

Automatic Instantiation wizard

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Introduction

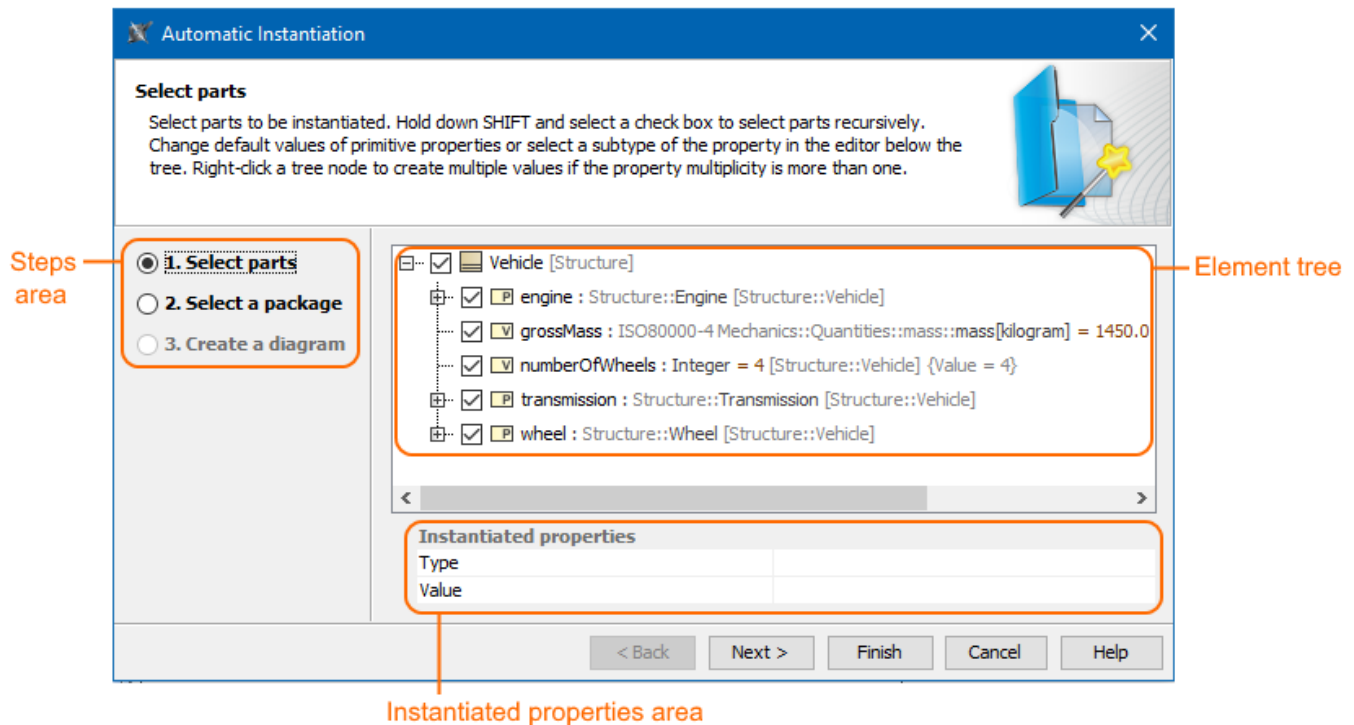
The **Automatic Instantiation** wizard analyzes the structure of a selected element and collects all available information about that element from the model (attributes, properties, and so on). It evaluates collected information and suggests all possible instances to be created.

This tool allows you to create instances of various entities with just a few clicks. It is useful for working with complex models, and for assembling large systems from parts. For properties having a multiplicity of more than 1, you can create as many instances of the same type as you need, since parallel parts can be added while creating instances. While creating instances automatically, you can:

- Select properties for which the instances will be created.
- Change types of instantiated properties.
- Assign default values for the instantiated properties.

The wizard consists of the following areas:

- **Steps area:** displays all steps of the wizard and shows the current step you are working on.
- **Element tree:** displays all owned internal structure of a selected element.
- **Instantiated properties area:** allows you to change the default values and create several different sets of instances.




The Automatic Instantiation wizard of the *Vehicle* Block with highlighted three main areas: Steps area, Element tree, and Instantiated properties area.

Using the Automatic Instantiation wizard

To create and display instance specifications of Blocks in the diagram by using the **Automatic Instantiation** wizard

1. Select the Block for which you want to create instances.

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- bdd [Package] Structure [Vehicle Structure]
- «block»
Vehicle
- transmission
«block»
Transmission
- brake
«block»
Brake
- rotor
«block»
Rotor
- caliper
«block»
Caliper
- pa
- Specification Enter
Symbol Properties Alt+Enter
Element Group >
Create Diagram
Select in Containment Tree Alt+B
Select in Inheritance Tree
Select in Structure Tree
Go To >
Display >
Related Elements >
Refactor >
Tools >
Edit Compartments
Stereotype
Simulation >
Hierarchy Diagram Wizard...
Create Setters/Getters...
Implement/Override Operations...
Create Instance...
Extract Legends

-  If you are satisfied with the default values provided in the **Automatic Instantiation** wizard, you can finish the wizard in the first step without making any changes. The instances will be created with the default values and in your working package. To change default values or create

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- The screenshot displays the SysML editor interface. On the left, the 'Model' tree shows the project structure, with 'Instance of the vehicle' selected and highlighted by an orange box. An orange arrow points from this selection to the main diagram area. The main area shows a SysML Block Definition Diagram (BDD) for a vehicle. The diagram is titled 'bdd [Package] Structure [Instance of the vehicle]' and is labeled 'Shapes of instances'. The diagram shows a hierarchy of blocks representing the vehicle's components. The top-level block is 'vehicle : Vehicle'. It contains several nested blocks, each representing a specific component: 'vehicle.wheel : Wheel', 'vehicle.transmission : Transmission', 'vehicle.engine : Engine', 'vehicle.wheel.brake : Brake', 'vehicle.wheel.brake.caliper : Caliper', 'vehicle.wheel.brake.pad : Pad', 'vehicle.wheel.brake.rotor : Rotor', and 'vehicle.wheel.tire : Tire'. Each block contains a list of properties and their values, such as 'engineRPM = 0.0', 'axleRPM = 30.0', 'numAxleGearTeeth = 100.0', 'numEngineGearTeeth = 50.0', 'diameter = 16.0', 'tire = vehicle.wheel.tire', 'caliperFrictionForce = "140"(unit = newton)', 'diameter = "0.038"(unit = metre)', 'partNumber = --', 'pressure = "7.8"(unit = megapascal)', 'springForce = "250"(unit = newton)', 'brakeMU = 0.6', 'centerLength = 0.08(unit = metre)', 'thickness = 0.01(unit = metre)', 'width = 0.038(unit = metre)', and 'outerDiameter = "0.25"(unit = metre)'. The diagram is organized into a hierarchical structure, with the top-level block containing the most general properties and the nested blocks containing more specific properties. The diagram is titled 'Shapes of instances' and is labeled 'vehicle : Vehicle'.

The Block Definition Diagram with instances of the vehicle Block is created by using the Automatic Instantiation wizard.

Related pages

- [Steps of the Automatic Instantiation wizard](#)

Sample model

The model used in the figures of this page is the **VehicleStructure** sample model. To open this sample, download [VehicleStructure.mdzip](#).