

# Working with Security Structure diagram

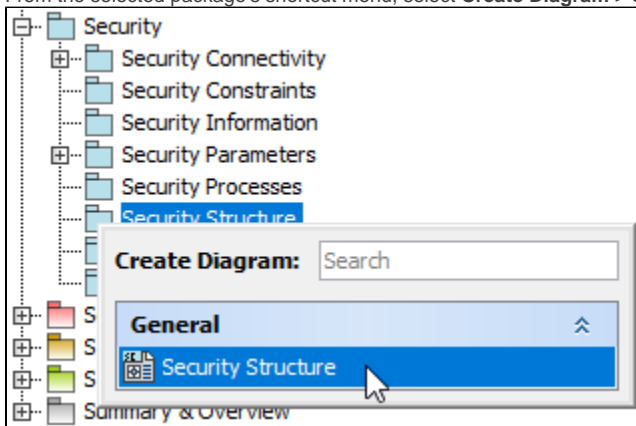
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## Creating a diagram

To create an Security Structure diagram

1. In the Containment Tree, select the Security Structure and do one of the following:
  - From the selected package's shortcut menu, select **Create Diagram > Security Structure**.
2. Name a diagram or leave it with the default name.

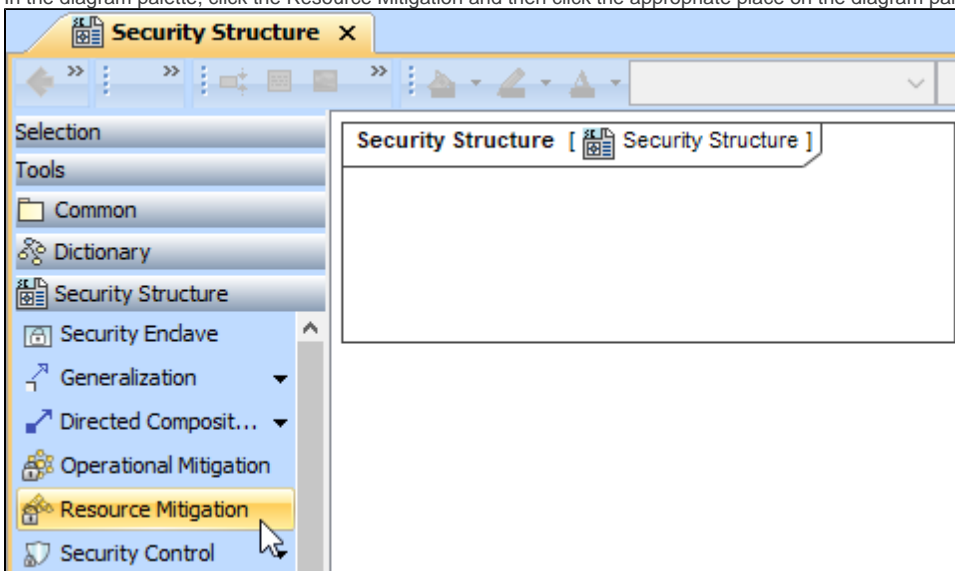


## Creating an element

When the diagram is created, you can start creating the appropriate elements. An example is described using Resource Mitigation element, but the same is valid for other structural elements.

To create an Resource Mitigation in a diagram

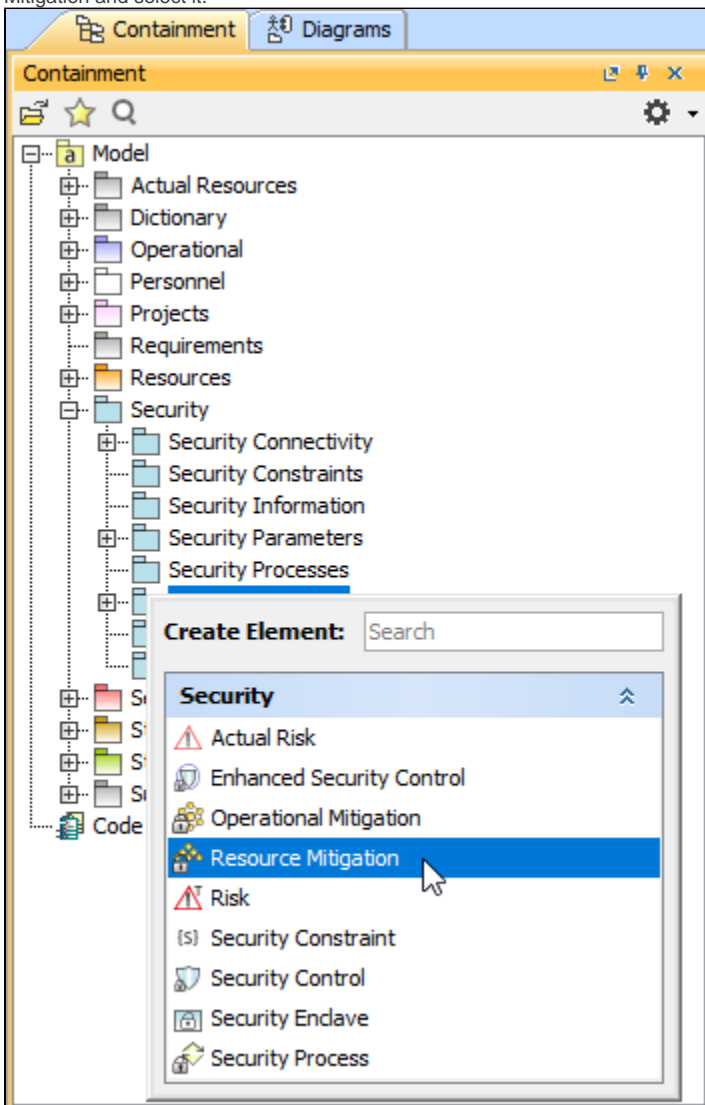
1. In the diagram palette, click the Resource Mitigation and then click the appropriate place on the diagram pane.



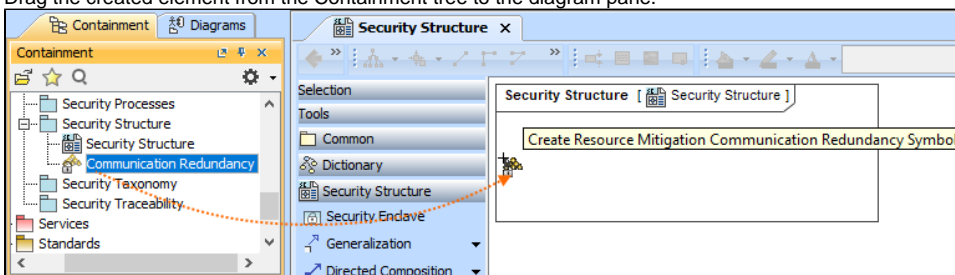
2. Name the element.

To create an Resource Mitigation in a Containment tree

1. In the Containment tree, right click the Security Structure package and from the shortcut menu, select **Create Element**. Search for the Resource Mitigation and select it.



2. Name the element.
3. Drag the created element from the Containment tree to the diagram pane.



The structure of each Resource Mitigation can be modeled using the [Security Internal Connectivity \(Resources\) diagram](#) or [Security Internal Connectivity \(Operational\) diagram](#).

To create the elements from other resources (e.g. Word, Excel, HTML)

1. Copy a list in your resource.
2. In a diagram, press Ctrl+V and from the **Paste Special** dialog, choose **Element**.
3. From the **Select Type** dialog, choose Resource Mitigation (or other appropriate element).

 more information about creating the elements from other resources, see [Creating elements from other resources](#).


## Connecting the Resource Mitigation

When you have Resource Mitigation created, you can start connecting them using the Composition and Aggregation relationships.

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To connect the elements with the Composition relationship

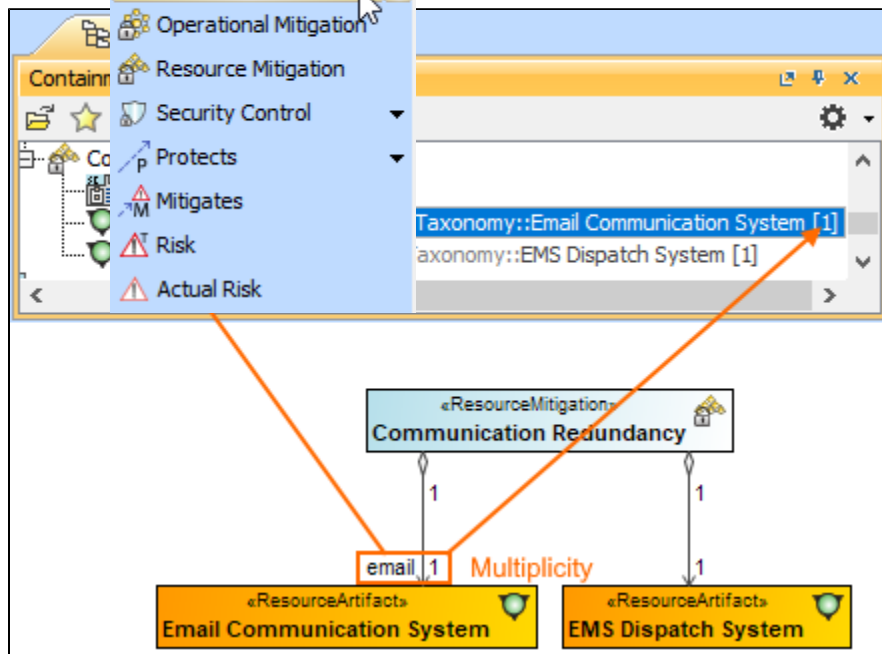
1. Select an element, which will be the Composition End.
2. From the Smart Manipulator, which appears after you select the element, choose Directed Composition.

 You can also select the Composition relationship from the diagram palette.

3. Move the mouse cursor over the element and when it is highlighted in blue, click to finish the action.

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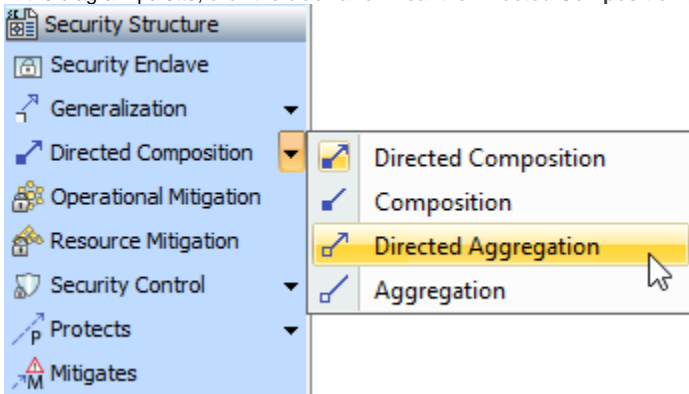
Once the Composition relationship is created, in the Containment tree, you can see the Composite element and note the Resource Roles (Part and the Composite element and how the element type and multiplicity is shown.



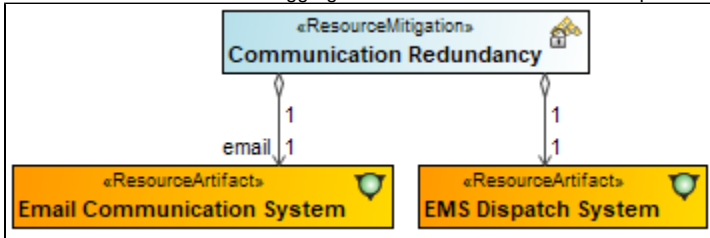
To connect the elements with the Aggregation relationship

1. Select an element, which will be the Composition End.

2. In the diagram palette, click the black arrow near the **Directed Composition** and choose **Directed Aggregation**.



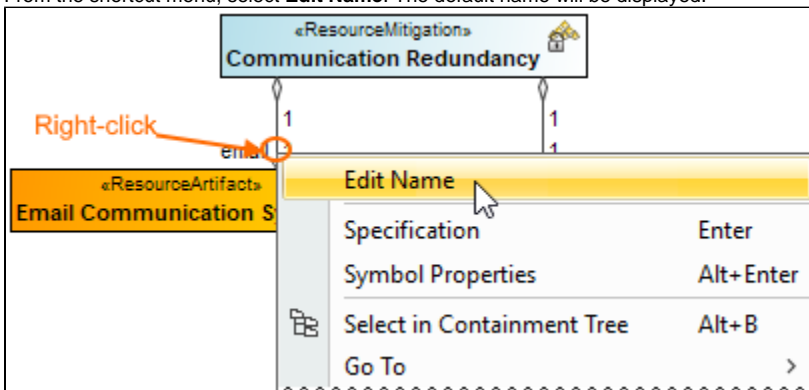
3. Click the element which is the Aggregation End and draw the relationship to the Reference End.



## Changing the role name and specifying multiplicity

To change the role name

1. Right-click the selected Role end of the relationship.
2. From the shortcut menu, select **Edit Name**. The default name will be displayed.



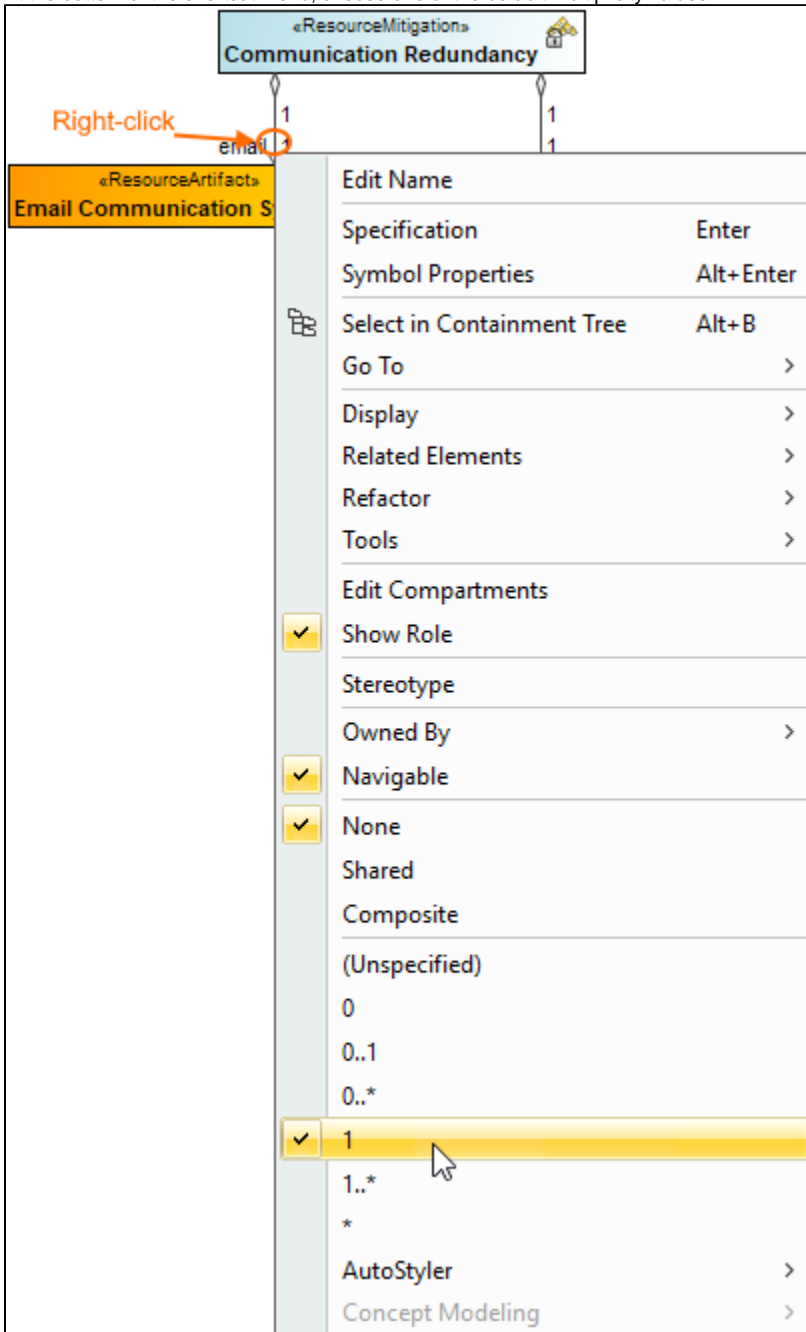
You can edit the default name on the diagram, in the Containment tree, or in the role's [Specification window](#).

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To specify multiplicity

1. Right-click the selected Role end of the Composite relationship.

2. At the bottom of the shortcut menu, choose one of the default multiplicity values.



You can always change the multiplicity value on the diagram or in the specification window of the role element.

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## Displaying created structure

If you already have created a structure in the Containment tree, you can display it on the diagram. There are three ways to display the structure:

- Relationship (direct) Notation. If you choose using this notation, the structure will be displayed on a diagram pane with the elements connected with relationships.
- Attribute Compartment Notation. If you choose using this notations, the structure will be displayed as the attributes in the Attributes compartment.
- Structure (Nested elements) Notation. If you choose using this notations, the structure will be displayed in the Structure compartment.

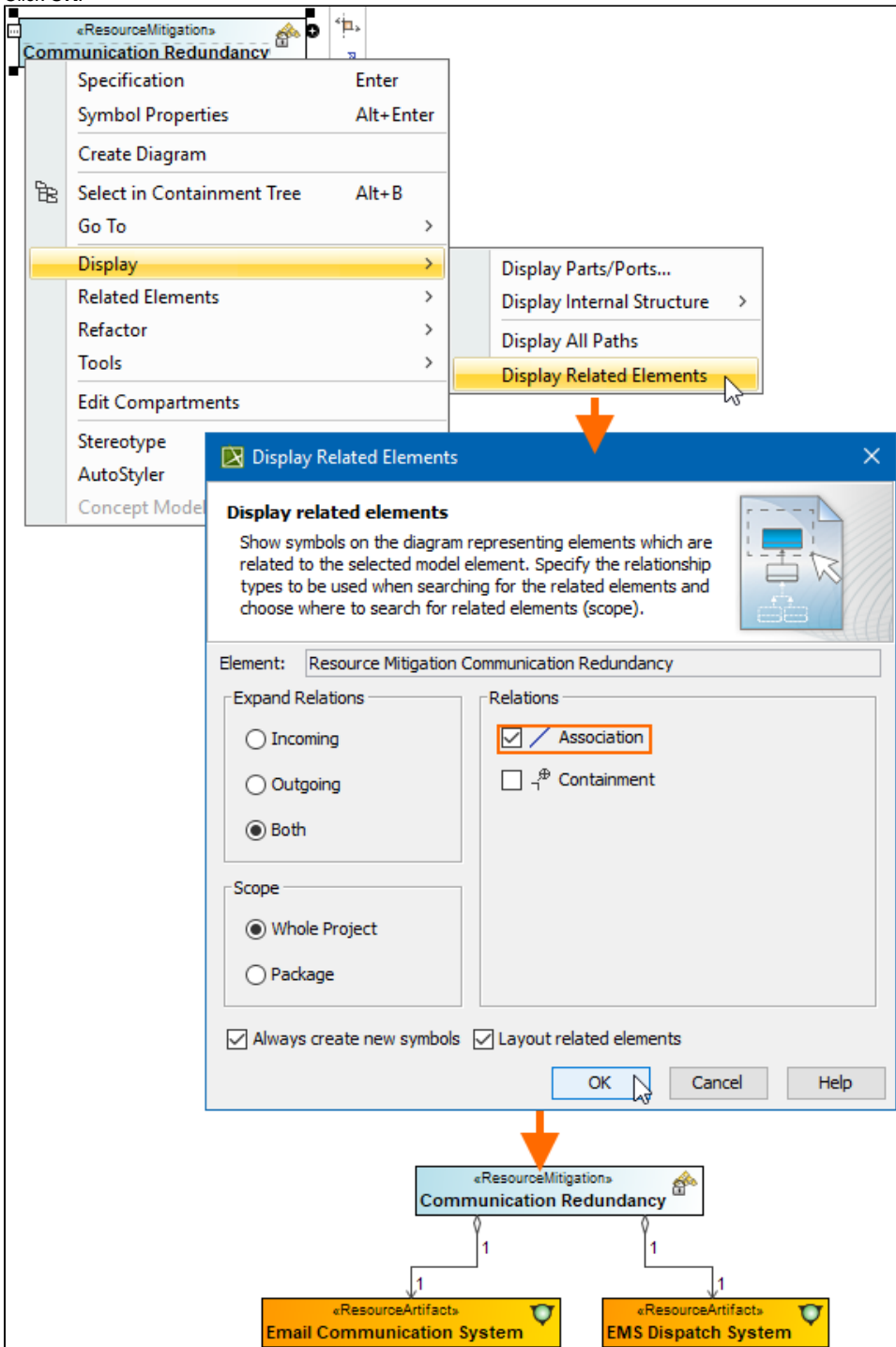
To display a created structure on a diagram (Direct Notation)

1. Drag the selected element with the part properties on to the diagram.

2. Right-click that element, and from its shortcut menu, select **Display > Display Related Elements**.
3. In the **Display Related Elements** dialog, select **Association**.

If Resource Artifacts (or other structural elements) were related using the Resource Association relationship, select the **Resource Association** also.

4. Click **OK**.



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To display a created structure on a diagram (Attribute Compartment Notation)

1. Drag the selected element with the part properties on to the diagram.

2. Select the element and click the Compartments [smart manipulator](#).



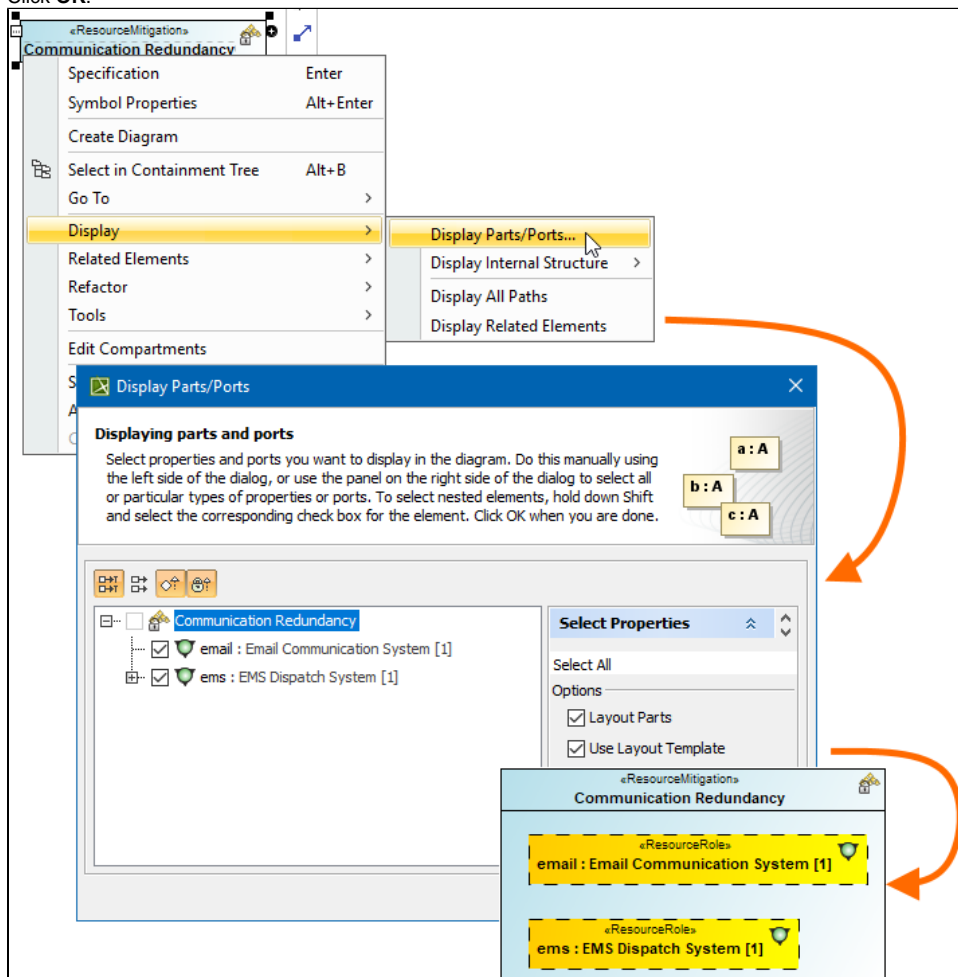
3. In the Compartments menu, select **Attributes**.

When connecting the elements with Composition/Aggregation relationships, the roles are Association Ends. In such case, the roles will not be displayed in the Attributes compartment, only in the Structure compartment.

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To display a created structure on a diagram (Structure (Nested elements) Notation)

- a. Drag the selected element with the part properties on to the diagram.
- b. Do one of the following:
  - Select the element, click the Compartments [smart manipulator](#), and choose **Structure**.
  - Right-click that element, and from its shortcut menu, select **Display** > **Display Parts/Ports**.
- c. In the **Display Parts/Ports** dialog, select the parts you want to be displayed.
- d. Click **OK**.



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## Related pages

- [Displaying related elements](#)
- [Displaying parts and ports](#)
- [Compartments](#)
- [Smart manipulation](#)