

What's New in FieldView 12.01

FieldView 12.01 is a maintenance release of FieldView. Since the release of FieldView 12, we have solved several small known issues that we feel will have a significant impact on your daily work flow. As a maintenance release, this version of FieldView will require **no new passwords**. This release is available via **download** to customer members of ilight.com. Registration is straightforward and customers who have previously registered on ilight.com will simply log in to retrieve the download.

Our FieldView 12 release uses many of the advanced features of today's generation of graphics cards. With this maintenance release, we have streamlined our graphics code thus leading to a more reliable product with what we hope will be a noticeable improvement in overall rendering and display. If you have experienced any graphics related problems with FieldView 12, we strongly recommend that you upgrade to this version.

The predominant motivation for this release has been to resolve problems reported by you, our customers. These fixes include:

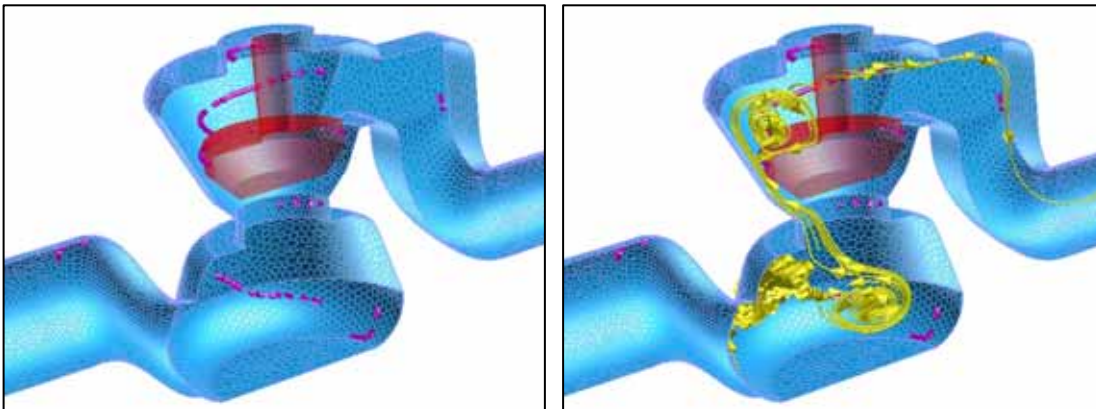
- Streamline calculations which produced a message containing `../fv_mainline/src/ui/stream/streamlines.c : 1199 maxpts[slot] > 0 --assert failure` is now fixed.
- Incorrectly drawn contour lines, often accompanied by the error, 'World bounds are huge – probable bad data values' has been fixed.
- Gaps observed in 2D XYZCurve plots, generated properly in earlier FieldView releases, have been resolved.
- Two problems related to saving images in batch mode, including the case in which the specified image size is large than 1280x1024, have been fixed.
- A crash while attempting to read a FV-UNS file containing more than 250 million elements has been resolved.
- An assert, `../fv_mainline/src/ui/data/dataset_info.c : 1102 IsExistingDatasetNum(dsnum) || transient_time_step_change_get()`, resulting from a FieldView Preference Restart has been fixed.
- The erroneous behavior of the Bitmap Warning Pop-up, which continues to get displayed after being dismissed, has been fixed.
- Streakline calculation failures for unstructured datasets, when carried out for either moving mesh cases, or for cases when cell counts changed from one time step to the next have been resolved.
- The newly introduced FieldView 12 feature called **Linked Transient** was causing FieldView to crash for datasets without solution times. This has now been fixed. Recall that the intent of this feature is to generate a master time line, ordering all of the time steps across multiple datasets in increasing order.
- The newly introduced FieldView 12 FVX utility, **length_fraction.fvx**, was incorrectly omitted from the distribution. It can now be found, along with several other FVX utilities and some useful formula restarts, including the Wind and LS-DYNA formulas, as part of the standard FieldView installation at `$FV_HOME/fvx_and_restarts`.
- Some display problems with vector arrowheads were fixed.
- An assert, `../fv_mainline/src/ui/read_save/line_plot_restart.c : 1277 false`, while attempting to recall a 2D Plot restart has been fixed.
- Some problems that occurred for streamline wall handling of pyramid elements has now been fixed.
- A crash on WINDOWS during an attempt to create a .miff file has been resolved.

For certain transient CFD solutions, it is possible for FieldView to store many of the time steps concurrently in memory. This provides the ability to rapidly sweep thru transient sequences. To help facilitate this postprocessing methodology, which can be easily automated with our scripting and FVX™ programming

capability, we have increased the limit on the total number of iso-surfaces for a FieldView session tenfold from 40 to 400. In particular, if you are a FLOW-3D® user, we highly recommend this approach and encourage you to contact Customer Support to obtain further details. Another note for FLOW-3D® users is a bug fix to allow valid formulas that worked with the legacy FLOW-3D® direct reader to be applied to the enhanced and improved FLOW-3D® direct reader that was released with FieldView 12.

Some shortcomings for our support for Arbitrary Polyhedra were not explicitly described in the FieldView 12 release. It is our plan to resolve these matters in subsequent releases. Most notably, it is not possible to calculate vortex cores using either the vorticity alignment or eigenvalue methods, nor is it possible to calculate shock surfaces with our feature detection tools. A bug resulting from an attempt to calculate vortex cores using the Vorticity Alignment method has been fixed so that FieldView no longer crashes. A work-around to calculate vortex cores for these datasets is to tetrahedralize the models during read-in by setting the environment variable, **FV_TET_CONV**. Vortex cores can then be calculated and exported as FieldView Particle Paths. By reading the original dataset containing arbitrary polyhedra in 'Replace' mode, the Vortex Cores calculated for the tetrahedralized version can be read back in and displayed.

Attempts to calculate transient streaklines for cases containing arbitrary polyhedra were observed to cause the following assert: `../fv_mainline/src/ui/streak/access.c : 155 false - assert failure`. This problem has been fixed with this release, and streaklines are expected to work well with data containing arbitrary polyhedral cells. Finally, we note that FieldView UNS exports from FLUENT for datasets containing arbitrary polyhedra mark all internal boundaries as streamline walls. As a result, streamline trajectories will look incorrect when calculated in FieldView. At present, the work-around to obtain streamline trajectories is to turn streamline wall marking off, using the FieldView environment variable, **FV_IGNORE_WALLS**.



Vortex cores calculated on a tetrahedralized version of the Arbitrary Polyhedral mesh (left) and streamlines, seeded on the imported cores, calculated for the arbitrary Polyhedral mesh (right)

As a related aside concerning FieldView environment variables and command line switches, we have made an electronic pdf version of our Quick Reference card available on our website's Customer Support page. If you have not received a Quick Reference Card as part of the FieldView 12 delivery, we recommend that you obtain the posted electronic copy at your convenience.

We feel that the improvements and fixes above will have a significant impact on your productivity with FieldView, and we have worked as quickly as possible to deliver these benefits to you, our customers.