** (empty text area)
- Select a change set:**
 - Use existing: Initial Modeling for Loans Origination
 - Create new:
- Name:** * (empty text field)
- Description:** (empty text area)

At the bottom right, there are "OK" and "Cancel" buttons.

12. Edit the policy by click the “Edit” button at the top of the details area

The screenshot shows the 'Business Service Details' page for 'Check Credit'. At the top, there is a dropdown menu set to 'Check Credit' and an 'Edit' button highlighted with a red box. Below this is a navigation pane with sections: 'Overview', 'Business Service Policies' (containing 'Check Credit default' with a red checkmark and 'X' icon), and 'Business Service Variations' (containing 'Automated Credit Check'). The main content area is divided into three sections: 'General Information' (Name: Check Credit default, Description: none, Tags: none, Created: Mar 25, 2009 9:57:53 AM by Ismith, Last modified: no modifications made, Status: Changes pending (change set: Initial Modeling for Loans Origination)), 'External Links' (none), and 'Policy Details' (Effective Date, Expiration Date, Priority: 0, For: Check Credit, When, Then).

13. Add a “Then” clause by clicking the “(No results, click to add)” link. Select the “Select a process variation” radio button, and make sure the “Automated Credit Check” variation is selected in the dropdown. Click “OK” to create the result.

The screenshot shows the 'Create Result' dialog box. On the left, there are two radio buttons: 'Assign a value to a concept' (unselected) and 'Select a process variation' (selected and highlighted with a red box). Below the selected radio button, there is a 'Business Service' field set to 'Check Credit' and a 'Service Variation' dropdown menu set to 'Automated Credit Check'. On the right, a 'Concept Search' panel is open, showing a search input field and a list of concepts: Amount of Loan, Collateral, Credit Check Type, Credit Score, Customer Name, Line of Business, Loan Application Date, Loan Final Review Date, Loan Status, New Customer, and Premium Credit Check. A 'Select Concept' button is at the bottom of the search panel. At the bottom of the dialog box, there are 'Ok' and 'Cancel' buttons.

This policy says that whenever the check credit business service is invoked, it should use the “Automated Credit Check” variation. Since this is the only variation in existence, the policy is not strictly necessary, but it is a good practice to define a default variation

for a business service.

The screenshot shows a web-based configuration interface for a policy. At the top, there are buttons for 'Save' and 'Cancel', and a dropdown menu for 'Active change set' set to 'Initial Modeling for Loans Origination'. Below this is a section titled 'General Information' with fields for 'Name' (Check Credit default), 'Description', 'Tags', 'Created' (Mar 25, 2009 9:57:53 AM by lsmith), 'Last modified' (no modifications made), and 'Status' (Changes pending (change set: Initial Modeling for Loans Origination)).

Below 'General Information' is a section titled 'External Links' with an 'add' button. Below that is a section titled 'Policy Details' with fields for 'Effective Date', 'Expiration Date', and 'Priority' (0). Under 'Policy Details', there are three rows: 'For' (Check Credit), 'When' ((No conditions, click to add)), and 'Then' (Select Automated Credit Check in Check Credit).

14. Click "Save" to finish the policy

The business wants to use policies to control whether a given request will perform a credit check by utilizing an internal backend service that takes advantage of the banks internal customer credit records, or whether it should spend the money to use an external service from one of the credit agencies. In the last chapter, the *Credit Check Type* concept was introduced to represent that the concept of INTERNAL versus THIRD-PARTY credit checks.

Assume that there is a higher cost associated with using one of the credit agencies, but it is known for providing higher quality credit reports. The business wants to optimize their use of the more expensive, yet higher quality service. The *Premium Credit Check* concept was introduced so that it can also be used as a parameter to influence the behavior of the Automated Credit Check variation.

15. Create a new Policy with the name “Internal Credit Check by Default” and give it this description:
“Policy sets the internal credit check service as the default. Applications can override this to go to an external service”.
16. Edit the policy and fill in these THEN clause:

Create Result

Assign a value to a concept

Concept: Credit Check Type

Value: Internal

Select a process variation

Business Service: Check Credit

Service Variation: Automated Credit Check

Concept Search

Type to filter

- Amount of Loan
- Collateral
- Credit Check Type**
- Credit Score
- Customer Name
- Line of Business
- Loan Application Date
- Loan Final Review Date
- Loan Status
- New Customer
- Premium Credit Check

Select Concept

Ok Cancel

Create another policy that establishes when to flag a request for a Premium Credit Check. The business decides that the loan amounts greater than \$25,000 warrant the added scrutiny.

17. Create a new policy with the name “Premium Credit Check Requirement”.
18. Add a “When” clause by clicking the “(No conditions, click to add)” link. You will see a “Create Condition” dialog. Change the “Field Name” to “Amount of Loan”, the “Comparator” to “is greater than”, and “Value” to “25000”. Click “OK” to create the condition.

Create Condition [X]

Condition: [] [v]

Field Name: Amount of Loan [v]

Comparator: is greater than [v]

Value: 25,000 [] USD

[Ok] [Cancel]

19. Fill in these Then clause

Edit Result [X]

Assign a value to a concept

Concept: Premium Credit Check

Value: True [v]

Select a process variation

Business Service: Check Credit

Service Variation: Automated Credit Check [v]

Concept Search

Type to filter []

- Amount of Loan
- Collateral
- Credit Check Type
- Credit Score
- Customer Name
- Line of Business
- Loan Application Date
- Loan Final Review Date
- Loan Status
- New Customer
- Premium Credit Check

[Select Concept]

[Ok] [Cancel]

The resulting policy should now read:

FOR Check Credit,
 WHEN Amount of Loan(USD) > 25,000,
 THEN Set Premium Credit Check = True

Defining the Review Collateral business service

For the remaining business services, you will use the techniques that you used to define Check Credit. You can use the drop down on the upper left corner of the Business Service Details page to show details for different business services within this authoring space.

1. Create a new business service named “Review Collateral” with the description:
Review collateral information to ensure coverage of the loan.
2. Define the inputs and outputs in the same manner as for Check Credit. Loan Application in, and Loan Application out.
3. Create two process variations.
 - a. No Collateral Review
 - b. Human Collateral Review
4. You want to default to a human review of collateral, so create a new policy named “Review Collateral “ that will read:
FOR: Review Collateral,
WHEN :
THEN: Select Human Collateral Review in Review Collateral

Defining the Final Review business service

1. Create a new business service named “Final Review” with the description:
Review loan risk and decide whether to approve or reject the loan.
2. Define the inputs and outputs of the Business Service in the same way as Check Credit.
3. Create two process variations
 - a. Automated Underwriting
 - b. Human Underwriting
4. You want to establish Human Underwriting as the default, so create a new policy named “Final Review Default” that will read:
FOR : Final Review
WHEN:
THEN: Select Human Underwriting in Final Review

Defining the Notify Customer business service

1. Create a new business service named “Notify Customer” with the description:
Notify customer of the status of the loan.
2. Define the inputs and outputs as done for the other business services.
3. Create two process variations.
 - a. Automatic Notification
 - b. Human Notification
4. You want to default to automatic notification, so create a policy named “Notify Customer Default” that will read:

a. FOR: Notify Customer

WHEN:

THEN: Select Automatic Notification in Notify Customer