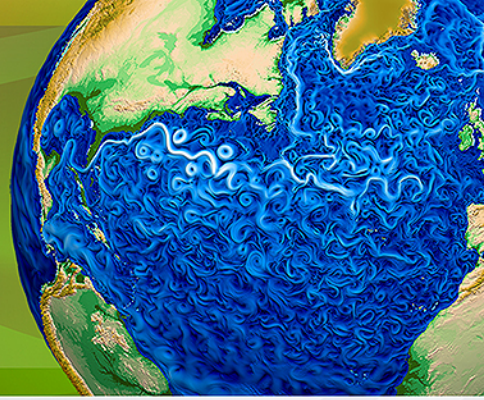

ACME
Accelerated Climate Modeling for Energy

ACME Web Dashboard

A component of the ACME Workflow

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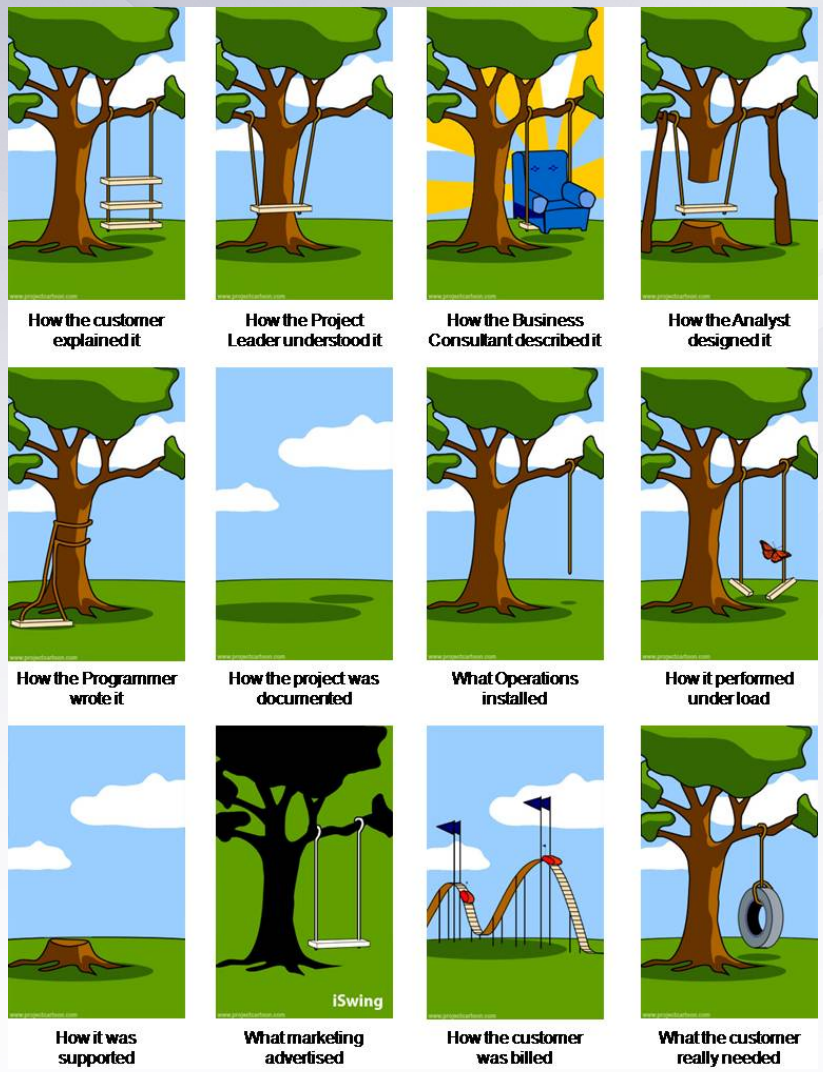
http://github.com/mattben

U.S. DEPARTMENT OF ENERGY

Outline

- What is the ACME Workflow Group?
- What would you say you do here?
  - Teams / Production
- ACME Web Dashboard
  - Backend (cdatweb) / Frontend / Integration
- Future Work
- Conclusion



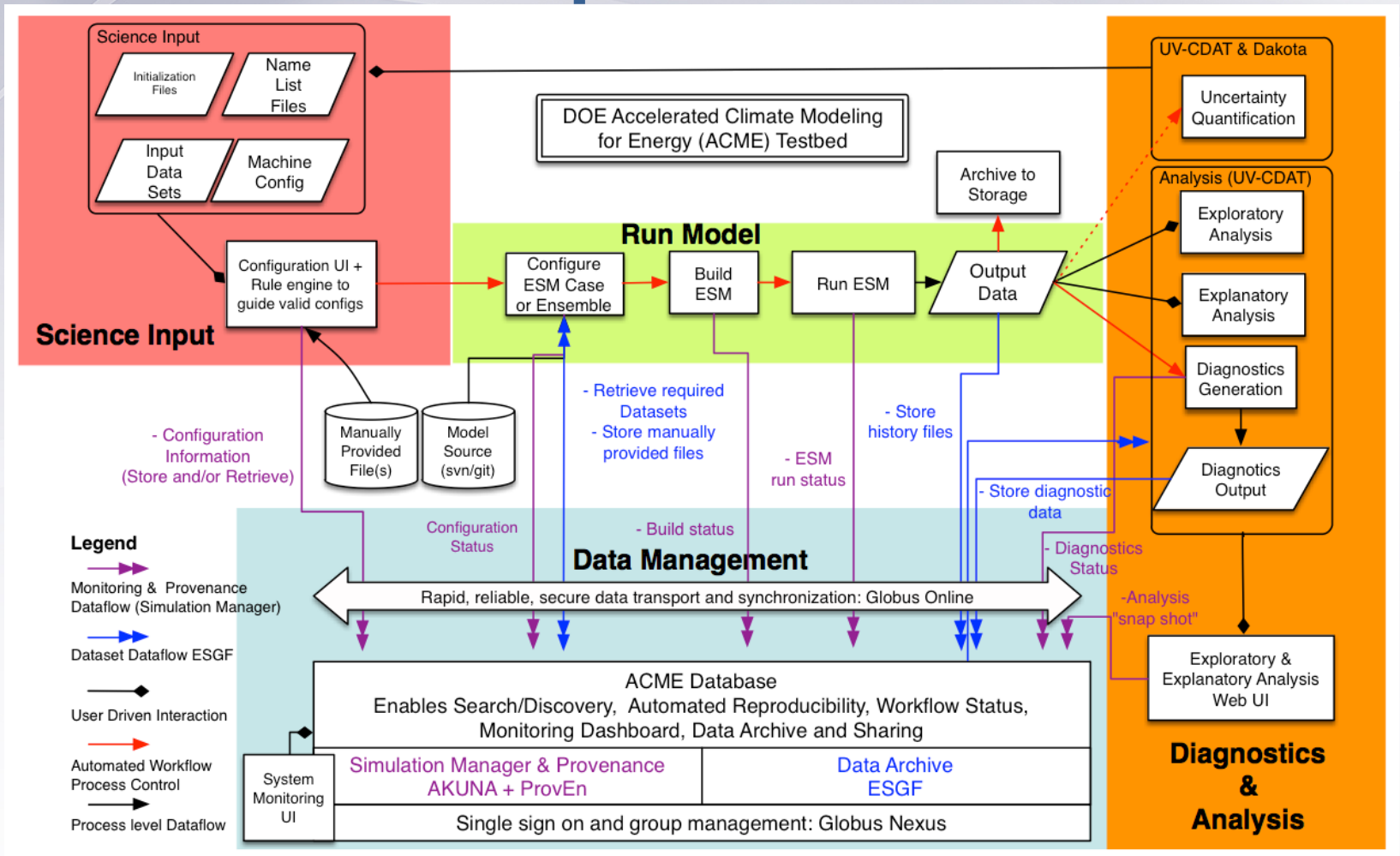
What is the ACME Workflow Group?

- Trying to make doing science (climate modeling) suck less.
- Improve user experience (one interface)
  - Finding Models
  - Modifying Models and their scripts
  - Finding Model Inputs
  - Submitting a job (Running a Model simulation)
  - Viewing job run time output
  - Viewing Model output and diagnostics
  - Publishing Model output
  - Model collaboration and modification for re-running

Workflow Group

The advanced model development, testing and execution infrastructure has been designed to strongly accelerate the model development and testing cycle for the new Department of Energy (DOE) Accelerated Climate Model for Energy (ACME) model, by automating labor intensive tasks, providing intelligent support for complex tasks and reducing duplication of effort through collaboration support. The workflow test bed environment will provide the group of collaborating DOE scientists with the data and computing infrastructure needed for rapid development and assessment of new scientific modules and provide a testing-to-production environment for simulation and evaluation (i.e., diagnosis, metrics, and intercomparison). Deployment and integration of existing software tools as well as the development of necessary new software capabilities to accomplish this will be driven by the scientific requirements to develop and use the overall coupled ACME model and the individual component models (i.e., atmosphere, land, ocean, sea ice, and land ice) within it. While some of the tools will be specific to a particular science question, wherever possible the workflow team will identify common methods and similar metrics across component models and in the coupled ACME model to foster synergistic developments that satisfy the requirements of both.

Workflow Group



ACME Workflow Working Teams

- User Interface (Web Dashboard)
  - Matthew Harris, Jon Beezely, John Harrny
- Data Management (Velo)
  - Carina Lansing, Bibi Raju
- Visualization (CDATWEB)
  - Jon Beezely, Matthew Harris
- Provenance (ProvEn)
  - Carina Lansing, Bibi Raju
- Rule Engine
  - Pegasus

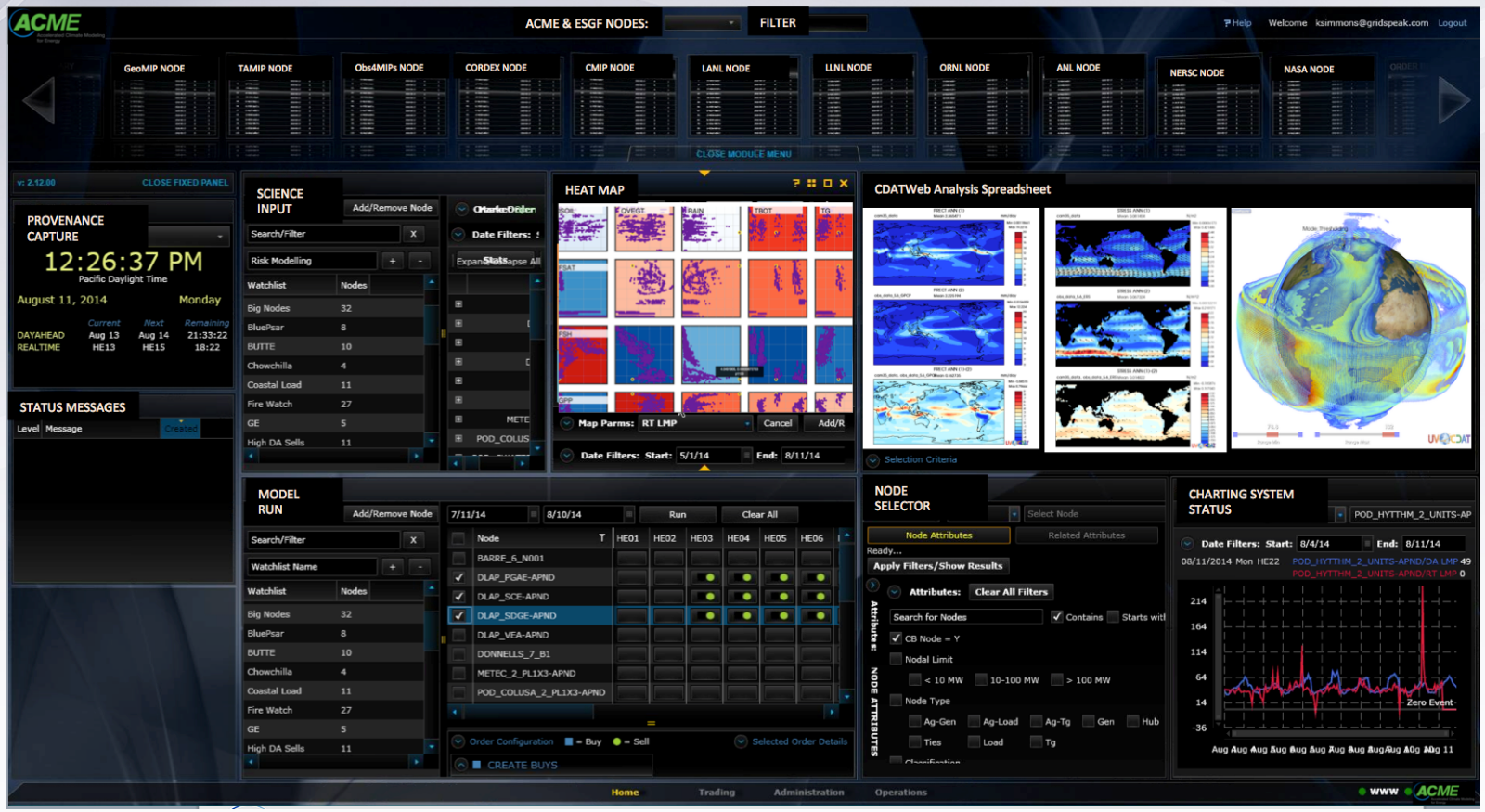
Team Collaboration

Team Deployment

ACME Web Dashboard

The ACME Web Dashboard is a web based dashboard that will allow users to login, view and edit files for running the model at the OLCF. The UI dashboard mockup can be seen on the Github wiki. In addition, the dashboard will allow users to view sample output such as simulated output and community data sets via ESGF, images using the diagnostics "Classic Viewer", and basic analysis output generated by CDATWeb. The UI depends on the development of other ACME workflow components. Meaning, it only calls underlying workflow component scripts or WPS APIs from the "Process Flow", ESGF, UV-CDAT, Velo, and ProvEn modules. Each call will be logged for later playback, sharing, or for running separately from the UI. ESGF (i.e., CoG) and UV-CDAT (i.e., CDATWeb) are on the verge of releasing their own independent UI. They will be among the first components to be incorporated into the ACME Web Dashboard.

ACME Web Dashboard



Tools

- Backend
  - Apache 2.4.10
  - Uwsgi 2.0.9
  - Python 2.7.8
  - Django 1.7.1
    - Recaptcha
- Testing
  - Robot Framework ??

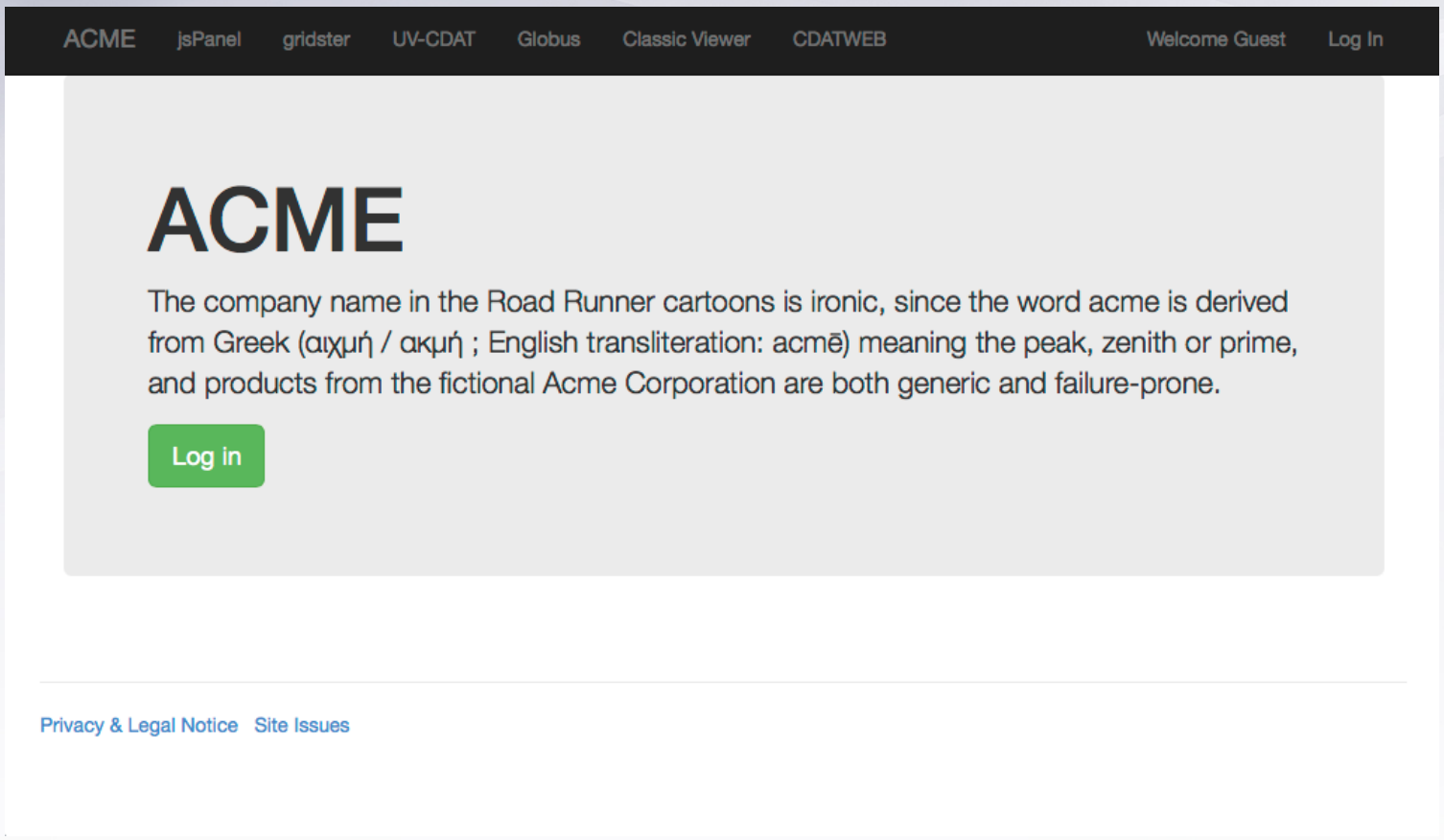
- Frontend
  - Bootstrap
  - Gridster JS
  - JQuery
  - Angular JS
  - JS Panel
  - Metro JS
  - HTML5
  - CSS3

http://acme-oui.github.io

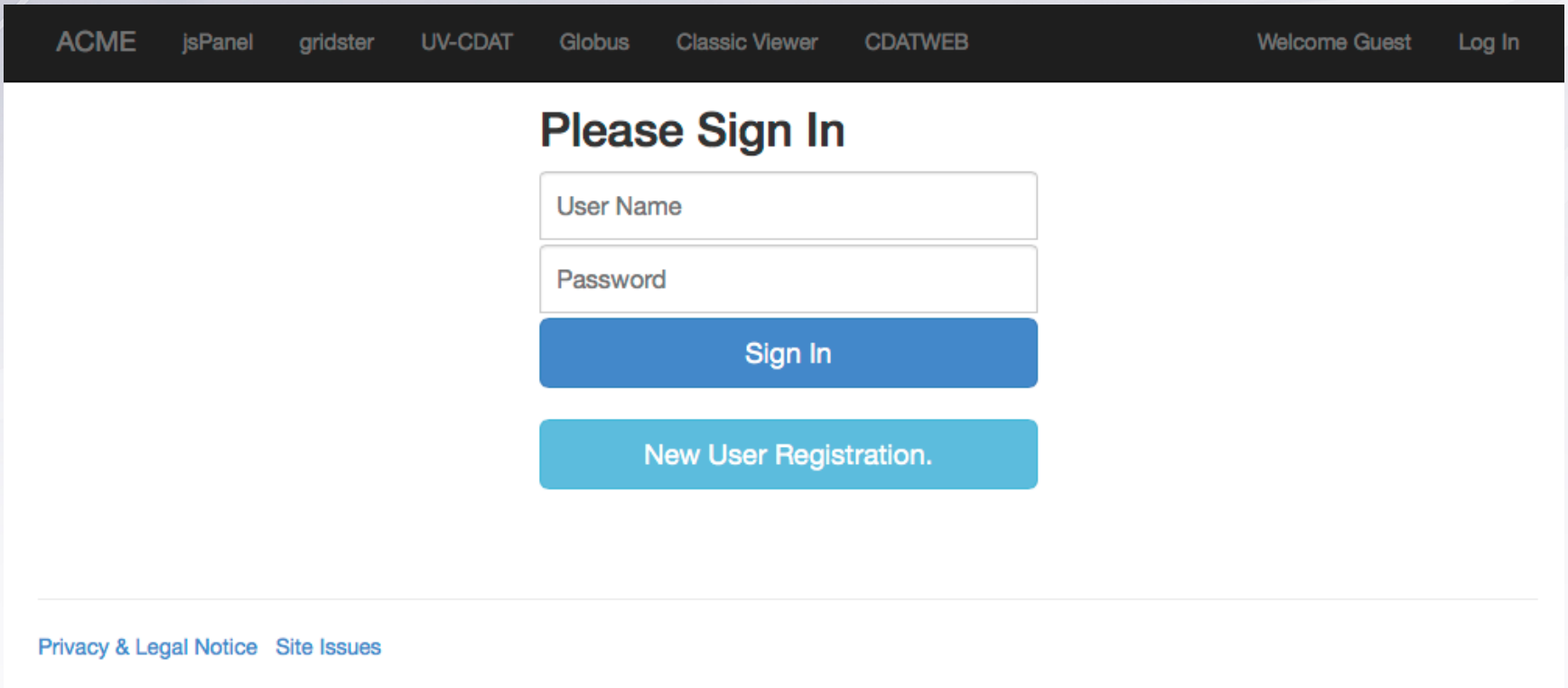
Current Working Release

- Production Server up and Running
- Dashboard Deployed (acme-web-fe.onrl.gov)
- UI in development
- Visualization Sever deployed (acmeuvcdat.ornl.gov)
- Deploying CDATWEB standalone (acme-cdatweb.ornl.gov)
- Integrating CDATWEB in to the FE this week
- Velo Data Node Deployed (acmetest.ornl.gov)
- Integration with Velo in coming weeks

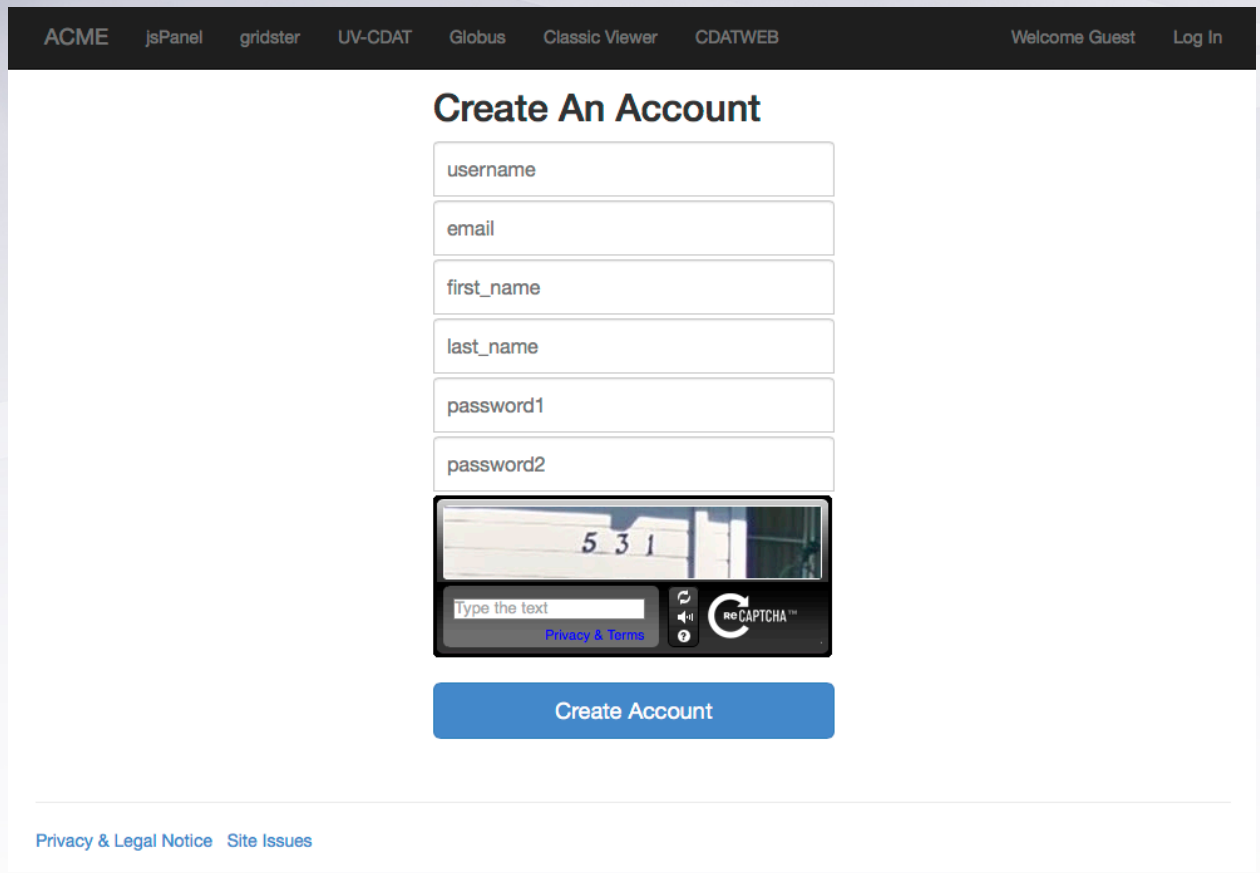
Landing Page



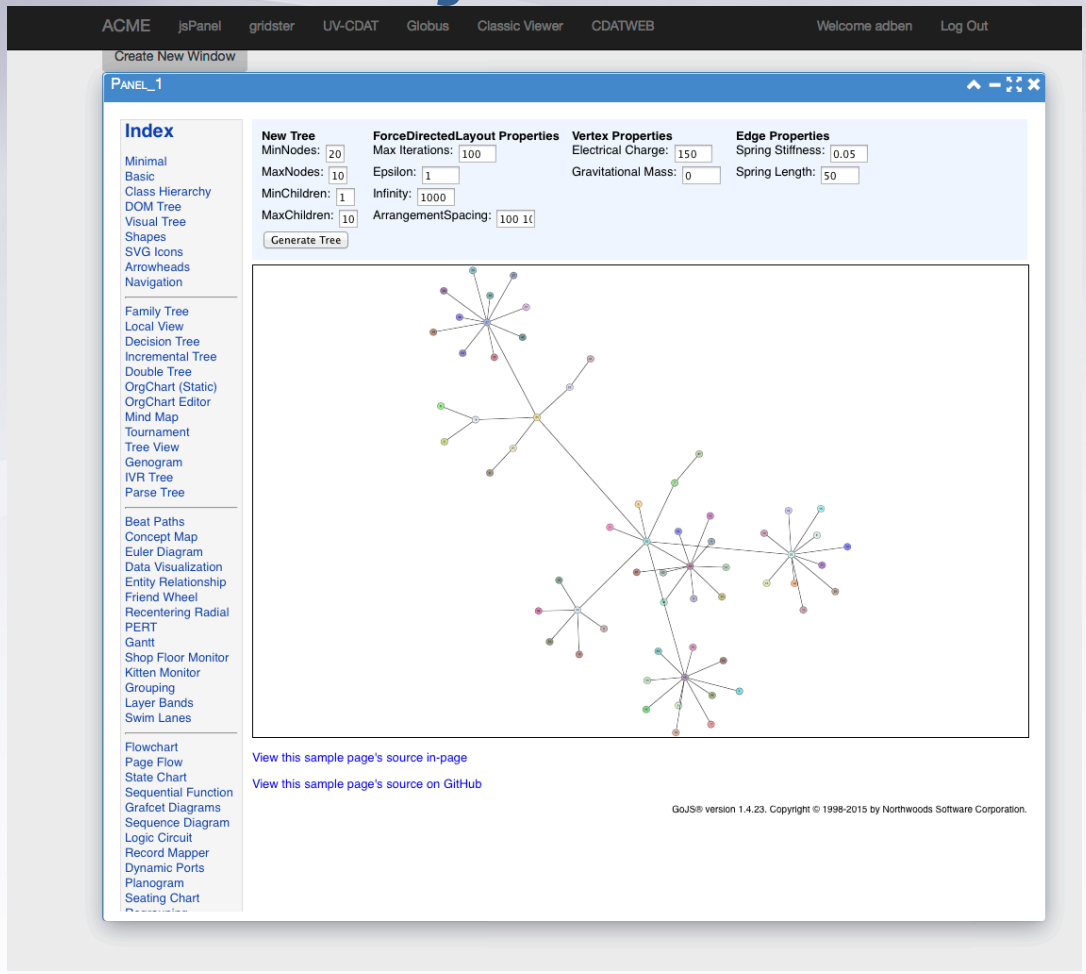
Sign In


ACME
jsPanel
gridster
UV-CDAT
Globus
Classic Viewer
CDATWEB
Welcome Guest
Log In
Please Sign In
User Name
Password
Sign In
New User Registration.
Privacy & Legal Notice
Site Issues

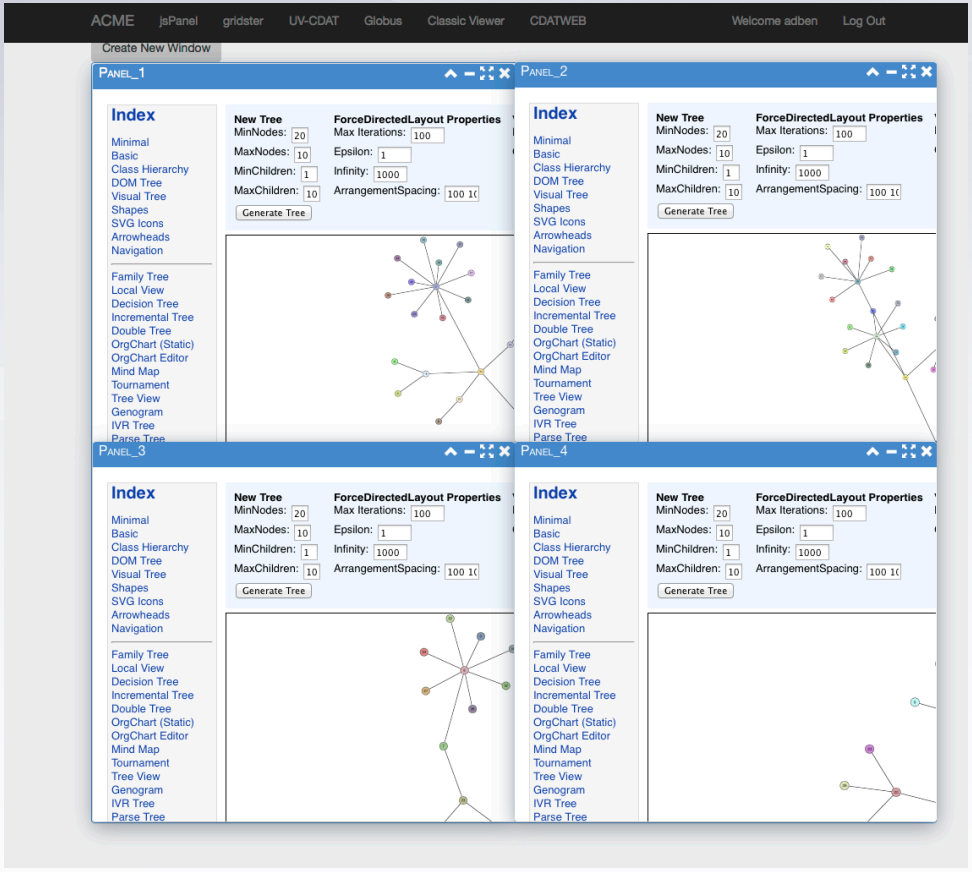
Registering



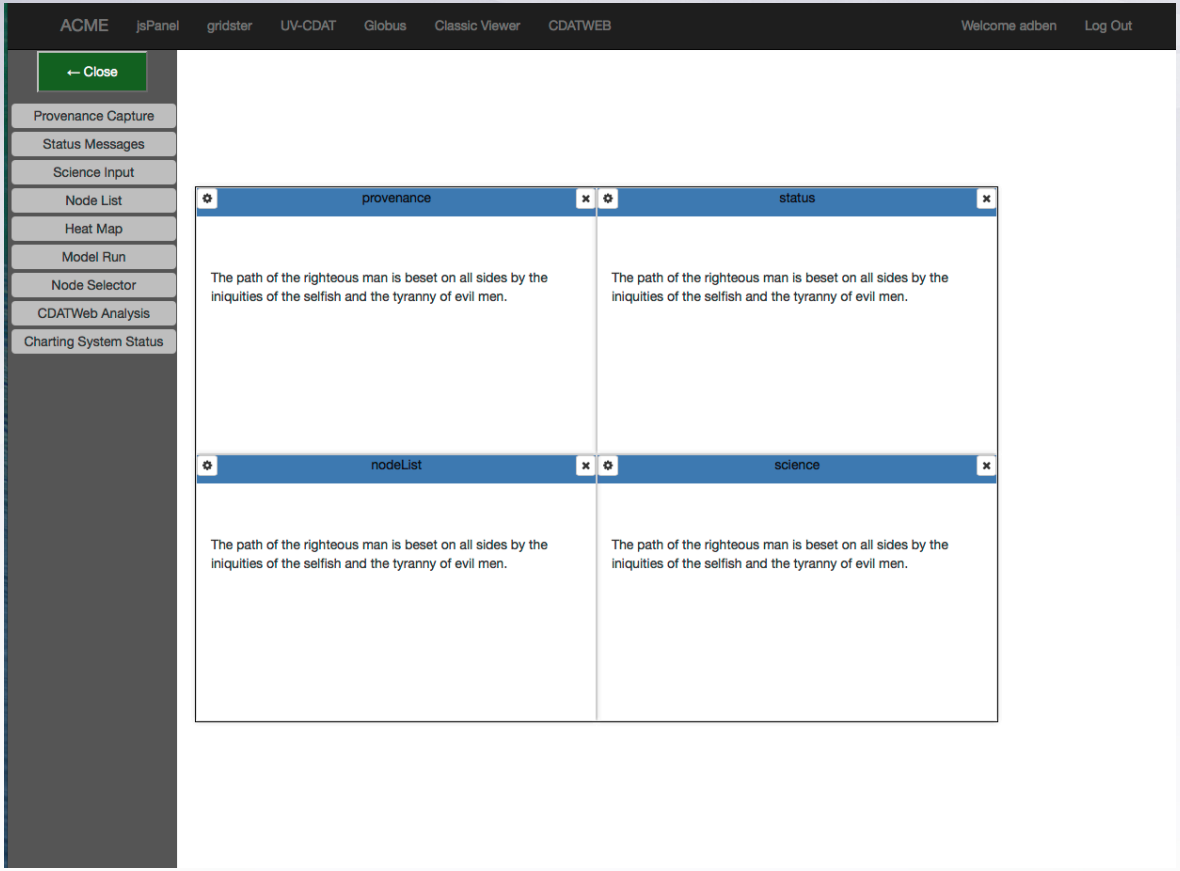
Dashboard v1 jsPanel



v1 jsPanel


ACME
jsPanel
gridster
UV-CDAT
Globus
Classic Viewer
CDATWEB
Welcome adben
Log Out
Create New Window
Panel_1
Panel_2
Panel_3
Panel_4
Index
Minimal
Basic
Class Hierarchy
DOM Tree
Visual Tree
Shapes
SVG Icons
Arrowheads
Navigation
Family Tree
Local View
Decision Tree
Incremental Tree
Double Tree
OrgChart (Static)
OrgChart Editor
Mind Map
Tournament
Tree View
Genogram
IVR Tree
Parse Tree
New Tree
MinNodes: 20
MaxNodes: 10
MinChildren: 1
MaxChildren: 10
Generate Tree
ForceDirectedLayout Properties
Max Iterations: 100
Epsilon: 1
Infinity: 1000
ArrangementSpacing: 100

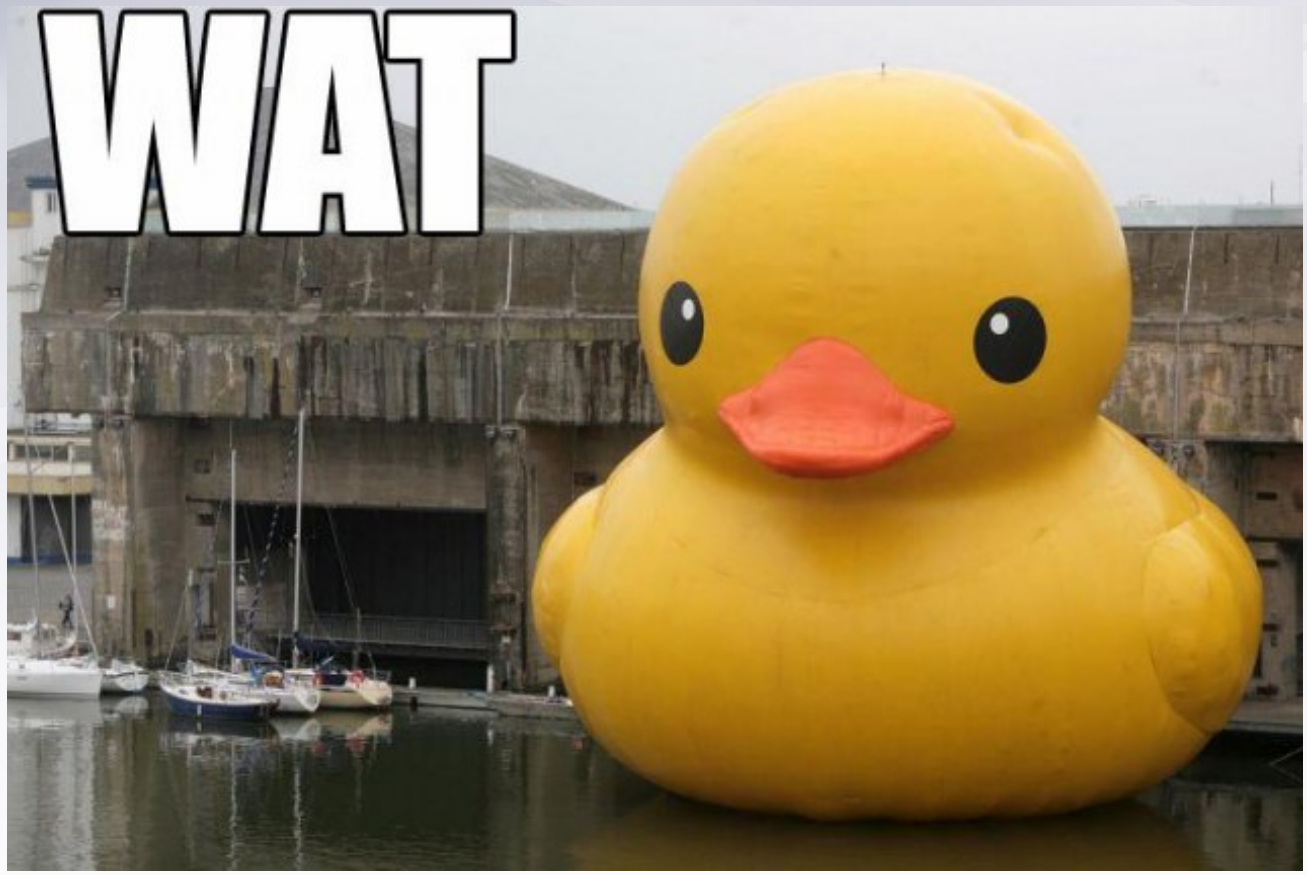
Dashboard v2 Gridster



Future Work

- Create Service Layer for all apps
- Robot Framework Integration
- Each app should have a stand alone UI
- Connect to all Services for Data movement
  - Publishing (ESGF)
  - Job Submission
  - File Transferring (Globus Online)
- User Beta Testing
- Reduce the number of user accounts / required log ins

Questions



Links

- ACME Web Dashbaord
  - http://acme-oui.github.io (site)
  - http://acme-web-fe.ornl.gov/acme
- Bootstrap
  - http://getbootstrap.com
- JQuery
  - http://jquery.com
- Gridster JS
  - http://gridster.net
- Angular JS
  - https://angularjs.org
- JS Panel
  - http://jspanel.de/index.html
- Metro JS
  - http://www.drewgreenwell.com/projects/metrojs
- Robot Famework
  - http://robotframework.org
- Jpype
  - http://jpype.sourceforge.net
- Python
  - https://www.python.org
- Django
  - https://www.djangoproject.com
- uWSGU
  - https://uwsgi-docs.readthedocs.org/en/latest

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