

ParaView III GUI Feedback

Control the Beast

November 29, 2006

John Greenfield

- **Feedback from Dean Dobranich and Mike Wong**
 - Based on Oct release
- Other feedback
- Look at the current release



Dean Feedback

- The Exodus reader did not give any status whatsoever when loading. This is probably the same as bug #3426.
- In order to show the color bar, we had to pull up the “Edit Color Map” dialog box. This checkbox should really be on the GUI under the “Display” tab. There is a toolbar button to toggle the color bar, but it is not obvious. The button says “SbV”, which means nothing, but I presume this will be replaced with an icon soon. However, the toolbar toggle status is not updated when the color bar is enabled with the dialog box.
- Lots of times the rendering went all screwy. It predictably happened when enabling the color bar through the “Edit Color Map” dialog box. It also happened when selecting cells through the rubber band select. The 3D rendering artifacts polluted the surface with black streaks. It may have been Z-buffer fighting. It may also have been the position, normal, and connectivity array information getting mixed up to generate oblong polygons and/or incorrect normals. Another issue that happened at the same time was that the red border around the active view disappeared. I cannot replicate this behavior on my desktop. John predicts that this issue is caused by a 32-bit library accidentally linked into the 64-bit build.
- Feature request (very important to him): the ability to select and cull an Exodus part by selecting it with the mouse. Dean visualizes Exodus data with, literally, hundreds of blocks. He has little notion of which blocks correspond to the parts on the screen. This feature could mean the difference between him using ParaView and him using something else.
- Select works for Dean on 64-bit machine, but selected elements don’t show up in element inspector – it seg faults on 32 bit linux machine. Selecting cells did not fill the element inspector. Cannot replicate this problem on Windows desktop.



Dean Feedback Continued

- There needs to be a way to add annotation that gives the current time. This is captured in bug #3058. Need time annotations on screen plus on tool bar.
- The image save option in the File menu is named ``Save Screenshot.'' It should probably be named ``Save View Image'' to be consistent with ParaView 2.
- The ``Save Screenshot'' function failed to make a valid .jpg or .png (or at least, one that can be read by xv). It works fine on Windows desktop (when read back in with IrfanView). It does make .bmp successfully.
- When ``Save Screenshot'' finally did save a valid image (to a .bmp file), it captured the file browser dialog box.
- Need hot key for accept.
- Need select multiple blocks method (i.e. don't want to select blocks one at a time). See ensight select or samba select as examples. Basically want drag outline select by box and/or circle, etc to select blocks which can be turned off and on visibility. Also want invert selection option. This is a big part of how Dean works and is a major factor that makes him use ensight. The block selection widget is not very friendly when trying to select a contiguous range of blocks (that is, do a shift click). I also noticed (on my Windows machine) that to select one thing you have to position right over the checkbox as opposed to clicking anywhere on the line. The same is true for the other Exodus reader lists (variables and node/side sets).
- It is not evident what the ``visible'' option means for 3D widgets.
- Took 40 min before we got a seg fault (multiple undoing multiple windows after closing the window – had two display windows, did many filters in both, closed one then did many undoes got seg fault).
- When a new filter is created, the new data does not have the same coloring as the input data (bug #3864).
- The threshold filter does not turn off the visibility of its input (bug #3896).



Mike Feedback

- Feature Request: Editable state – want to be able to save a default state to start up in each time. Probably handled by custom filter.
- The file prefix/pattern/index parameters of the Exodus reader are rarely ever used. Mike suggested we hide or remove these parameters. I suggest that we simply move them to the bottom of the object inspector where they will be out of the way but available if needed.
- Allen complained that the word ``Filters'' throws analysts off. For them, ``filters'' has a specific meaning different than what we mean by filters. However, no one really had a better name.
- The following bug was found: Load in the can dataset (leaving it at timestep 0). Click the last time step toolbar button to go to the last time step. Add the Cut filter. When the Cut filter is accepted, the can goes back to the first time step.
- Feature request: select cells through model. Right now when you select with the rubber band, you only get cells visible on the surface. There should be another selection mode to select all cells in the frustum specified by the select.
- Bug/Feature Request: selected cells mirror on all views. In the case of a view where the selected area was not loaded/displayed this can be a bad thing. Need some way to choose between mirroring and not mirroring.
- Bug: A change in the timestep of an upstream component did not automatically update a downstream histogram appropriately. To update the histogram, we needed to make a change to the Extract Histogram filter's parameters in the object inspector.
- Feature request: ability to print plots and export them to image (or pdf) formats.
- Feature request: ability to dump plot data.
- Feature Request: added calculator functionality (Example: cylindrical component input converted to vector field in Cartesian coordinates.)
- Feature request: handle face/edge centered data. We should talk to Dave Thompson to get a more clear idea of how he is handling that now (probably making 2D and 1D cells). Eventually, we will need to modify VTK's data types to handle this, but this is not in the short term.



Mike Feedback (cont)

- Dave Rogers used to attend the regular Alegra/HEDP meetings, which gave customers like Mike and Allen warm fuzzies. Some one should pick up on that. Perhaps David Karelitz, who is the V&V milestone lead.
- Allen has a beef about the lack of mathematical descriptions of what the ParaView filters do. For example, how are point data converted to cell data in the PointDataToCellData filter? When the detailed documentation is created, this information should be added (or at least point to a reference where it can be obtained, like the VTK textbook).
- Feature request: make the default point size bigger. Mike and Allen were making data with vertices, and they found it very difficult to see any of them. They eventually gave up and used a different technique. They were not aware of the point size display option, which would have fixed their problem. However, in any case they felt that a point size of 1 was simply too small to see to be useful in general. Whether this is a good idea is debatable, but we should at least discuss it.
- This old issue came up: the ability to separate the visibility of the side and node sets that come from the Exodus reader. Right now, there is this strange step where you open the same Exodus file multiple times to get a different object for side and node sets. It would be nice if the Exodus reader output had separated visibility controls. Perhaps as multiple outputs or as a multiblock dataset.
- When dealing with large data, you really need a good understanding of the consequences (in terms of memory and time) when using a filter. Right now, users need an expert in our group who knows the in and outs of the filters to direct which filters to use to keep the visualization from crashing from lack of memory.
- Feature request: Mike and Allen have some simulations that have several volume fraction field arrays. They want to color the geometry by the material with the highest volume fraction. For the near term, it would probably be sufficient to have a filter convert the volume fractions to a single field variable giving the index to the predominant material.



Other Feedback

- Need icons
- What items to iconify?
- What extra status items (time)?
- What else?



Demo

- Lets look at the current GUI and discuss.