

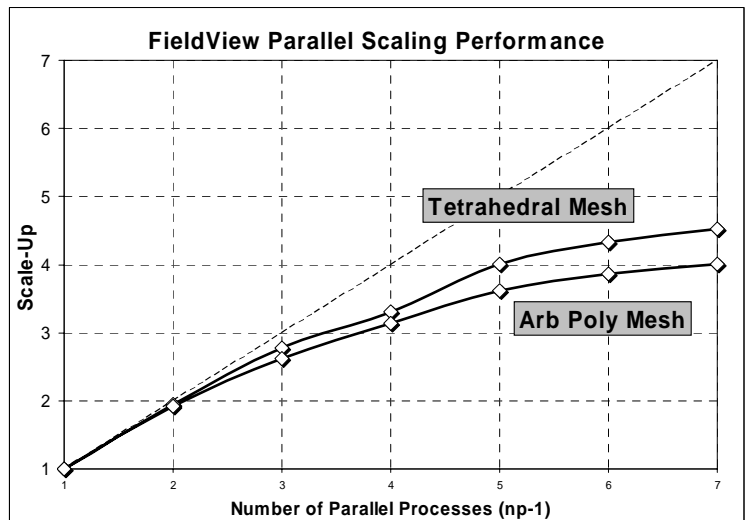
FieldView 12.1 is a point release, created to increase your productivity with CFD!

SUMMARY OF NEW FEATURES

- Realize dramatic improvements with changes to FieldView Parallel
- Apply Background Images containing pictures and company logos
- See more realistic rendering with new Lighting Controls & Anti-aliasing
- Use Multiple Colormaps to make compelling distinctions between variables
- Employ 'Tufts' to provide a new way to visualize transient data
- Display extended variables & gradients using the AcuSolve™ Direct Reader
- Customize the appearance and content of Scalar Legends with new controls
- Reduced Surface Flow export time
- Partitioned File Parallel Reader
- Apple MAC INTEL native port
- Critical fixes for WIN64, WIN VISTA

FieldView Parallel

Two trends are driving the ongoing development of our parallel postprocessing. One is that models continue to increase in size, and today, datasets containing 10 to 100 million elements are routinely used for individual design points in production analyses. The other trend is the availability of desktop hardware containing multiple processors. Multi-core, multi-CPU architectures are now quite commonly used. To meet your needs, and to embrace these trends in our CFD community, we have focused our development efforts on improving the performance of FieldView Parallel. As with earlier FieldView releases, licensing for up to 4 parallel processes is included on LINUX platforms without any additional cost. In the illustration at right, we show scale-up factors for reading unstructured data into FieldView. The test cases we developed contained either tetrahedral or polyhedral cells. These results show a scale-up factor of greater than 3x for the case of 4 parallel processes. In this release, we also resolved some reported problems displaying boundary surfaces, and, to handling surface based results. FieldView Parallel has exactly the same look and feel as FieldView since both products are based on the FieldView Client. Consequently, there are no limitations

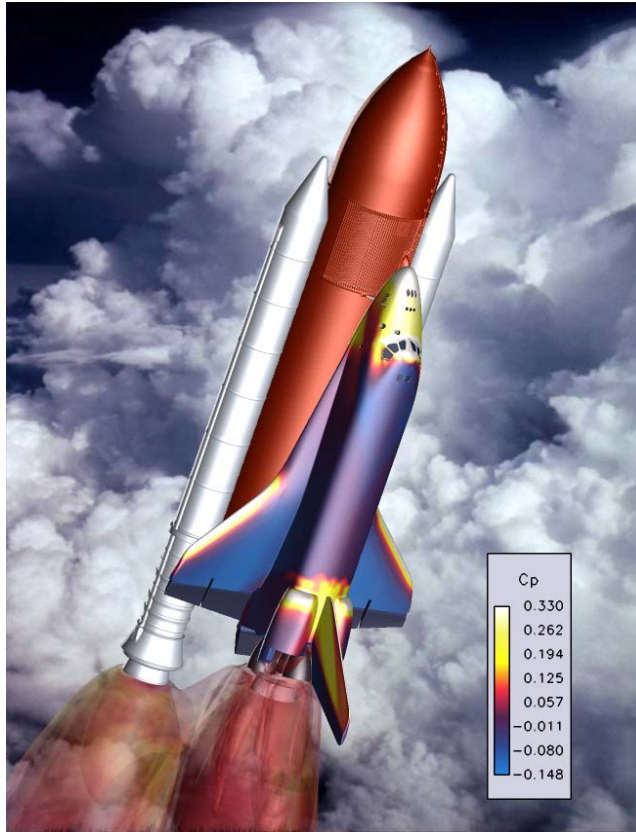


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whatsoever to applying RESTARTS or FVX programs seamlessly between regular FieldView and FieldView Parallel. If you have used FieldView Parallel in the past, or if you have not yet tried it before, we encourage you to give FieldView Parallel a try on your multigrid (FV-UNS or PLOT3D) datasets.

Image Backgrounds

This feature lets you place any image of your choice as a background in the FieldView graphics window. A wide range of formats are supported and options have been provided to let you stretch or fit the image in the graphics window. Script support gives you the ability to integrate your company logo into batch operations which you may already be using to generate your routine plots and illustrations.



Lighting Controls

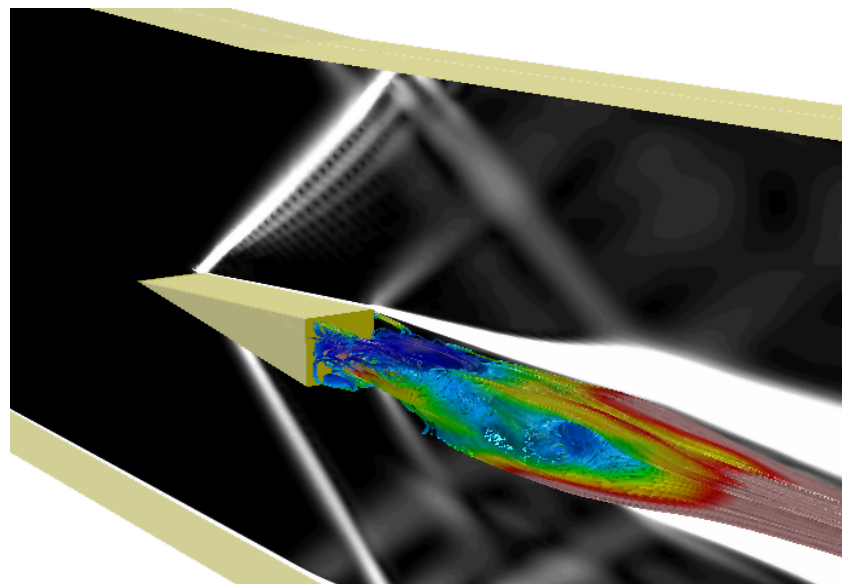
You can now change the levels of diffuse (direct) and ambient (indirect) light. These new features work with our pre-existing presentation rendering options to give you unprecedented control over the final appearance of your images and animations.

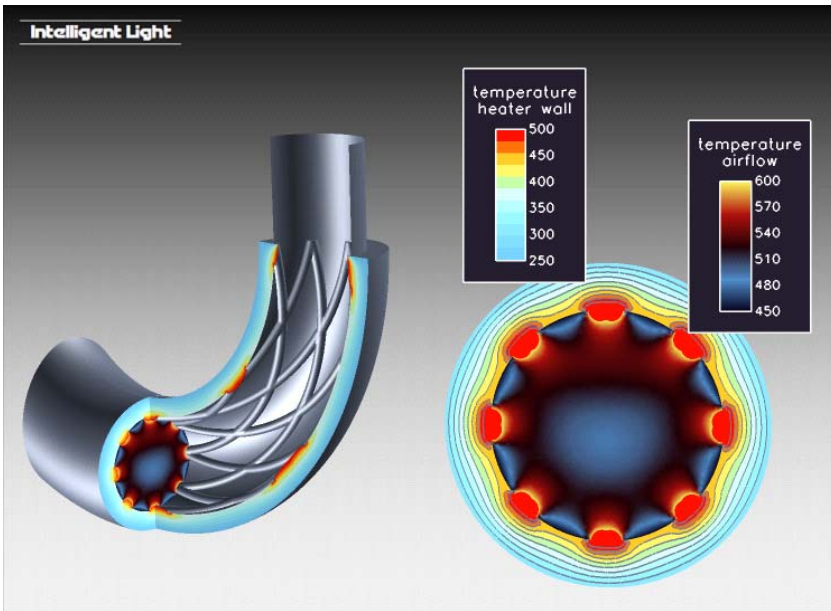
Anti-aliasing

For systems with up to date graphics hardware, anti-aliasing can now be applied to smooth the display of meshes, vectors, lines and text fonts. Legends will be much improved. For hardcopy output, anti-aliasing will be applied automatically to provide for the highest quality output.

Multiple Colormaps

It is now possible to use more than one colormap, or spectrum, to display the range of a scalar in an image. With the increase in the density of information contained within simulation results, colormaps can provide a simple and immediate way to differentiate physics. Simulations results from a scramjet (dataset courtesy of FOI) shown at right make use of two different colormaps. A gray scale map is used on a coordinate plane to show the shock wave reflections along the channel. A color-based spectrum is used to show variation in the axial flow speed along the trajectories of streamlines.





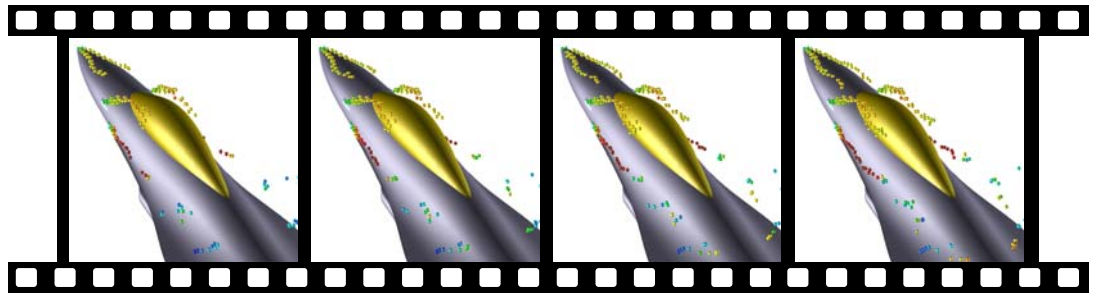
Legend Improvements

Several new controls have been added to change how legends can be displayed. Legends will now automatically display the scalar variable associated with them. A subtitle field has been designed to show either the position of the coordinate surface, the value of the iso-surface, or the integer index of the computational surface by default. When any of these surfaces are swept, the legend automatically updates to reflect the changing position or value. Additional control over font sizes, color, legend and spectrum borders, and backgrounds let you refine legends to suit your needs. In the illustration at left, temperature contours are shown

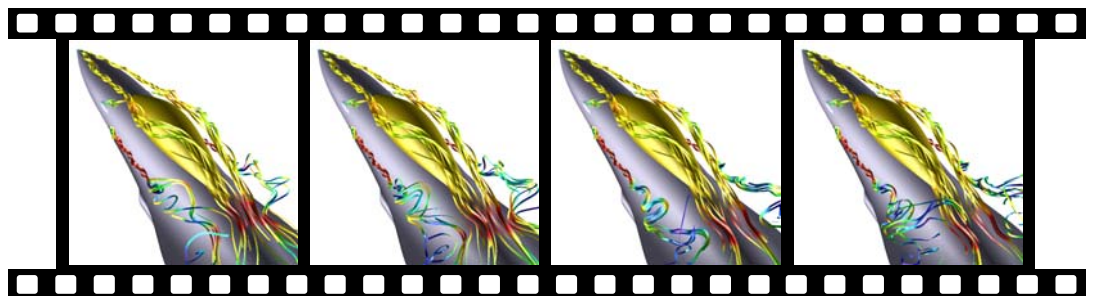
for a conjugate heat/momentum problem for flow through a complex heating jacket. Different color-maps distinguish thermal differences within the solid jacket wall from those in the flow domain.

Tuft Displays for Transient Streamlines

**Streaklines
(default)**



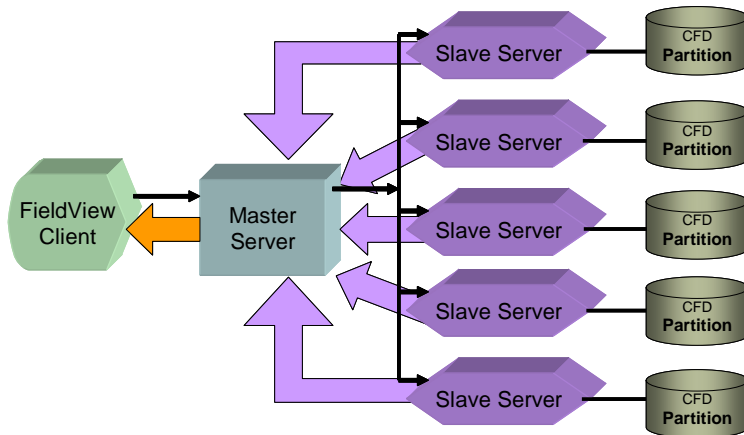
**Streamlines
(Tuft display)**



By default, FieldView will calculate streaklines for transient data; a typical illustration of these streaklines is shown in the upper sequence in the figure above. With FieldView 12.1, it is now possible to disable this automatic calculation, and instead, show instantaneous streamlines for each time step. By using time-limited streamlines with a ribbon display type, animations of transient data in which the streamlines look like 'tufts' can be created, as shown in the lower sequence. This methodology for visualizing transient data is well suited to depict external flows and to study ventilation patterns associated with air curtains in clean room applications.

Experimental Partitioned File Parallel Reader

Following along the theme of parallel improvements with this release of FieldView, we are including a capability to read partitioned data having the FieldView unstructured file format.



Partitioned File Parallel FieldView

A dataset is split into several different partitions, where each partition can contain one or more grids. Each partition may be located on a separate file system.

This is an advanced level feature, and a pre-requisite to run this feature is to first set up and configure the production release of FieldView Parallel 12.1.

Other Important Improvements

- A native port is now available for the **Apple MAC INTEL platform** running OS X 10.5.x (Leopard) and above. It features a 64bit SERVER capable of handling very large datasets.
- A **Critical Fix** to a problem encountered when attempting to calculate scalar colored surfaces on **WINXP 64** platforms with multiple cores is included in this release.
- Several problems reported for the **WIN VISTA** platform such as hostid resolution and printing issues have now been resolved.
- Two problems reported for **Surface Streamlines** have been resolved. The first is a **significant reduction** (with reports of up to 1000-fold speed-up) in the time required for export. The other fixes the previously incorrect export of scalar variables.
- The **limit** of maximum steps calculated per **streamline** seed has been **increased from 4,000 to 10,000**. Streamlines previously observed to stop prematurely are now expected continue further in the flow domain. This increased limit may lead to longer streamline calculation times.
- Several improvements have been made to the **AcuSolve™ Direct Reader** which include support for **nodal output** including the extended (or gradient) variables, derived, time-averaged and running averaged variables. Support for regions and streamline wall marking is also added.
- FieldView was returning the following **error message: SYS_ERROR_VALUE Argument with an improper value** when the Fluent Direct Reader was used to read certain .cas/.dat datasets. This problem has now been resolved.
- The utility **fv_vnc** which permits remote headless operation of FieldView has been updated to overcome problems which have been reported by users.
- An assert encountered when using **FVX** to create RTZ streamlines has been fixed.
- An error reading periodic **STAR-CD particle trk** files has now been fixed.
- A problem in creating a 2D Plot on 2D PLOT3D data has been fixed.