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WebSphere® Business Modeler V6.1

Business rules support



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This presentation will discuss the business rules support that is available with WebSphere Business Modeler V6.1.

Business rules for WebSphere Process Server

- The business rules support that is part of WebSphere Business Modeler V6.1 compliments the business rules feature that is part of WebSphere Process Server V6.1
 - ▶ The target runtime framework is part of WebSphere Process Server V6.1
- A business process with a business rule task is created in WebSphere Business Modeler V6.1
 - ▶ Exported to WebSphere Integration Developer V6.1
 - Implementation details refined
 - ▶ Deployed to WebSphere Process Server V6.1
 - Rules managed by the business rules manager, Web application.

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Business rules support

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The business rule support that is available with WebSphere Business Modeler V6.1 is closely integrated with WebSphere Integration Developer V6.1 and WebSphere Process Server V6.1.

When a modeling project that contains business rules is imported into WebSphere Integration Developer V6.1, they are available to the integration developer completing the implementation. The business process is then deployed to the WebSphere Process Server runtime where there is a business rules framework that enables the business analyst to manage the rules.

Even if you're not modeling to create an executable business process, the business rules can be used in your models, capturing valuable information about your business processes.

What is a business rule

- A business rule is anything that captures and implements business policies and practices.
 - ▶ A rule can enforce business policy, make a decision, or infer new data from existing data
- A part of the business logic that can change frequently
 - ▶ Something that does not really require a programming change,
 - which a business analyst can define and manage.
 - ▶ Does not really change the nature of the application.
 - ▶ The logic remains the same, but the values being compared can differ.
- Example:
 - *If the applicant is male and over 25 years old, and the car category is sports, and he has been insured with AutoPlus for the past 5 years, then approve the application for insurance at a fee of \$100 per month*

A business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make a decision, or infer new data from existing data.

Business rules determine the outcome of a process based on the context.

Business rules are used in everyday business situations to make a decision given a specific set of circumstances.

This decision might require many rules to cover all the circumstances.

Business rules within a business process allow applications to respond quickly to changing business conditions.

What makes business rules appealing is that the rules can be changed without redeploying and creating a new version of the entire application. There is a business rules runtime framework that enables the business analyst to manage the business rules.

The example shown here is for an insurance corporation. In this case the general rule for determining what to charge will always be there, but the values which have been underlined might change. There is a different rule for a male under 25 that drives a minivan.

Templates and rules

- Pay attention to the modeling mode
 - ▶ Capabilities are exposed depending on the modeling mode.
 - ▶ Business rules are targeted for the WebSphere Process Server V6.1 runtime environment.
- Business Rule
 - ▶ Simple *if-then* logic that uses data from the input to invoke an action.
- Business Rule Template
 - ▶ To reuse rule conditions and actions or allow their parameter values to be changed in an application at runtime, create a rule template.

From the example with the insurance company, it's easy to see that there is a potential to have many rules that are very similar. This situation is managed with the use of business rule templates. A template provides the common structure for a set of rules that are the same, except for the values used in the comparison.

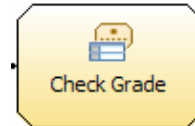
Rule templates give you the flexibility to change the implementation details of a business rule in an application at runtime. For example, you can adjust the rates, age limit, or automobile category in the deployed insurance application.

Rule templates also simplify the creation of rule logic by allowing you to define a rule condition and action that you can reuse with different parameter values to create new if-then rules.

The business rule is the simple if-then logic. The data used by the rule comes from the input message at runtime and the action invoked can update the data that is part of the output message.

Global and local

- A business rule can be either local or global
- Local
 - ▶ Drag and drop the process element from the palette to the canvas
 - ▶ Use the pop-up menu on the canvas
 - ▶ Edited from the attributes view of the containing business process
- Global
 - ▶ Use the pop-up menu from the project navigation tree and fill out the specification sheet.
 - ▶ Use the pop-up menu on the navigation tree
 - ▶ Drag and drop an existing global business rule onto the canvas.
 - ▶ Edited from a global specification sheet.



Both local and global business rules can be created.

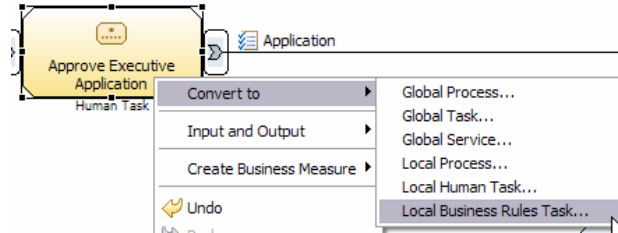
The local business rules are private to the business process in which they are created and the global business rules will have a global scope.

They are easily distinguished on the canvas by their icons.

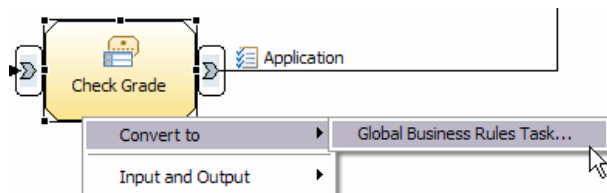
Both local and global business rules are specialized tasks, they are created the same way that a generic task is created in modeler. The property sheets are specialized and to edit a global business rule you use the specification sheet and to edit the local business rule, you use a tab in the attributes view for the business process.

Conversions

- Business rules can also be created by converting...
 - ▶ a generic task to a business rule



- A local business rule can be converted...
 - ▶ to a global business rule.

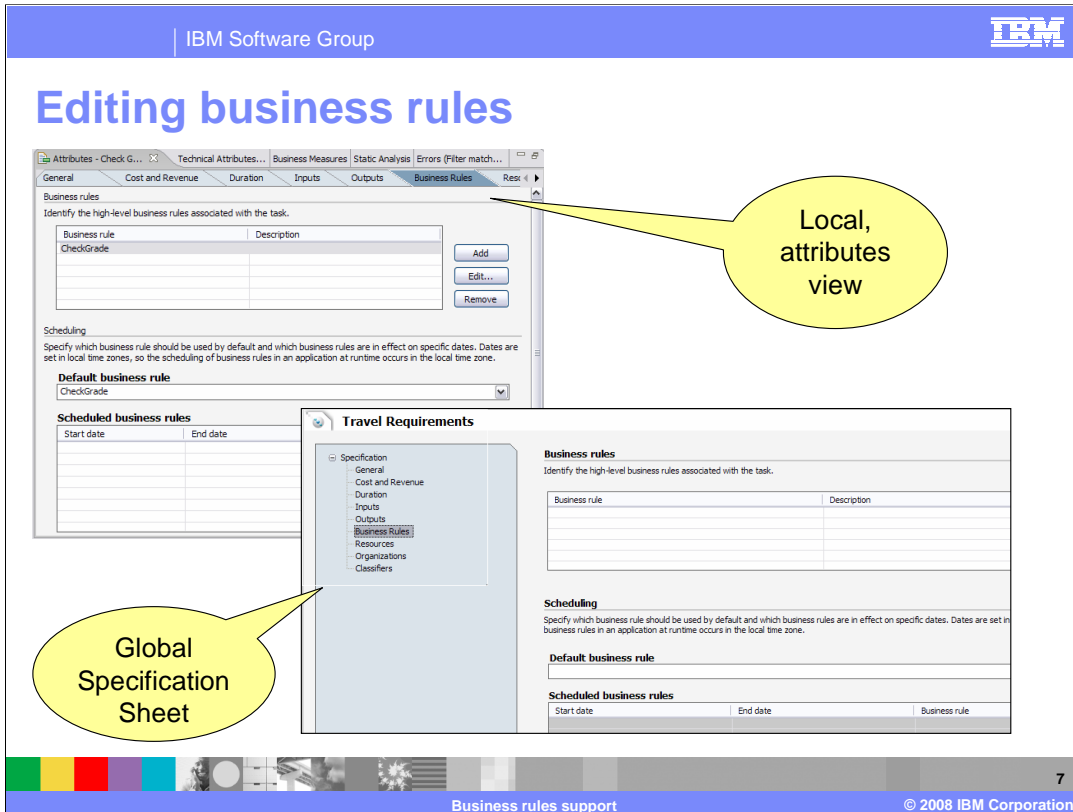


There are some nice conversion utilities available with WebSphere Business Modeler V6.1.

Just bring up the pop-up menu for the task you want to convert by selecting it with right-mouse-click.

The conversion will convert a generic task to a local business rule task.

A local business rule can be further converted to a global rule.



Shown here are the two ways to edit the business rules. Whether it is local or global, once you get to this point, the creation of the rules and templates is the same. They only differ in the way you get to the property sheets.

The business rules and templates

- Create and schedule

Notice that there are two sections.

The first section is for creating the rules and templates.

The second section is where you can schedule one or more rules to be active during a specified time period.

Since there might be a time period when none of the scheduled rules are in effect, you can also specify a default rule that is in effect when no rules are scheduled.

To create a new business rule or business rule template, select the add button in the top section.

Business rule template

- When specifying a business rule template
 - ▶ Give it a good name and meaningful description
 - ▶ Add the rule parameters before adding rule template.
 - ▶ Customize the presentation for the expected user

Specify the rule logic as set of if-then rules
Create or modify one or more if-then rules that define the logic of the business rule. To create rule conditions and actions, the business rules task must have inputs and outputs defined.

Name
Check Grade:1

Description
Is this job applicant a candidate for an executive position?

Important
To generate rule conditions and actions or allow their parameter values to be changed in an application at runtime, create a rule template.

Rule Templates (circled in red) If-Then Rules

Definition
To specify rule conditions and actions, create any required rule parameters. Also ensure that the business rules task has inputs and outputs defined.

Template name	Rule condition	Rule action	Template description
Check Grade Template	('Check Grade.Input.Job.Salary' is greater than or equal ('Check Grade.Output.Job.IsExecutive' is set to True AND ('Check Grade.Input.Job.Position' is equal to 'position')	Check the level of the dt	

Rule parameters
To change parameter values at runtime or add parameters to either the rule condition or action, specify rule parameters. Add constraint information as a description.

Parameter name	Type	Description
salary	Integer (long)	How much do they expect to make
position	Text	What kind of position are they looking for

Rule template presentation
Determine how the rule template is presented to users at runtime for modification of the rule parameter values.

Automatically generate the text for the rule template presentation

Customize the text for the rule template presentation

IF ('Check Grade.Input.Job.Salary' is greater than or equal ('salary') AND ('Check Grade.Input.Job.Position' is equal to 'position') , then 'Check Grade.Output.Job.IsExecutive' is set to True

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Generally when starting out you'll want to create a business rule template first. Select the rule templates tab.

When working with business rules and templates it is important to remember that there are developers further along in the process that will need to complete, test, deploy and maintain the business rules. For this reason it is always a good practice to give the rule a good name and to describe the expected behavior in the description.

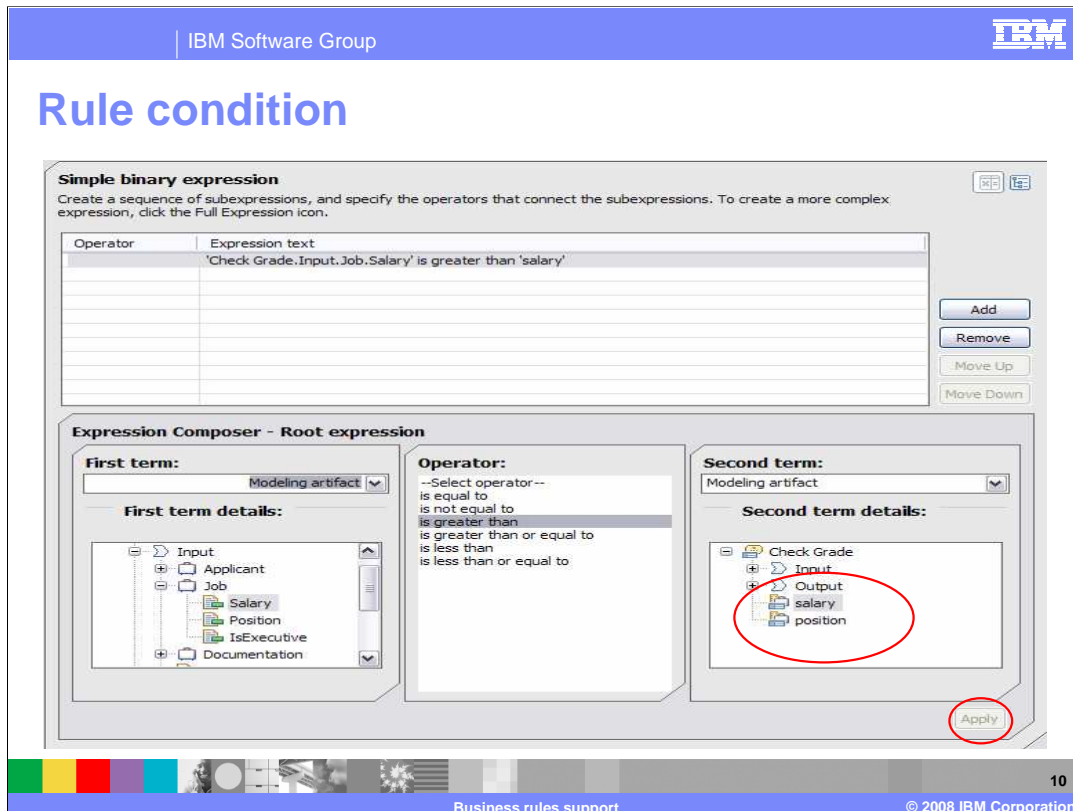
Because the rules use the rule parameters, it is more efficient to create the rule parameters before creating the template. If you create the rule parameters first, they are available as a selectable property when creating the template.

Pressing add will add an item to table but then you will still need to edit the cells in the tables. The table cells are directly editable. To edit a cell, select it with a single right mouse click. You'll be presented with a dropdown box or a button to invoke the expression builder.

After you have created the rule parameters, add the rule.

Besides the name and the description, there are two key parts to the rule template, the rule condition and the rule action.

Customizing the presentation is the last step in creating the business rule template.



Select the cell for the rule condition and pressing the button will invoke the expression builder. This is the standard expression builder found in WebSphere Business Modeler.

Shown here is a completed expression. When the editor is invoked for a new expression it starts out blank. You begin by pressing add and then you'll be able to make selections in the lower panes.

To make complex expressions with multiple clauses, you press add again and a new clause is added, using and as the default operator. You can change the operator by directly editing the cell in the table.

The expression constructed here will take the value of the salary which is part of the input message and compare it with a rule parameter called salary.

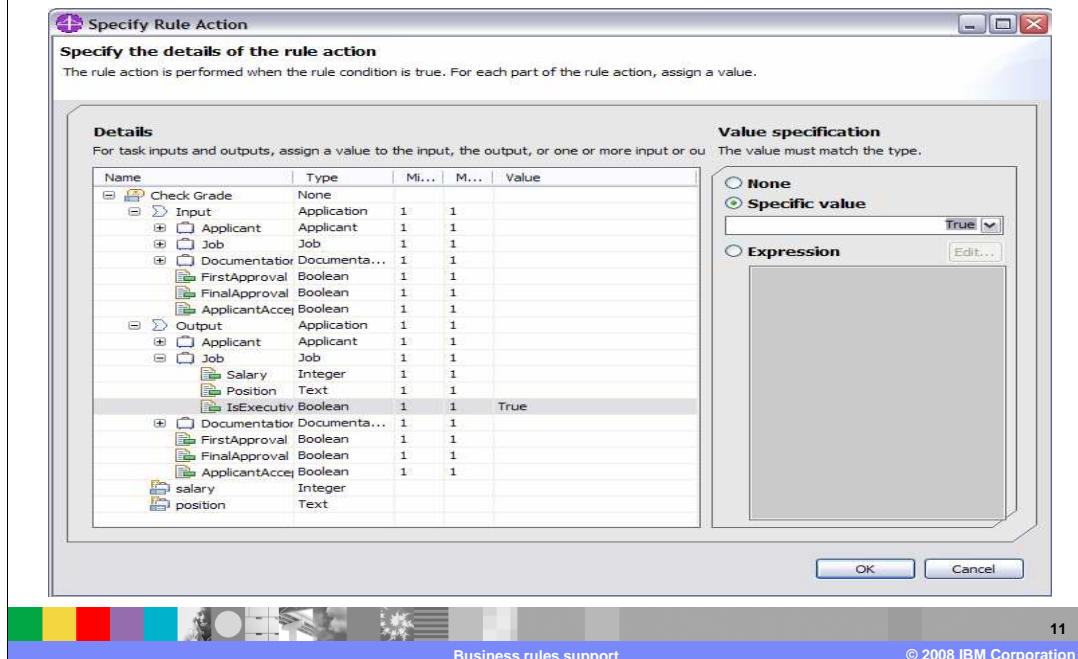
Building the clause for the expression is straightforward. Select what you want for the first term, in this case you want to use a property that is part of the input message so we've selected, modeling artifacts. Then navigate the tree to locate the Salary attribute of the input.

Select the operator in the center, in this case, if greater than.

For the second term you want to select the salary rule parameter, which is also a modeling artifact.

If the rule parameter is not created before creating the rule condition, they will not show up in the list as modeling artifacts.

Rule action



Next create the action to be invoked when the rule conditions are met.

The action editor is similar to the expression builder.

Navigate the tree to locate the modeling artifact you want to work with, then on the right, you can set the value to a specific value, leave it blank, or invoke an expression.

In this case the IsExecutive property is set to true.

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Specifying the rule logic

- Using the template, it's now possible to create a set of rules.

Important
To reuse rule conditions and actions or allow their parameter values to be changed in an application at runtime, create a rule template.

Definition
Select a rule template or define an if-then rule. To create rule conditions and actions, ensure that the business rules task has inputs and outputs defined.

Rule name	Template name	Rule condition	Rule action	Rule description
CTO Rule	CheckGrade.Template	Check Grade.Input.Job.Salary' is greater than 'sa	Check Grade.Output.Job.IsExecutive' is set to Tr	Type the description here.
RM Rule	CheckGrade.Template	Check Grade.Input.Job.Salary' is greater than 'sa	Check Grade.Output.Job.IsExecutive' is set to Tr	Type the description here.

Parameter values
Specify the value of each parameter used in the rule condition and action.

Parameter name	Type	Value	Description
salary	Integer	150000	How much do they expect to make
position	Text	Release Manager	What position are they looking for

Rule presentation
Determine how the if-then rule is presented to users in an application at runtime.

Automatically generate the text for the rule presentation
 Customize the text for the rule presentation

If 'Check Grade.Input.Job.Salary' is greater than 'salary', then 'Check Grade.Output.Job.IsExecutive' is set to True

Buttons: Add Rule, Remove Rule, Move Up, Move Down

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Most of the work has been done when you specified the business rule template.

The dialog shown here is what you'll see when you select the if-Then Rules tab.

It looks very similar to the dialog for specifying the business rule template. Notice the names on the buttons.

There say add rule and remove rule. This is a visual clue to remind you that you're working with rules and not templates.

To create a rule, press the add rule button.

Give the rule a name and then select the template by directly editing the cells in the table.

Once the template has been selected the condition and the action are filled in and all that is left to do is specify the values to be used by the rule parameters.

You might have noticed the buttons to move a rule up or down in the list. This option is available on several of the dialogs for specifying business rules and templates. This is an important feature, as the rules are evaluated sequentially based on their position in the list. It is up to you and the integration developer to ensure the rules fire in a sequence that provides the required behavior.

The presentation

- The information that is presented at runtime can be tailored so it is appropriate to the target audience.

Rule template presentation

Determine how the rule template is presented to users at runtime for modification of the rule parameter values.

- Automatically generate the text for the rule template presentation
- Customize the text for the rule template presentation

If 'Check Grade.Input.Job.Salary' is greater than 'salary',
then 'Check Grade.Output.Job.IsExecutive' is set to True

The default uses a notation familiar to programmers

Rule template presentation

Determine how the rule template is presented to users at runtime for modification of the rule parameter values.

- Automatically generate the text for the rule template presentation
- Customize the text for the rule template presentation

If the expected salary greater than 'salary',
then flag this application as a executive application.

The customized message is more natural.



Remember that the business rules are accessible to business analysts at runtime to make changes by adding, deleting and rearranging them.

When they access the rules using the business rules manager they will see a message that tells them what the business rule does. Here you can customize the message so that it reads in a more natural way, instead of like a computer programming language.

Note, when using a business rule template, you can only edit the presentation from the template.

Summary

- The business rules are now available in WebSphere Business Modeler V6.1
- They mirror and support the functionality available in WebSphere Integration Developer V6.1 and WebSphere Process Server V6.1
- When using the '*recommended export option*', the implementations for the business rules are placed in the business logic module project.

With WebSphere Business Modeler V6.1 you now have the ability to capture key elements of your business processes using business rules.

The business rules you create in WebSphere Business Modeler can be completely specified so that when you export your project to WebSphere Integration Developer you will have business rules that are ready to be deployed.

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