

# Specifying derived properties

To be included in a MagicDraw project as a property extending a UML element, an attribute must be owned by a DSL customization element and stereotyped as «derivedPropertySpecification».

To create and specify a derived property

1. Select the customization element for which you want to create a derived property.



The derived property will be created for the stereotype or metaclass, defined as a customization target in the selected customization element specification.

2. Select **Create Element > Property** from the shortcut menu. The attribute is created.
3. Type the attribute name.

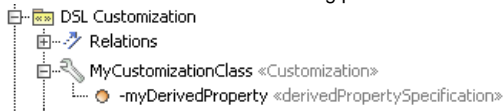


The attribute's name corresponds to the name of the derived property.

Type derived property names in camel case (i.e., *realizingActivities*).

A property name defined in camel case will be displayed in separate words with the first word capitalized. For example, *realizingActivities* will be changed to *Realizing Activities* (visible in the user interface).

4. Apply the stereotype «derivedPropertySpecification» to this attribute. The resulting view of the [Model Browser](#) must match the following picture:



5. Edit property values specifying the derived property in the attribute's Specification window.



All properties are specified in the general specification pane. Some are also specified in the **Tags** specification pane. For detailed information, see the [properties description table](#).



If you do not see the newly created derived property in the element's [Specification window](#), please read the following:





- In the element's [Specification window](#), the specified derived property is visible by default only in the **All** properties mode. First, try switching to this mode. Also try changing the mode in which you want the derived property to be visible (click the **Customize** button).
- If you have specified the derived property for the element (with the **Used UML Properties** property of DSL customization specified) you must add the newly created derived property to the element's visible properties list. For detailed information, please refer to [Derived properties visibility](#).

## Related Pages

- [Extending Metamodel with Derived Properties](#)
- [Using Customization Data](#)
- [Creating Customization Data](#)
- [Defining Expressions](#)

The following table describes the properties specified for the derived property.

Property	Description	Specified in...
<b>Name</b>	The name of the property. This name will be added and visible in the specification of the element whose type is defined as a customization target.	General specification pane.

<b>Type</b>	<p>The type of the derived property values. You may set a model element type or a data type (e.g., string, boolean, or integer from the UML Standard Profile) as a property value.</p> <div>  To display classes and components as property values, select the classifier as a type for the derived property value. </div>	General specification pane.
<b>Multiplicity</b>	<p>The multiplicity of the derived property values.</p> <div>  If the multiplicity is "0..1", the derived property value will be shown as single.  If the multiplicity is "0..*", the derived property values will be shown as collection. </div>	General specification pane.
<b>Is Read Only/ isReadOnly</b>	<p>If <i>true</i>, the derived property is read-only. You cannot edit the result elements for the derived property value.  If <i>false</i>, the property is read-write. You can edit the result elements for the derived property according to the expressions defined.</p> <div>  Currently only read-only derived properties are supported. </div>	<ul style="list-style-type: none"> <li>General specification pane.</li> <li>Tags specification pane.</li> </ul>
<b>Is Ordered</b>	<p>If <i>true</i>, the property values are always displayed in the same order.  If <i>false</i>, the property values are displayed in nonpredictable order.</p>	General specification pane.
<b>Is Unique</b>	<p>If <i>true</i>, the property values are unique. The same element is displayed only once.  If <i>false</i>, the property values may be displayed more than once.</p>	General specification pane.
<b>Expression/ expression</b>	<p>One or more expressions of the derived property.  An expression defines the criterion for selecting result elements.</p> <p>There are four possible expression types:</p> <ul style="list-style-type: none"> <li>Simple (UML relationships, properties, and tags)</li> <li>Multi properties chain (Meta Chain)</li> <li>OCL</li> <li>Binary (Reference to code class)</li> </ul> <p>The criterion for selecting the result elements can also be any combination of the expression types above.  For the detailed information, see <a href="#">Defining expressions</a>.</p>	<ul style="list-style-type: none"> <li>General specification pane.</li> <li>Tags specification pane.</li> </ul>
<b>Documentation</b>	<p>The text displayed as the derived property description in the element's <a href="#">Specification window</a> and Properties panel.</p>	Documentation specification pane.
<b>customizationTarget</b>	<p>The specified derived property will be added to one or more element types (stereotypes and/ or metaclasses).</p> <div>  The expression calculations begin from the element type of the customization target. </div>	Customization element <a href="#">Specification window</a>

derivedPropertySpecification - allMoreSpecificClassifiers

History

-allMoreSpecificClassifiers : Classifier [0..\*] [...]

-allMoreSpecificClassifiers

Documentation/Hyper...

Usage in Diagrams

Inner Elements

Relations

Tags

Constraints

Language Properties

-allMoreSpecificClassifiers

Properties: Expert

Customize

derivedPropertySpecification

NameallMoreSpecificClassifiers

Qualified NameTraceability customization::Propert...

TypeClassifier [UML Standard Profil...

Type Modifier

Visibilityprivate

Default Value

Applied Stereotype<> derivedPropertySpecification [Eke

Multiplicity0..\*

Is Read Only☒ true

Is Static☐ false

Aggregationnone

Is Derived☐ false

Is Derived Union☐ false

Is Ordered☒ true

Is Unique☒ true

Subsetted Property

Redefined Property

Image

To Do

ExpressionAll Generalization; Binary; com.no...

Expression

List of different types of criterion how to gather dependent elements:  
Simple (UML Relation, Property or Tag); Meta Chain, OCL and Binary. If  
several criterion are defined results is union of all of them.

Expression can be used in Derived Property Specification, Dependency  
Matrix, Dependency Map.

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