February 2016

Data Analysis Services Group - *February 2016*

News and Accomplishments

VAPOR Project

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

WASP Award:

Scott spent the majority of his time in February working on a Visit plugin that supports the WASP file format. Obstacles overcome include:

1. A bug in the WASP data translator that resulted in compressed variables being reported as invalid
2. Finding a way to run a debugger on the plugin, which runs as a separate module from the Visit core application
3. Constraining the requirements to only support single-timestep files, since CF conventions do not specify a universal time variable

By the end of the month, Scott had a working plugin that could serially read data, and he was working on adapting the plugin to read independent blocks of the data.

John implemented command line tools for conversion between WASP and NetCDF data. Essentially, the tools allow a NetCDF file to be converted to WASP, selectively compressing some or all of its variables.

John attended the annual PI meeting for the SI2 award at NSF. He presented a poster on the WASP project there. A report from the workshop is forthcoming.

KISTI Award:

A draft proposal for Year Six funding was submitted to KISTI for review. After iterating over the proposal for a few rounds a final version has been sent to Contracts for review.

Development 2.x:

Two months after release candidate was published the stable release VAPOR 2.5.0 was released.

- Scott helped with the duties involved with releasing Vapor 2.5, which include fixing bugs 1235, 1236, 1237, and 1239. Scott also performed his share of regression tests, and did platform testing on Mac 10.10, Centos, and all Windows platforms.

Development 3.0:

We continued 3.0 code reviews, and Alan completed numerous code improvements to renderer and params libraries that were indicated in these reviews.

Alan has developed the new color bar feature for vapor 3.0, although we still need to provide the text rendering (with Scott's help) for the color bars.

Alan is refactoring the steady flow code to work with vapor 3.0.

John completed implementation of the CurvilinearGrid class needed to represent curvilinear grids inside of vaporgui. The new class will facilitate the process of rendering structured data in vaporgui without first regridding to a regular grid. The new class was also integrated into the DataMgr.

John worked with UCSD to help them sort out some issues with the WASP API usage.

Administrative:

Scott explored new options for Vapor's forum, created a google forum which is currently being reviewed by the team.

John opened an SEIII position to replace Alan after he retires later this year.

Education and Outreach:

Software Research Projects

Feature Tracking:

Climate data compression:

John continued to advise Samuel on his climate data compression experiments, and now, more recently, temporal compression of turbulence data using data sets provided by Pablo Mininni, and Leigh Orf.

Production Visualization Services & Consulting

Kleypas ocean vis

The High Performance Futures Lab was used this month to find out whether Vapor would crash in the same way as on Geyser, regarding bug 1234. Scott found that the Futures Lab was able to successfully render flow lines without crashing, which has given him an avenue to proceed with Joanie Klepas' coral flow visualization. While the futures lab does have less memory than Geyser, the fact that it deterministically completes its renderings is sufficient for Scott to work around the memory bottleneck.

Scott also met with Leigh Orf to talk about future requirements that may be considered for Vapor. Leigh kindly offered his F5 tornado data to Scott, which was used to see if flow bug 1234 could be reproduced with a dataset other than Joanie's. Scott has also been granted permission to use this data for the XSEDE webinar in June. Leigh initially did not want the users to have access to the data since there is valuable science that still needs to be published. Scott asked if he could provide the viewers with a compressed version of the data for demonstration purposes, which Leigh happily agreed to, since he eventually wants to disseminate all of his data to the public.

ASD Support

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Publications, Papers & Presentations

Scott presented his current results and findings from visualizing Joanie Kleypas' CT-ROMS model to HSS on February 9th. Scott has scheduled a WIP seminar covering the same topic for May 11. Additionally, Scott has scheduled an XSEDE webinar to demonstrate Vapor's capabilities for ~June 15.

Jim Schiavone is now submitting the Hurricane Sandy article (jointly with Pete Johnsen and Alan) to the 2016 WRF workshop.

Systems Projects

Data Services

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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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