Altair HyperView 2019 Tutorials

HV-4010: Performing Advanced Queries

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In this tutorial, you will learn how to:

- Query results based on a contour value

- Create sets (groups) of the queried entities

Tools

To access the **Advanced Query** dialog:

- Click the *Advanced* button from the **Query** panel menu.

The **Advanced Query** dialog allows you to query components, elements, and nodes based on a value in the legend of an applied contour. This allows you to filter your model to display entities of interest for the contour that you have applied. You can also create sets (groups) of the data that you have queried, thereby preventing the need to query the same data multiple times.
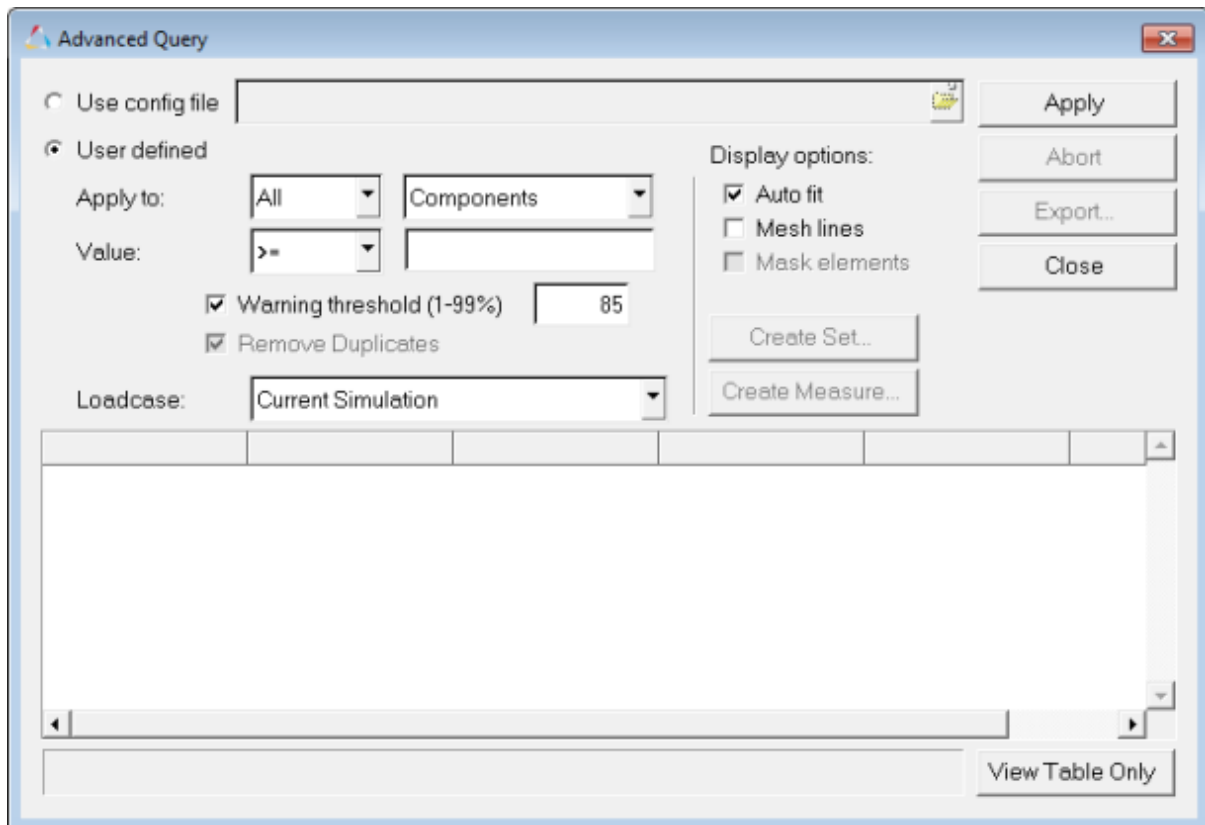
Exercise: Performing Advanced Queries

This exercise uses the model file, `truck.key` and the corresponding `d3plot` file as the results file.

Step 1: Contour the model.

1. Load the `truck.key` model file and the `d3plot` results file, located in the `animation\truck` folder.

2. Click the ***Contour*** panel button ![icon] on the **Result** toolbar to enter the **Contour** panel.

3. Contour the model for **vonMises** stresses.

4. Click ***Apply***.

5. Animate the model ![icon].

6. Stop the animation.

7. Click the **Animation Controls** panel button ![icon] on the **Animation** toolbar.

8. Use the **Current time** slider bar to display the time **0.034996**.

### Step 2: Using the Advanced Query dialog to query results.

1. Click the ***Query*** panel button ![icon] on the **Result** toolbar to enter the **Query** panel.

2. Click on the ***Advanced*** button, located in the lower right corner of the **Query** panel.

3. Verify that the **User defined** option is turned on.

4. Verify that the **Apply to** options are set to **All** and **Components**.

5. For **Value**, verify that **>=** is selected and enter `400` into the text box.

6. Verify that the **Warning Threshold** option is activated, and enter `80` into the text box.

    This option allows you to view entities that are in the range above the threshold value, which is determined by the numerical percent that you have entered. In this case the threshold value will be 320, as it is 80% of 400, and the table will show the values in the range between 320 and 400 in blue.

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7. Verify that **Loadcase** is set to **Current Simulation**.
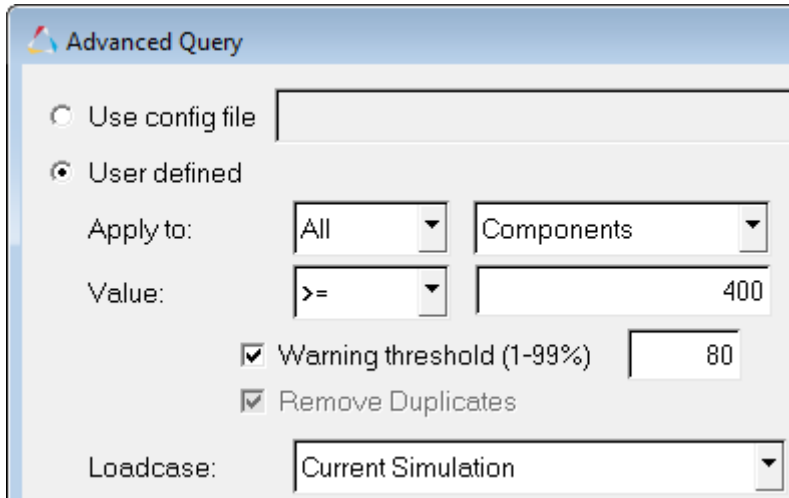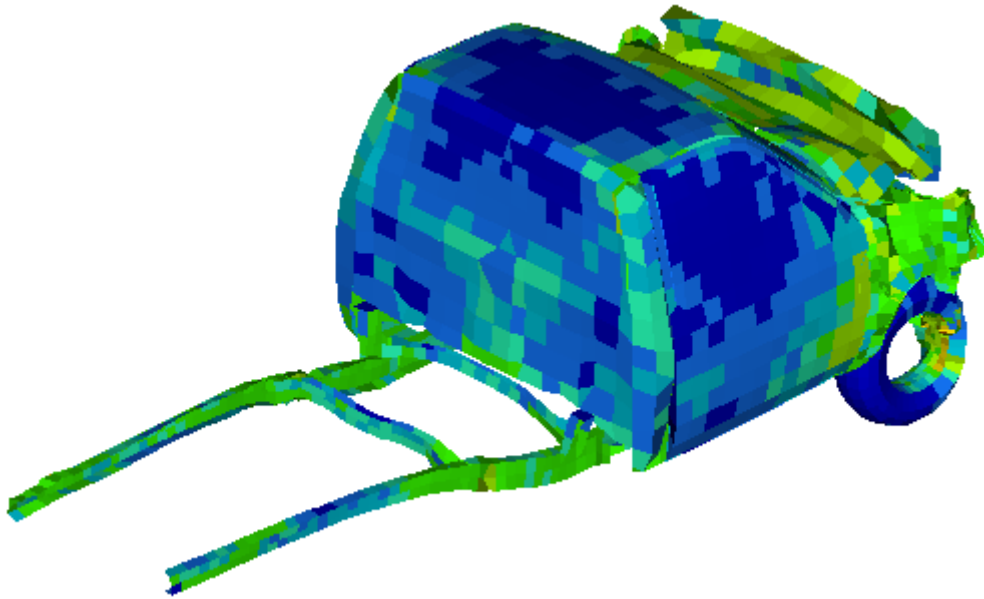

8. Click **Apply**.
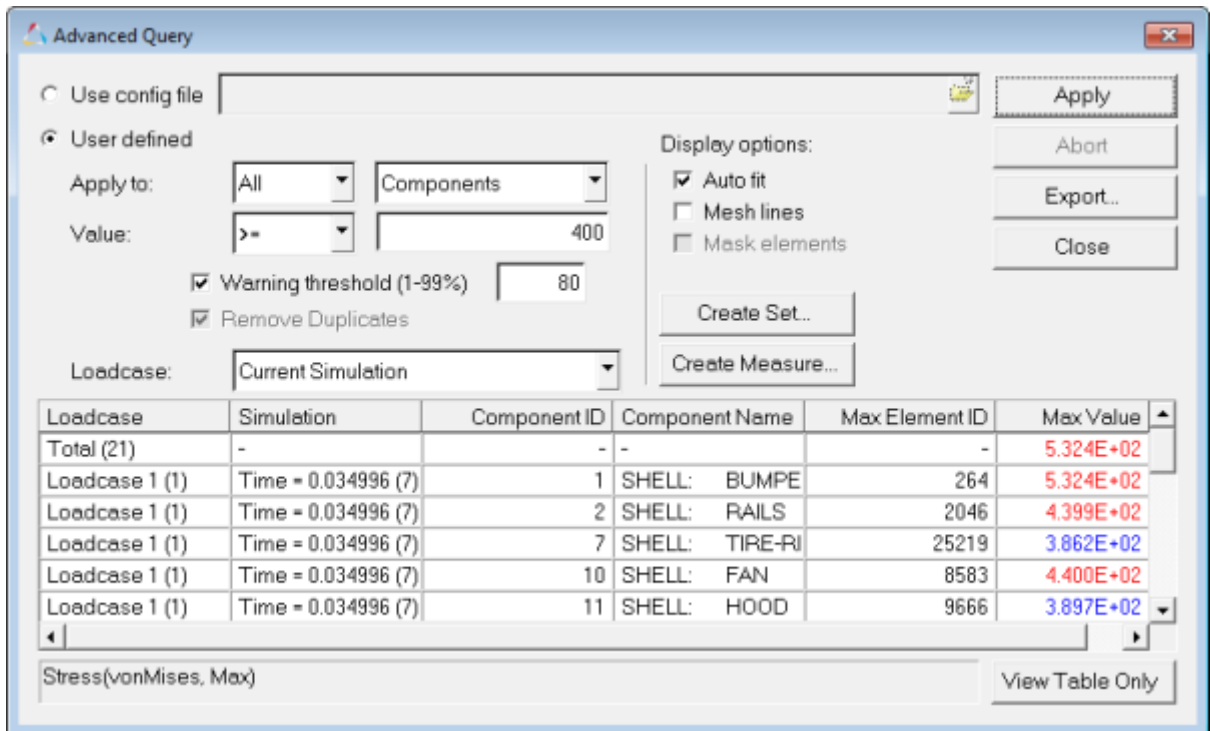
> **Note**   The feature lines are now displayed on the model.

9. Click inside the graphics window and press "**L**" on the keyboard.

    The feature lines are now turned off.

10. Click on ***5.324E+02***, which is the first value located in the **Max Value** column.


11. Click on other values in the **Max Value** column, and observe the graphics area.

The component with the element that has the maximum value that you selected will be displayed.
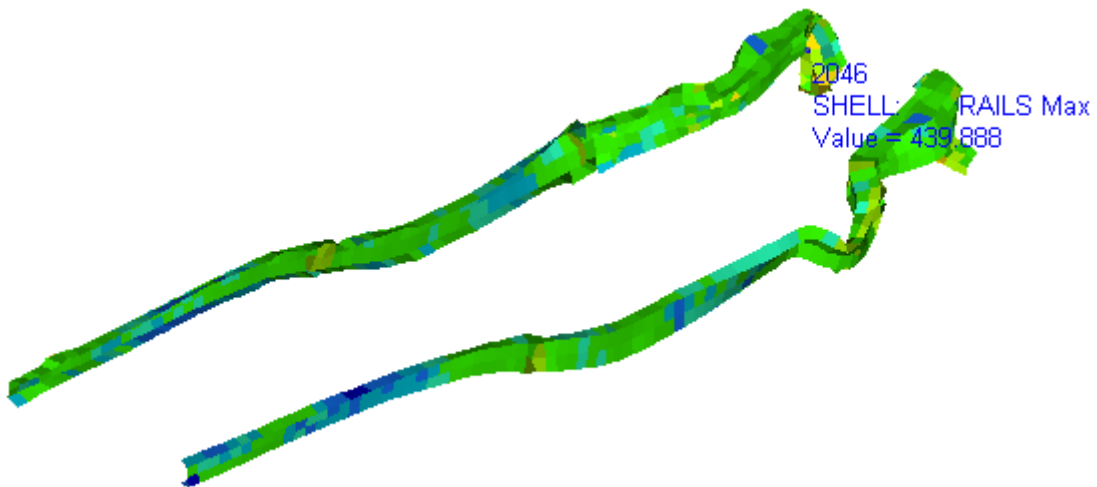
Step 3: Creating and viewing a set (group) of queried entities.

1. Click on the first value in the **Max Value** column *(5.324E+02)*.

2. Click on the *Create Set* button.

    The **Create Group** dialog is displayed.

3. Enter `vonMises>=400` into the **Group label** text box.
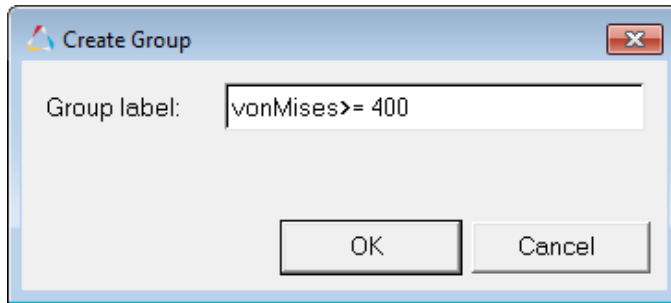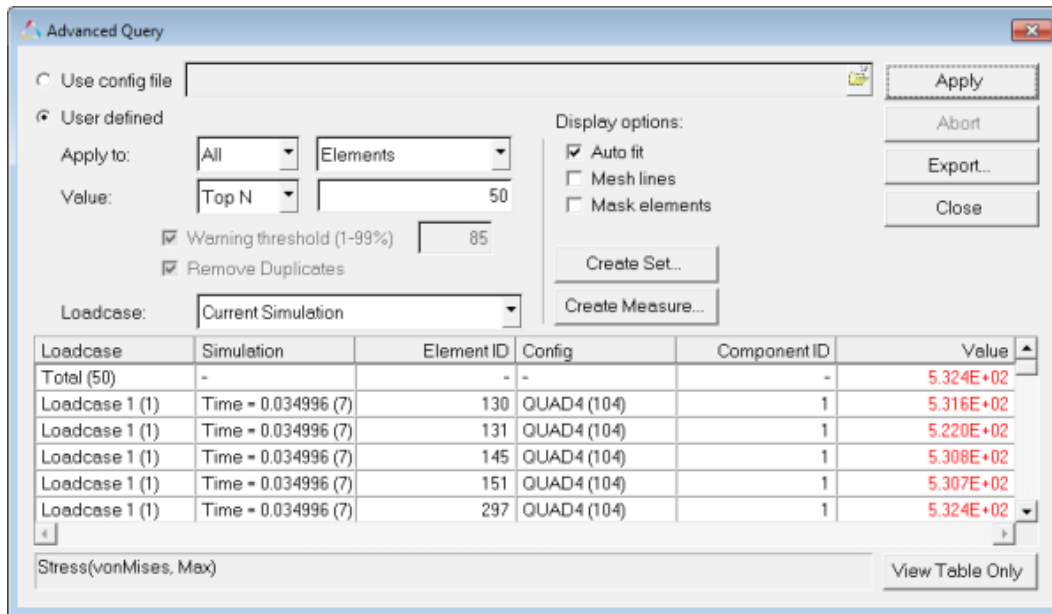

4. Click *OK*.

5. Close the **Advanced Query** dialog.

6. If the **Results Browser** is not open, open the browser by selecting *View > Browsers > HyperView > Results* from the menu bar.

7. Expand the folder next to **Sets**.

8. Right-click on *vonMises>=400* and select *Isolate Only* from the context menu.

    The components in the set (group) are displayed on the screen.

Step 4: Using the Advanced Query dialog to query Top N elements.

1. Return to the *Query* panel, and click on the *Advanced* button.

2. For **Apply To**, select *All* and *Elements*.

3. For **Value**, select *Top N* and enter `50` into the text box.

4. For **Loadcase**, select *Current Simulation*.

5. Click **Apply**.

The top 50 elements of the model are shown in the list.

6. Click on the **Create Set** button.

7. Enter `vonMises Top 50` into the **Group label** text box.

8. Click **OK**, and close the **Advanced Query** dialog.

9. Activate the **Results Browser** from the **View** menu (if not already displayed).

10. Turn off the display of all components by clicking   .

11. Expand the **Sets** folder.

12. Right-click on **vonMises Top 50** and select **Show**.

The elements that were listed in the **Advanced Query** dialog are displayed on the screen.