

ANSYS Flow Through U-Duct - Results

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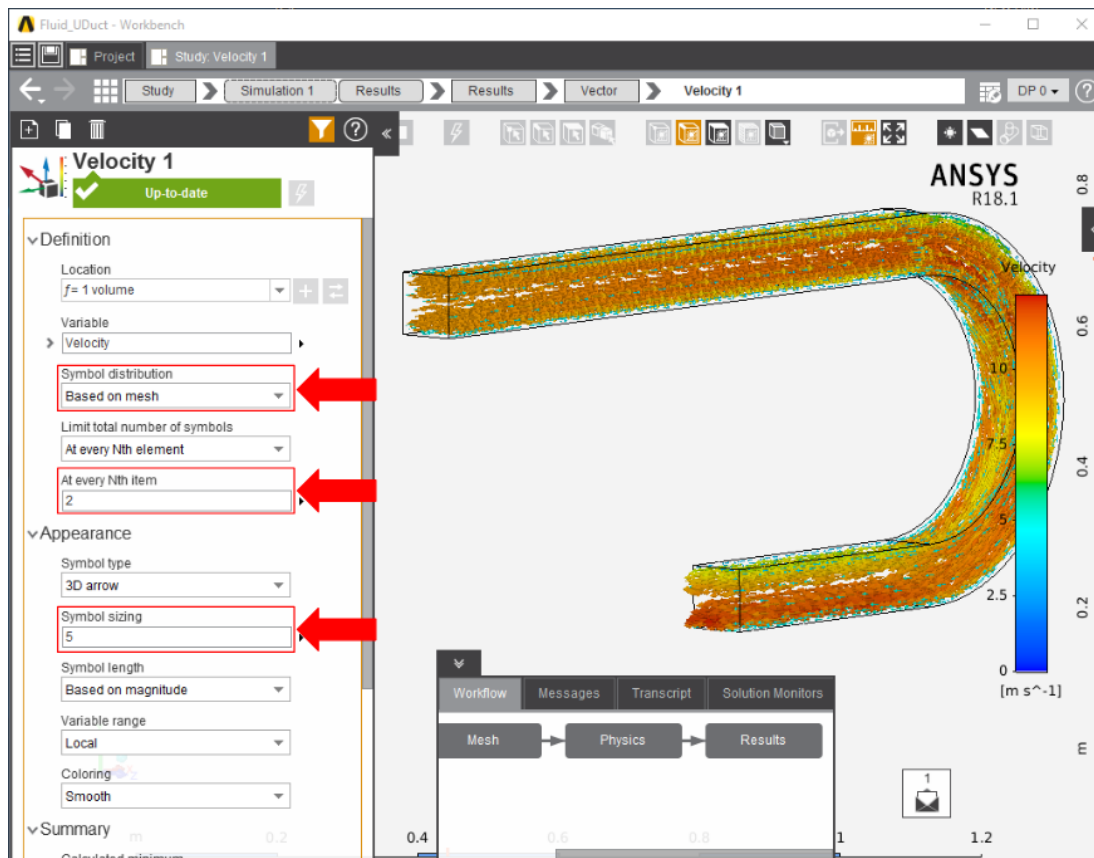
Problem Specification

1. Start-Up
2. Geometry
3. Mesh
4. Physics Setup
5. Results
6. Verification & Validation

Solution/Results

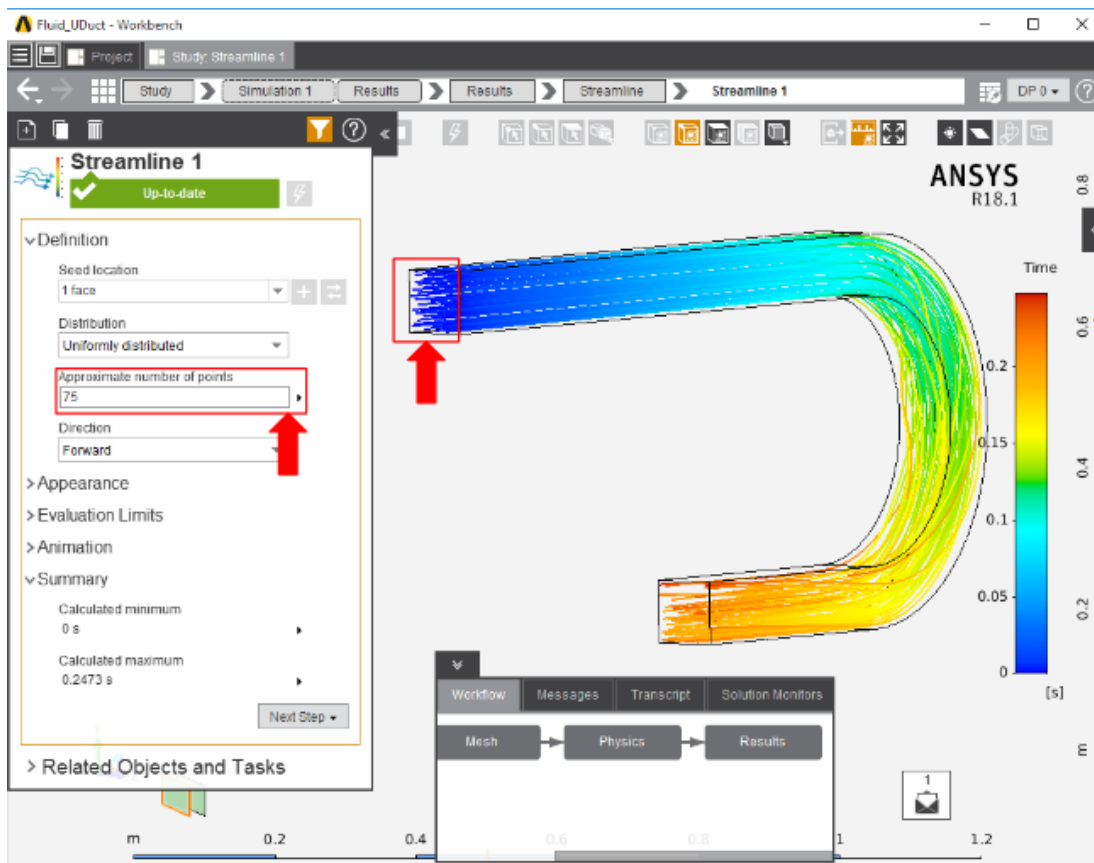
Press the **Results** button in the **Workflow** to extract information from the simulation. In order to find information that can be readily used, first **press Evaluate Results**. Once the evaluation is complete, AIM will automatically output a vector in the **Results** section under **Objects**. The vectors should show air velocity but may be hard to see.

Select the **velocity vector** to edit the setting in which the vectors are defined. Make sure to update the **Symbol distribution** to **Based on mesh** and set **At every Nth item** to **2**. Press the **play** button in the model window to see how these velocity vectors develop over time.



To find the total pressure on the walls of the duct, select **Contour** from the **Results add dropdown menu**. Select all of the outside faces of the flow volume and change the **Variable** to **TotalPressure**. This effectively will plot the pressure on the duct by calculating the pressure at the boundary layer.

Streamlines can also be computed by picking the **Streamline** option in the **Add drop down menu** near the **Results** category. Select the inlet as the **Seed location**. Retain **Distribution as Uniformly distributed** and input 50 to 100 for **Approximate number of points**. If desired change the **Wire thickness** in the **Appearance** section to alter how big the streamlines are. Press the **play** button in the model window to see how these streamlines develop over time.



To create a plot of the pressure inside the fluid volume, create a **plane** and orient it to bisect the flow volume. Once the plane has been created, use the **Ad** drop down menu to create a contour whose location is the plane and the **variable** is TotalPressure.

[Go to Step 6: Verification & Validation](#)

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