

# **Understanding the Business Rules Method Palette**

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# Understanding the Business Rules Method Palette

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The topics listed here provide reference information about each method that appears in the Method Palette of the Business Rule Designer . Many of these methods are based on standard XPath functions. Refer to the W3C XML Path Language documentation for additional information.

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## Java CAPS Business Rules Method Palette Overview

The Method Palette displays a menu of methods that you can incorporate into your process models to manipulate data in a variety of ways. These methods are grouped logically by the type of function performed. By default, not all methods appear in the Method Palette menus. To view complete lists of operators for each type, click Settings from any of the Method Palette menus. The Method Palette dialog appears, and you can select and deselect functions to indicate which functions should appear in each menu.

To display a method on the Business Rule Designer canvas, click the menu containing the method you want to use and then click the method name or symbol. A method box appears on the canvas, and you can then map the input and output values for the method.

For most of the methods, you can either drag an object from the attributes tree to the method box to enter a value into a parameter, or you can right click a parameter in the method box to add a literal value directly into the box.

# Operator Methods

Operator methods allow you to manipulate data with standard mathematical and comparison operators. To display a complete list of available operator methods, click Operator and then click Settings.

TABLE 1 Operator Methods

Description
The <b>addition</b> method adds the numerical value of <i>number1</i> to the numerical value of <i>number2</i> , and returns the sum.
The <b>AND</b> method returns Boolean true if both <i>boolean1</i> and <i>boolean2</i> are true; otherwise, it returns Boolean false.
<b>Note:</b> Boolean parameters cannot accept values with capital letters. For example, “True” and “TRUE” are not valid Boolean values, but “true” is.
The <b>div</b> method divides the numerical value of <i>number1</i> by the numerical value of <i>number2</i> , and returns the quotient.
The <b>EQUAL</b> method returns Boolean true if <i>object1</i> is equal to <i>object2</i> ; otherwise, it returns Boolean false.
The <b>greater or equal</b> method returns Boolean true if the numerical value of <i>number1</i> is greater than or equal to the numerical value of <i>number2</i> ; otherwise, it returns Boolean false.
The <b>greater than</b> method returns Boolean true if the numerical value of <i>number1</i> is greater than the numerical value of <i>number2</i> ; otherwise, it returns Boolean false.
The <b>lesser or equal</b> method returns Boolean true if the numerical value of <i>number1</i> is less than or equal to the numerical value of <i>number2</i> ; otherwise, it returns Boolean false.
The <b>lesser than</b> method returns Boolean true if the numerical value of <i>number1</i> is less than the numerical value of <i>number2</i> ; otherwise, it returns Boolean false.
The <b>mod</b> method divides the numerical value of <i>number1</i> by the numerical value of <i>number2</i> , and returns only the remainder.
The <b>multiplication</b> method multiplies the numerical value of <i>number1</i> by the numerical value of <i>number2</i> , and returns the product.
The <b>negative</b> method converts the numerical value of <i>number1</i> to its negative. The result is a number having the same absolute value as the input number. For example, if the input is “10”, it is converted to “-10”; if the input is “-10”, it is converted to “10”.
The <b>not equal</b> method returns Boolean true if <i>object1</i> is not equal to <i>object2</i> ; otherwise, it returns Boolean false.
The <b>OR</b> method returns Boolean false if both <i>boolean1</i> and <i>boolean2</i> are false; otherwise, it returns Boolean true.
<b>Note:</b> Boolean parameters cannot accept values with capital letters. For example, “True” and “TRUE” are not valid Boolean values, but “true” is.

TABLE 1 Operator Methods (Continued)

Description
The <b>subtraction</b> method subtracts the numerical value of <i>number2</i> from the numerical value of <i>number1</i> , and returns the difference.

## String Methods

The String methods allow you to manipulate string data. To display a complete list of available string methods, click String and then click Settings.

TABLE 2 String Methods

Description
The <b>bytes to text</b> method decodes a bytes object into text using the specified encoding. If no encoding is specified, the platform's default encoding is used. For a list of possible values for the <i>encoding</i> parameter, see “Encoder Parameter Values” on page 11.
The <b>concat</b> method returns the string created by concatenating the value of the <i>str</i> parameter to the end of the value of the <i>string</i> parameter.
<b>Note:</b> You can add multiple <i>str</i> parameters to the method. The method automatically adds an unmapped node as needed.
The <b>contains</b> method returns Boolean true if the value of <i>string1</i> is contained within the value of <i>string2</i> ; otherwise, it returns false
The <b>convertUnicode</b> method returns the equivalent string value to the Unicode value in the <i>string</i> parameter. The Unicode value can be hexadecimal, octal, or decimal in format. For example, the Unicode number for a new line character is: <ul style="list-style-type: none"> <li>▪ <b>0X00A</b> in hexadecimal format</li> <li>▪ <b>012</b> in octal format</li> <li>▪ <b>10</b> in decimal format</li> </ul> Use this method to insert other special characters, such as spaces, tabs, and so on.
The <b>copy from</b> method allows you to type in an XPath expression as the source of a copy operation. This is useful for entering XPath predicates. When you select <b>copy from</b> , the Copy From dialog box appears for you to enter the XPath.
<b>Note:</b> This feature is for advanced users who are familiar with XPath and BPEL syntax.
The <b>copy to</b> method allows you to type in an XPath expression as the destination of a copy operation. This is useful for entering XPath predicates. When you select <b>copy to</b> , the Copy To dialog box appears for you to enter the XPath.
<b>Note:</b> This feature is for advanced users who are familiar with XPath and BPEL syntax.
The <b>normalize space</b> method removes leading and trailing spaces from the string contained in <i>string1</i> .

TABLE 2 String Methods (Continued)

Description
<p>The <b>starts with</b> method returns Boolean true if the value of <i>string1</i> starts with the value of <i>string2</i>; otherwise, it returns false.</p>
<p>The <b>string</b> method converts the value of <i>object1</i> to a string.</p>
<p>The <b>string length</b> method returns the number of characters in <i>string1</i>.</p>
<p>The <b>string literal</b> method allows you to create a literal string; that is, a sequence of characters of fixed length and content. Type the literal value directly into the method box.</p>
<p><b>Tips:</b></p> <ul style="list-style-type: none"> <li>■ Use <i>Control+Enter</i> to insert a line break in a literal.</li> <li>■ To add a string literal directly into a parameter without using the string literal method, right-click the parameter, and then click <b>Add Literal</b>. Type the literal directly into the parameter field.</li> <li>■ To edit an existing literal from a method, right-click the literal, click <b>Edit</b>, and then modify the value.</li> <li>■ To delete a literal from a method, right-click the literal, and then click <b>Delete Literal</b>.</li> </ul>
<p>The <b>text to bytes</b> method encodes the input text into a sequence of bytes using the specified encoding. If no encoding is specified, the platform's default encoding is used. For a complete list of available values for the encoding parameter, see <a href="#">“Encoder Parameter Values” on page 11</a>.</p>
<p>The <b>substring</b> method returns a substring of <i>string1</i>, with <i>number2</i> indicating the position of the first character in the substring and <i>number3</i> indicating the number of characters to include. <i>number2</i> represents the position of a character from the beginning of <i>string1</i>. If <i>number3</i> is empty, the return string includes the characters from the position indicated by <i>number2</i> to the end of <i>string1</i>.</p> <p>For example, if the parameters are (“Input Data”, 6, 3), the return string is “Dat”. If the third parameter is empty, the return string is “Data”.</p> <p><b>Note:</b> The first character position is 1, not 0.</p>
<p>The <b>substring after</b> method returns the substring in <i>string1</i> that occurs after the first instance of the substring in <i>string2</i>.</p> <p>For example, if the parameters are (“Input Data”, “Input ”), the return string is “Data”. You would get the same return string if the second parameter contained only a space.</p> <p><b>Note:</b> The first character position is 1, not 0.</p>
<p>The <b>substring before</b> method returns the substring in <i>string1</i> that occurs before the first instance of the substring in <i>string2</i>.</p> <p>For example, if the parameters are (“Input Data”, “ Data”), the return string is “Input”. You would get the same return string if the second parameter contained only a space.</p> <p><b>Note:</b> The first character position is 1, not 0.</p>

TABLE 2 String Methods (Continued)

Description
<p>The <b>translate</b> method returns the value of <i>string1</i>, replacing any occurrences of the characters in <i>string2</i> with the characters in the corresponding positions in <i>string3</i>. If <i>string2</i> contains more than one instance of a character, only the first instance is taken into account. If <i>string3</i> is longer than <i>string2</i>, the extra characters in <i>string3</i> are ignored. If <i>string2</i> is longer than <i>string3</i>, the extra characters in <i>string2</i> are removed from <i>string1</i>.</p> <p>For example, if the parameters are (“Sun”, “un”, “MI”), the original string, Sun, is translated to SMI.</p>

## Number Methods

The Number methods allow you to manipulate numeric data. To display a complete list of available number methods, click Number and then click Settings.

TABLE 3 Number Methods

Description
<p>The <b>ceiling</b> method returns the smallest integer that is not less than the value of <i>number1</i>.</p>
<p>The <b>floor</b> method returns the largest integer that is not greater than the value of <i>number1</i>.</p>
<p>The <b>number</b> method converts <i>object1</i> to a numerical value according to the following rules:</p> <ul style="list-style-type: none"> <li>▪ Boolean true is converted to 1; Boolean false is converted to 0.</li> <li>▪ A string that includes whitespace at the beginning and end, a minus sign, and a number (where the whitespace and minus sign are optional) is converted to the closest IEEE 754 number.</li> <li>▪ Strings that do not compute to a numerical value are converted to NaN.</li> <li>▪ A set of nodes is converted to a string and then converted as a string (as described above).</li> </ul>
<p>The <b>number literal</b> method allows you to create a number of fixed length and content. You can type the value directly into the method box.</p>
<p>The <b>round</b> method rounds the value of <i>number1</i> to the nearest integer.</p>
<p>The <b>sum</b> method returns the total value of the set of numeric values in <i>node-set1</i>.</p>

## Boolean Methods

Boolean methods allow you to apply boolean logic to your data. To display a complete list of available Boolean methods, click Boolean and then click Settings.

TABLE 4 Boolean Methods

Description
<p>The <b>boolean</b> method converts the value of <i>object1</i> to Boolean, and returns true or false.</p>

TABLE 4 Boolean Methods (Continued)

Description
The <b>exists</b> method checks whether a value is present in <i>object1</i> . If a value is present, it returns Boolean true; otherwise, it returns Boolean false.
The <b>false</b> method always returns Boolean false.
The <b>lang</b> method returns Boolean true if the value of <i>string1</i> matches the language of the <code>xsl:lang</code> element; otherwise, it returns Boolean false.
The <b>not</b> method returns Boolean true if <i>boolean1</i> is false, and returns Boolean false if <i>boolean1</i> is true.
<b>Note:</b> Boolean parameters cannot accept values with capital letters. For example, “True” and “TRUE” are not valid Boolean values, but “true” is.
The <b>true</b> method always returns Boolean true.

## Node Methods

Node methods allow you to manipulate node data. To display a complete list of available nodes methods, click Nodes and then click Settings.

TABLE 5 Nodes Methods

Description
The <b>count</b> method returns the number of nodes in the node-set contained in <i>node-set1</i> .
The <b>get BPid</b> method returns the business process instance ID.
The <b>get current time</b> method returns the current time in ISO 8601 format (for example, 2003-08-15T02:03:49.92Z).
The <b>get GUID</b> method returns a randomly generated globally unique ID.
The <b>get local time</b> method returns the local time in ISO 8601 format (for example, 2003-08-15T02:03:49.92Z).
The <b>id</b> method returns a node-set of elements selected by the unique ID specified in <i>object1</i> .
The <b>last</b> method returns the position number of the last node in the processed node list.
The <b>local name</b> method returns the local part of the first node in <i>node-set1</i> . A node usually consists of a prefix and a colon, followed by the local name.
The <b>name</b> method returns the name of the first node in <i>node-set1</i> .
The <b>namespace url</b> method returns the namespace URL of the first node in <i>node-set1</i> .
The <b>position</b> method returns the position in the node list of the node that is currently being processed

## XSD Operation

The XSD Operation methods enable you to marshal and unmarshal messages. To display a complete list of available XSD operation methods, click XSDOperation and then click Settings.

TABLE 6 XSD Operation Methods

Description
The <b>marshal</b> method marshals the information in the OTD bean, and returns an XML document.
The <b>unmarshal</b> method unmarshals the information in an XML document, and returns an OTD bean.
The <b>marshalToBytes</b> method marshals the information in the OTD bean, and returns the data as bytes.
The <b>unmarshalFromBytes</b> method unmarshals the bytes input, and returns an OTD bean.

## Conversion

There is one Conversion method, `convert`, that allows you to make conversions from various data types. To display the settings for the Conversion menu, click Conversion and then click Settings.

TABLE 7 Conversion Methods

Description
The <b>convert</b> method converts the input object to the output object. This method is only supported in version 5.0.X Projects.

## Encoder Parameter Values

The text to bytes and bytes to text methods both take a parameter that specifies the type of encoding to use when performing the conversion. The possible values for the encoder parameter include the following:

- |               |               |
|---------------|---------------|
| ▪ Big5        | ▪ Big5-HKSCS  |
| ▪ EUC-JP      | ▪ EUC-KR      |
| ▪ GB18030     | ▪ GBK         |
| ▪ ISO-2022-JP | ▪ ISO-2022-KR |
| ▪ ISO-8859-1  | ▪ ISO-8859-13 |

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- |                   |                       |
|-------------------|-----------------------|
| ■ ISO-8859-15     | ■ ISO-8859-2          |
| ■ ISO-8859-3      | ■ ISO-8859-4          |
| ■ ISO-8859-5      | ■ ISO-8859-6          |
| ■ ISO-8859-7      | ■ ISO-8859-8          |
| ■ ISO-8859-9      | ■ JIS_X0201           |
| ■ JIS_X0212-1990  | ■ KO18-R              |
| ■ Shift_JIS       | ■ TIS-620             |
| ■ US-ASCII        | ■ UTF-16              |
| ■ UTF-16BE        | ■ UTF-16LE            |
| ■ UTF-8           | ■ windows-1250        |
| ■ windows-1251    | ■ windows-1252        |
| ■ windows-1253    | ■ windows-1254        |
| ■ windows-1255    | ■ windows-1256        |
| ■ windows-1257    | ■ windows-1258        |
| ■ windows-31j     | ■ x-EUC-CN            |
| ■ x-euc-jp-linux  | ■ x-EUC-TW            |
| ■ x-eucJP-Open    | ■ x-ISC1191           |
| ■ x-JIS0208       | ■ x-JISAutoDetect     |
| ■ x-Johab         | ■ x-MS950-HKSCS       |
| ■ x-mswin-936     | ■ x-windows-50220     |
| ■ x-windows-50221 | ■ x-windows-949       |
| ■ x-windows-950   | ■ x-windows-iso2022jp |
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