

AIM Backwards Facing Step - Results

Author(s): Sebastian Vecchi, ANSYS Inc.

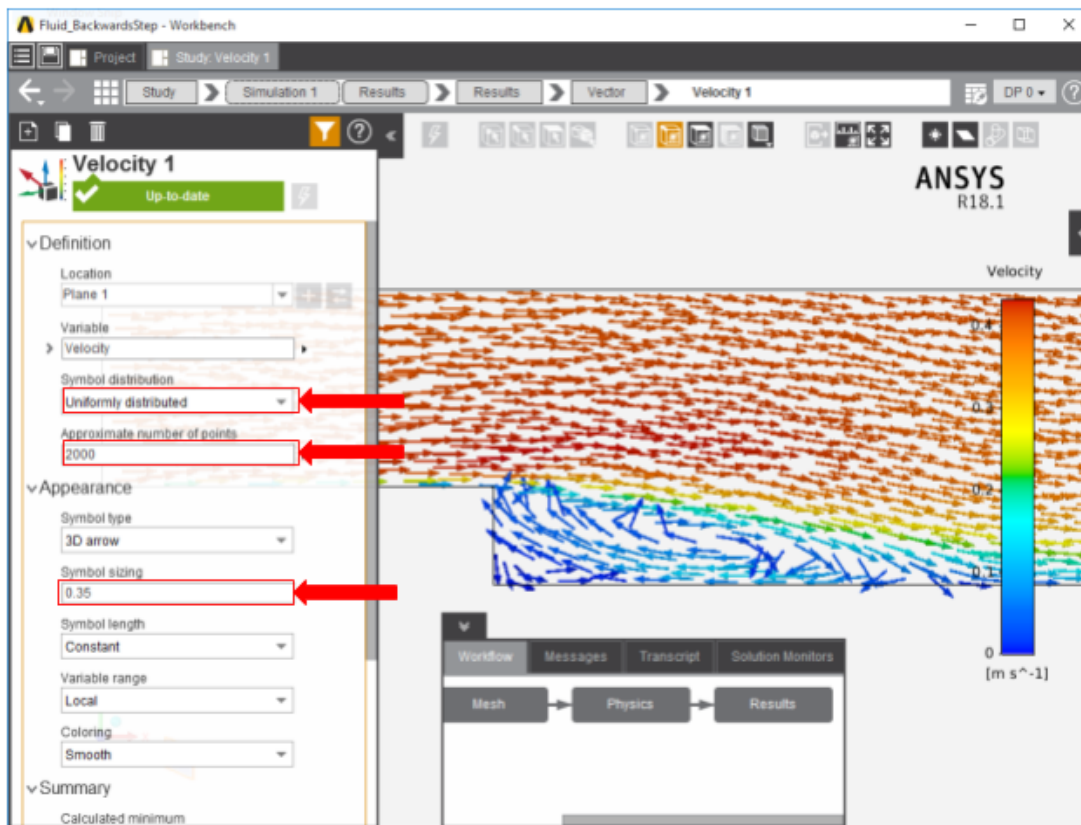
Problem Specification

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

Results

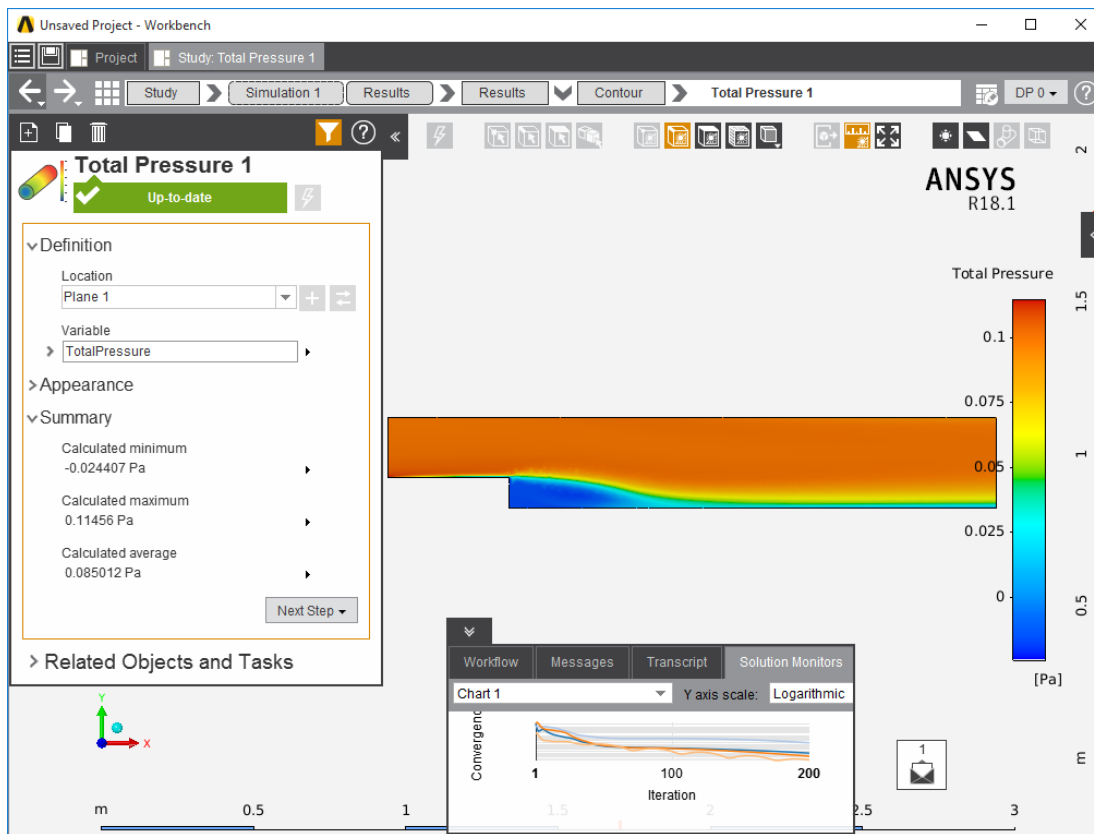
Press the **Results** button in the Workflow to extract information from the simulation. In order to find information that can be readily used, press **Evaluate Results**. Once the evaluation is complete, AIM will automatically output a vector in the **Results** section under **Objects**.

Select the **Vector** to edit the settings with which the vectors are defined. Press the **Plane** button in the top right corner of the model window; this will create a plane in which we can plot the vectors in two dimensions. Select the plane as the **Location**. Retain **Symbol distribution** as **Uniformly distributed** and input a value between 2000-4000 for **Approximate number of points**. Change the **Symbol sizing** in the **Appearance** section to 0.35, and change the **Symbol length** to **Constant**. Press the **Play animation** button in the model window to see how these velocity vectors develop over time.

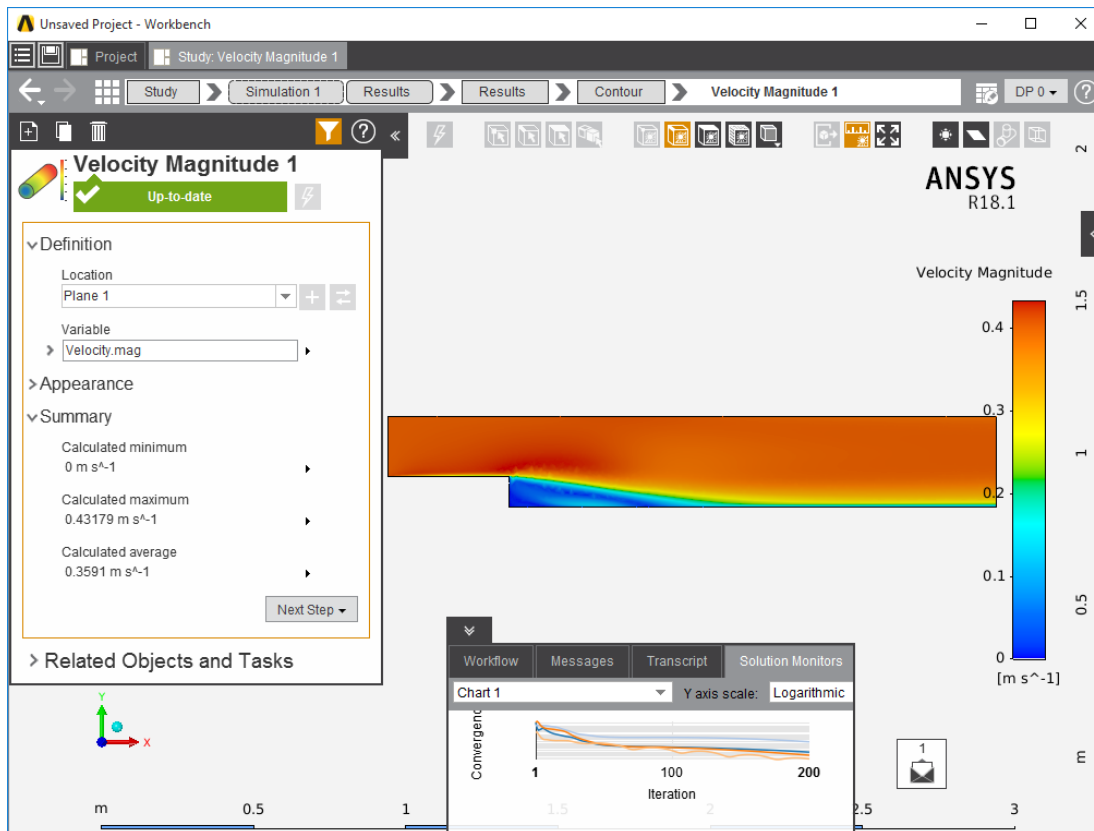


A zoomed in view of below the backwards facing step shows the recirculation phenomenon that was expected.

To plot the pressure field, create a contour on the plane that you created earlier. Return to the **Physics** task, select **Contour** in the **Add** drop down menu, choose the plane to map the contour onto, and assign the **Variable** to be **Total Pressure**.



The same thing can be done to plot the velocity field as a contour. Repeat the steps above to create the **Contour**, but make the variable **Velocity Magnitude** instead of **Total Pressure**.



[Go to Step 6: Verification](#)

[Go to all ANSYS AIM Learning Modules](#)