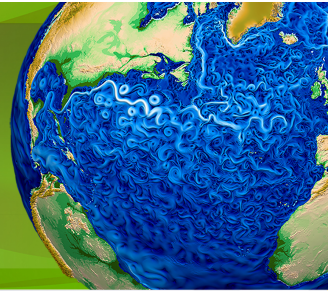# F: ACME Dashboard

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Objective

Supporting the ACME community in model development, testing and usage requires the utilization of many complex and ever-changing components from model modules and script version to computer systems and diagnostics. In particular, in collaborative development efforts it is often difficult to keep track of the latest version of specific model and scripts, which set up parameters where used by collaborators or which runs still need to be completed. The ACME Dashboard is an integrated development environment that aims to support the required 'book keeping' and coordination effort by integrating secure resources access (storage, computing), component registers (data, models, diagnostics, workflows, etc.), provenance (usage information) and work execution (e.g., run workflow, use diagnostics) in one graphical environment—as shown to the right. →
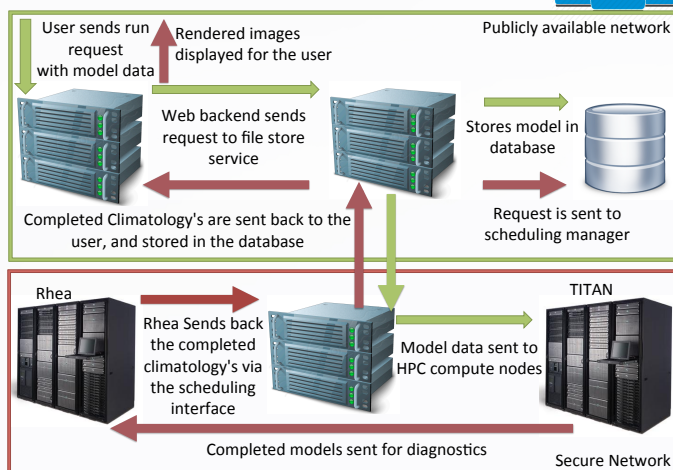
Developments Required

The ACME workflow environment is designed and being developed to leverage the computational infrastructure available at the ALCF, NERSC, OLCF, as well as infrastructure at other ACME sites such as LLNL, LANL, and PNNL. Large-scale simulation will utilize systems such as Titan at the OLCF (shown below) and Mira at the ALCF through the DOE Innovative and Novel Computational Impact on Theory and Experiment (INCITE) program.

Model Run Data Flow

Expected Impact

The DOE's Pegasus and Velo systems are used to provide a central registry and access point for the Leadership Compute Facilities (i.e., NERSC, ALCF, OLCF) resources from computer and storage systems over services such as ESGF and Globus to model versions, UV-CDAT diagnostic and metrics packages, and workflow modules. Through the ACME Dashboard it will be possible for the individual researcher to locate, compose and use their required resources, while being able to share progress, tools and results with collaborators and the wider ACME research community, receiving updates on and access to the latest time saving workflows and advanced diagnostics. The captured resource descriptions and provenance information will support the study, comparison and reproducibility of development, testing, model run and analysis tasks, as well as the investigation of unexpected results. Having all these resources at their fingertips, tightly integrated and optimized, will remove potential sources of error and inefficiency and enable the individual researcher and the overall research collaboration to be more efficient.

ACME Dashboard web frontend GUI mockup