FloWizard V2:
Calculating at a Distance

*By André Bakker, FloWizard Product Manager*

FLOWIZARD WAS RELEASED LAST YEAR, and was received by our customers with enthusiasm. Many liked the concept of having different software choices available from Fluent for users with different needs: FLUENT for analysts and researchers, and FloWizard for designers. The ability to share case and data files between these packages was also a big plus.

Whenever a new product like FloWizard is released, the early adopters often provide a lot of useful feedback, which is then used to design the next version. The upcoming release of FloWizard 2 addresses many of the requests from this important group of inaugural users. Included among the new features are the ideal gas law, additional postprocessing capabilities, readers for additional file formats, and the ability to run calculations remotely instead of locally.
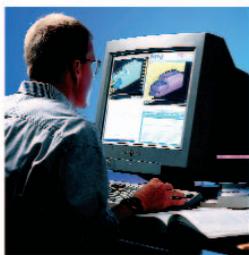
FloWizard users can now calculate subsonic and transonic compressible flows using the ideal gas law and FLUENT 6.2's segregated solver. Iso-surfaces, arbitrary plane cuts, and point probes have been added as additional postprocessing options. Improved CAD connections with a direct reader for ParaSolid files (from SolidWorks, SolidEdge, and Unigraphics) are available to make geometry import more seamless. FloWizard 2 offers additional file import options, including CATIA V5 CAD files, and NASTRAN, PATRAN, and ANSYS meshes.

Another exciting new feature is the option to perform calculations on Fluent's RSolve remote simulation facility. RSolve offers low-cost, high-end, supercomputer-like performance to Fluent users, without all the hassles usually involved in acquiring and operating a computing center. When using RSolve, FloWizard is run on a local PC, as before. For CPU intensive tasks such as meshing and solving, however, the calculations can be performed on the remote server. This offers many advantages over performing these tasks on the local PC. First, the PC remains available for tasks that require user interaction, such as creating the CAD geometry for the next CFD analysis. Second, RSolve can handle much larger problems than a single PC can. Third, the turnaround time is much faster because RSolve offers the option to perform the calculations in parallel on a large number of processors. Even if sufficient computer power is available in-house, there may be times when additional capacity is needed, during times of peak loads or for projects with short deadlines. For these instances, RSolve offers a safe and reliable solution.

Just like everything else in FloWizard, performing calculations on RSolve is easy. First, FloWizard asks for an RSolve username and password. These can be for an existing account, or a new account can be created specifically for use with FloWizard. Second, it asks if meshing and/or calculating will be done locally or on RSolve. If RSolve is chosen, FloWizard will handle the rest. It will automatically upload calculation files over a secure connection, have RSolve perform the calculations, and return the results. There is no need to manually set up or manage the computing jobs. Meanwhile, the local PC is free to perform other tasks, such as preparing another case or reviewing and postprocessing the results from previous calculations. ∎
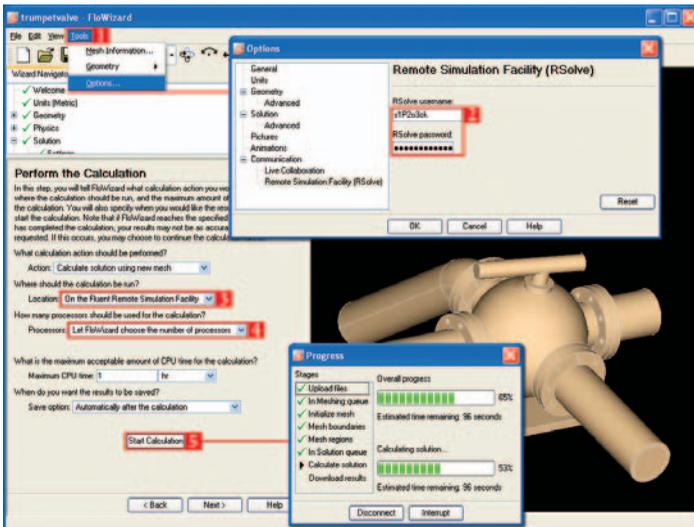
Enabling RSolve from the FloWizard interface

RSolve allows computationally demanding calculations to be performed on a remote server