Assigning Properties in HyperMesh

Properties can be assigned to elements in two different ways in HyperMesh:

Indirect: Assign a property to a Component collector. Each element organized in that collector, which does not have a property assigned in the direct way, will use the property of the Component collector. Advantages: Property assignment is clearly visible in the model browser. And: Remesh of elements does not lose their link to properties.

Direct: Assign a property to elements. Advantage: Organizing an element into another Component collector will not affect the element's link to it's property. But take care in case of a remesh: The newly created elements will not keep the link to the property of the original elements.

Step 1: Open the model HM-01_ae-03_00.hm into session

Step 2: Check the Property Assignment

Assign a property to a Component (indirect):

1. In the **Model Browser** open the *Model View*.

2. Select a component.

3. In the **Entity Editor** click twice on the *Property* field to open a dialogue.
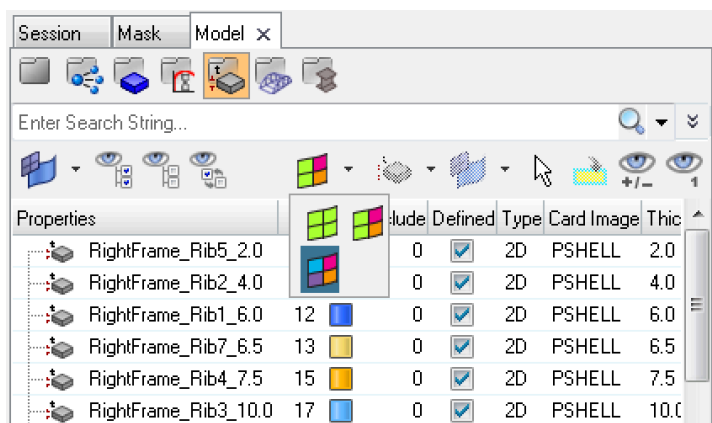
4. Select a property from the list and click *OK.*

Assign a property to elements (direct):

5. In the **Model Browser,** right-click on a property and select *Assign*.

    A selection panel will open to select the elements to assign that property to.

6. Select elements on the model in the graphics area.

7. Click *OK* to confirm the mixed assignment of direct and indirect properties on the component.

Step 3: Check the property assignment

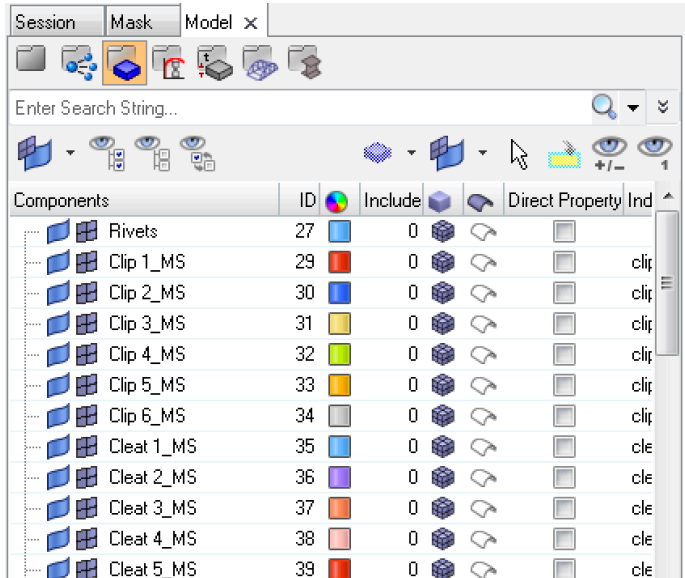There are several ways to check if a property is assigned directly or indirectly to elements:

1. In the **Model Browser** switch to the *Property View* ![icon].

2. Select the option to display only elements with direct or indirect, or with any assignment type.

Respective elements will not be displayed.

3. In the **Model Browser** switch to the *Component View* .

   If the box in the column Direct Property is not checked, no element in that component collector has a direct property assigned. If it is checked, at least one (not necessarily all) element in the component has a direct assignment.

4. Verify on your model that no box for Direct Property is checked: all elements have indirect property assignment through their components.

Step 4: Change Indirect to Direct Assignment through Model Browser

If you want to change property assignment from direct to indirect, simply un-check the box for Direct Property in the Model Browser: Component View. You may select multiple components at the same time for this.

1. To change from direct to indirect, check the box for Direct Property.

   The indirect property from the component is assigned direct to it's elements.

   A difference is, that this does not work in the case of multiple selection of components. To come around this, we will use a script (may be slow in case of many elements):
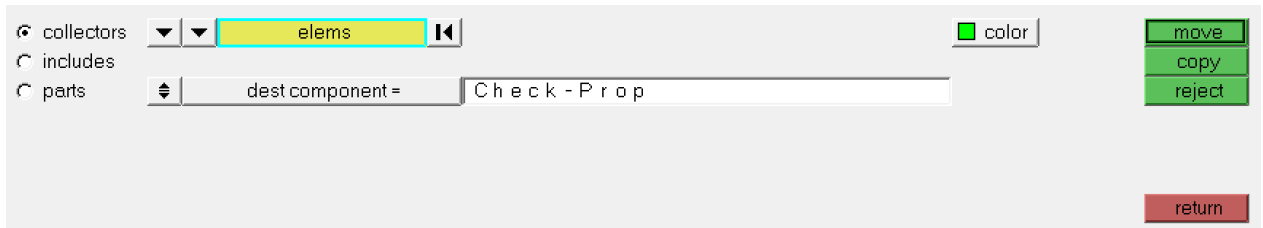
2. To use a script to change Indirect to Direct Assignment through Model Browser click *File > Run > Tcl/Tk Script*.

3. In the dialog select Indirect-to-Direct-Prop.tcl.

4. Verify that all boxes for Direct Property are checked now.

Step 5: Organize all Elements into a new Component

A "hard" check would be to organize elements into a component collector that has no property assigned, and check by element coloring if they still have a property: Then it is directly assigned.

1. In the Model Browser change to the Model View.

2. Right-click on the background and select *Create > Component*.

3. Name the component **Check-Prop**.

4. To organize elements into the component click *Mesh > Organize > Elements > To Component.*

5. Click the **elems** selector to open extended entity selection and click *all*.

6. To set the component to move the elements to, click *dest component =* and select *Check-Prop* from the list.

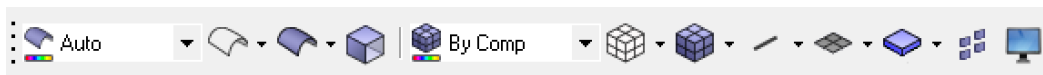7. Click *move* to complete the operation.

   All elements should now be organized in the Check-Prop component. As this has no property assigned, the elements would also have no property assigned if they had an indirect assignment. We can visually verify that they have a direct assignment and still point to their property.

8. In the Model Browser switch to the Property View

Or:

9. In the Visualization toolbar, switch the element coloring to *By Prop*.

   Both ways will color elements with the color of their property. Verify the color changes accordingly. If elements had no property assigned, they would be grey now.