SimU

RESEARCH UNLIMITED

Connecting the world's universities to reasearch-driven simulation software

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ABSTRACT

SimU is a framework and content management system for scientists and engineers looking to share command-line simulation applications with their communities of students and colleagues in an easy, accessible web-based format.

SIMULATIONS

The SimU API allows researchers to add new and existing command-line simulations to their online deployments, and simulation results can be displayed to users with any combination of text, files, and custom data visualizations.
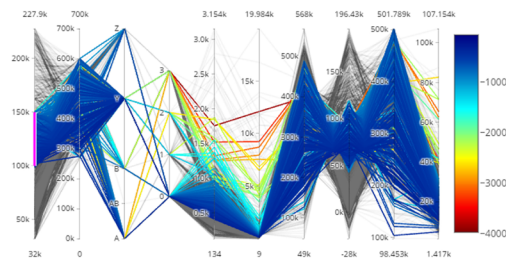

Figure 1 - JavaScript output enables simulation developers to create fully interactive results with any JS library, such as this interactive graph created with Plotly.

SCALABILITY

SimU is capable of offloading intensive simulation computations to separate machines, allowing the application to scale up with increasing users and the processing power needed by the simulations it runs.
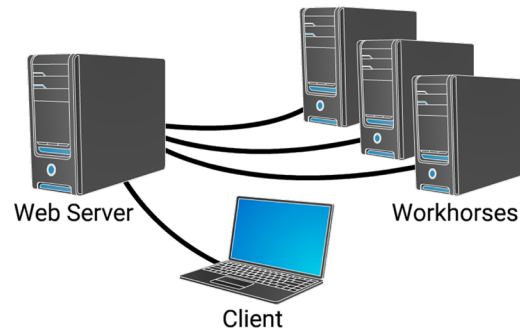

Figure 2 - A depiction of the SimU scalable architecture.

OPTIMIZATION

SimU contains several features that administrators can take advantage of to optimize available resources:

- Result Caching
- Job Joining
- File Redundancy Checks

USER MANAGEMENT

To further aid in protecting system resources, SimU offers a secure and flexible user permission system including:

- Standard, Manager, and Admin Permissions
- Simulation Access Request System
- Public Simulation Options
- Simulation Sharing
- Result Sharing

TECHNOLOGIES

SimU runs on the following technologies: