August 2015

Data Analysis Services Group - *August 2015*

News and Accomplishments

VAPOR Project

Project information is available at: http://www.vapor.ucar.edu

TG GIG PY6 Award:

WASP Award:

John wrapped up year one deliverables for the WASP award, which mainly consisted of segregating the WASP API from the VDC code, writing documentation for the API, command line utilities, and the WASP protocol, and bundling everything up for distribution on the WASP site.

John worked on the year-end report to NSF with UCSD collaborators. The report has been submitted and OK'd by NSF.

KISTI Award:

Scott began work on KISTI's request for 3D Quad-Buffered rendering for VAPOR 2.5. He completed an implementation that used an NVIDIA document as a model to calculate the stereo pairs. This included GUI code, undo/redo support, and all Params and EventRouter requirements. However this implementation did not seem to be sufficient because it did not behave in an intuitive way. We decided to strive for an implementation that would allow the user to apply parallax that went on a scale from -1 to 1, where the extremes would cast the scene either entirely in front of the screen, or entirely behind it.

Scott wrote documentation for the "embarrassingly parallel" data conversion scripts that are due in the KISTI Y5 contract. Scott asked the Consulting Services Group for any suggestions and received positive feedback from BJ, Dick, Rory, Dan, and Davide. John gave the document a final review before the document and its associated scripts were sent to JinHee Yuk at KISTI for testing.

Development:

2.x

Scott made changes to the way that the text-renderer handled OpenGL errors so that it called glGetError() until it returned GL_NO_ERROR

Two bugs were reported with the GRIB converters this month. The first was that NOAA's NOMADS data were unable to be converted on Windows 10 according to a user named Matthew Faerber. However he was able to convert his data using Windows 8.1. The second bug was due to the fact that some GRIB files use JPEG2000 compression on their contents. The GRIB_API library must be built with either the JPEG2000 or JASPER libraries to support this function. It is still indeterminate whether we will rebuild the GRIB_API library to support these files.

Scott implemented the ability for VAPOR's GRIB converters to handle gaussian grids. He also added support for VAPOR to give unique names to duplicate variables in a GRIB data set, which is a problem with KISTI's files that do not contain originating center information.

Alan implemented two features for 2.5 release: A transfer function in the Barbs panel, and a mapping of contours onto the terrain. These features were also ported to 3.0, which required making extensive modifications to the 3.0 transfer function editor.

John performed some refactoring of the GeoImage class and derivatives, relocating the state saving to the params directory in preparation for migrating to 3.x.

John refactored the DataMgrMPAS class to use the NetCDFCollection class to read NetCDF data rather than using CDI. The former transparently supports data sets that are split across multiple files.

3.x:

Scott updated his UML diagram according to the 3.0 meeting notes that were collected through the month.

Alan implemented a vizfeatures panel in 3.0 and we held several discussions of how we want user preferences and vizfeatures to be shown in the 3.0 GUI. We came up with a plan for making these improvements to the 3.0 GUI

Alan implemented image capture and timestep animation and session save/restore for 3.0

Administrative:

Education and Outreach:

visitors:

Software Research Projects

Feature Tracking:

Data compression:

John and Samuel met with Alison Baker and her team to discuss rerunning their 2013 climate data compression paper using SPECK. Samuel began setting up a tool chain to run the experiments. John modified the nccompress command to support POP data with missing values.

Accepted for publication at LDAV: Evaluating the Efficacy of Wavelet Configurations on Turbulent-Flow Data.

Production Visualization Services & Consulting

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ASD Support

- xxx

Publications, Papers & Presentations

- xxx

Systems Projects

Data Services

- xxx

Accounting & Statistics

- xxx

Security & Administration

- xxx

System Monitoring

- xxx

System Support

ML - Data Analysis & Visualization Clusters

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GLADE Storage Cluster

- xxx

Data Transfer Cluster

- xxx

Experimental Clusters

- xxx

Test Clusters

Storage Usage Statistics

NWSC+GLADE+Usage+Report

Other

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